

**CITY OF BALTIMORE**  
**Brandon M. Scott**  
**Mayor**

**DEPARTMENT OF GENERAL SERVICES**  
**Berke Attila**  
**Director**

**CONTRACT NO. GS 21822**

**NORTHWEST COMMUNITY ACTION CENTER – LOWER  
PARK HEIGHTS - RENOVATIONS**

**3939 REISTERSTOWN ROAD**  
**BALTIMORE, MARYLAND 21215**

**Marwan Alkarajat**  
**Chief**  
**Major Projects Division**

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**CITY OF BALTIMORE  
DEPARTMENT OF GENERAL SERVICES  
NOTICE OF LETTING**

Sealed Bids or Proposals, in duplicate, addressed to the Board of Estimates of the Mayor and City Council of Baltimore and marked for **GS21822 – NORTHWEST COMMUNITY ACTION CENTER - LOWER PARK HEIGHTS - RENOVATIONS**, will be received at the Office of the Comptroller, Room 204, City Hall, Baltimore, Maryland until 11:00 A.M. on **WEDNESDAY, DECEMBER 13, 2023**. Board of Estimates employees will be stationed at the Security Unit Counter just inside the Holliday Street entrance to City Hall from 10:45 A.M. to 11:00 A.M. on Wednesday to receive Bids. Positively no bids will be received after 11:00 A.M. The bids will be publicly opened by the Board of Estimates in Room 215, City Hall at Noon. Bid opening proceedings can be also viewed live at <https://www.charmtvbaltimore.com/live-stream> at 12:00 Noon. Bid tabulation sheets detailing the bids received will be publicly posted to the Comptroller’s website by COB on the date of bid opening.

The Contract Documents may be purchased for a non-refundable cost of **\$50.00** by contacting Azza Rizkallah at [azza.rizkallah@baltimorecity.gov](mailto:azza.rizkallah@baltimorecity.gov) as of **FRIDAY, NOVEMBER 03, 2023**. **Conditions and requirements of the Bid are found in the bid package.**

All contractors bidding on this Contract must first be pre-qualified by the City of Baltimore Boards and Commissions. Interested contractors should call 410 396-6883 or contact the Office of Boards and Commissions at 4 South Frederick Street, 4<sup>th</sup> Floor, Baltimore, MD 21202. **If a bid is submitted by a Joint Venture (“JV”), then in that event, the documents that establish the JV shall be submitted with the bid for verification purposes.** The Prequalification Category required for bidding on this project is **F07500 – ROOFING INDUSTRIAL**.

The Cost Qualification Range for this work shall be **\$1,000,000.01 to \$2,000,000.00**

A “Pre-Bidding information” session will be conducted at **THE SITE: 3939 REISTERSTOWN ROAD, BALTIMORE, MD 21215 on TUESDAY, NOVEMBER 14, 2023 AT 10:00 A.M.**

Principal Items of work for this project are:

**1. Roofing**

The MBE goal is **32%**      The WBE goal is **14%**

APPROVED:

APPROVED:

\_\_\_\_\_  
Secretary, Board of Estimates

\_\_\_\_\_  
Chief, Capital Projects Division

\_\_\_\_\_  
Chief Solicitor

\_\_\_\_\_  
Chief, Minority and Women’s  
Business Opportunity Office

\_\_\_\_\_  
Director,  
Department of General Services

**ADDITIONAL BIDDING INFORMATION, REQUIREMENTS, AND CONDITIONS**

1. Representatives from the Board of Estimates will be stationed at the Security Unit Counter just inside the Holliday Street entrance of City Hall from 10:45 a.m. to 11:00 a.m. every Wednesday to receive Bids.
2. Bid Guarantee: A certified check of the bidder or a bank cashier's check or a bank treasurer's check drawn on a solvent clearing house bank, made payable to the Director of Finance or a bid bond executed on the form as provided in the Bid or Proposal for an amount which is not less than that determined by multiplying the total bid submitted by two percent (2%) will be required with each bid over \$100,000.00. If the bid is less than or equal to \$100,000.00 no Bid Bond is required.
3. Bidders interested in utilizing the City's Self-Insurance Program for payment and performance security for contracts not exceeding \$100,000.00 may contact the Department of Finance, the Program Administrator, for eligibility requirements and premium costs.
4. **The Board of Estimates reserves the right to reject any and all Bids and/or waive technical defects, if in its judgment, the interest of the Mayor and City Council of Baltimore may so require.**
5. Pursuant to Article 5, Subtitle 28 of the Baltimore City Code (2000 Edition)-Minority and Women's Business Program, Minority Business Enterprise (MBE) and Women's Business Enterprise (WBE) participation goals apply to this contract.
6. This contract is subject to a **Performance Evaluation** by the Department of General Services.

END OF SECTION

**NOTICE TO BIDDERS****SUPPLEMENTAL BIDDING INSTRUCTION**

The following instruction supplements the bidding instructions found elsewhere in the Bid Book and those referenced therein.

**EACH BIDDER IS HEREBY NOTIFIED THAT HE/SHE/IT MUST COMPLETELY FILL IN THE ORIGINAL BID AND THE REQUIRED BID/PROPOSAL AFFIDAVIT AND DOCUMENTS LOCATED IN THE BID BOOK. THE ORIGINAL BID, (WHICH MUST REMAIN ATTACHED TO THE BID BOOK) PLUS THE FULLY COMPLETED DUPLICATE BID MUST BE SUBMITTED IN THE BID ENVELOPE, IF ONE IS PROVIDED FOR THAT PURPOSE.**

**FAILURE TO FOLLOW THESE SIMPLE DIRECTIONS MAY CAUSE YOUR BID TO BE DECLARED UNRESPONSIVE AND THE BID MAY BE REJECTED BY THE BOARD OF ESTIMATES.**

**MINORITY AND WOMEN'S BUSINESS PROGRAM**

- ❖ INCLUDED IN THIS CONTRACT IS A MINORITY AND WOMEN'S BUSINESS PROGRAM PACKAGE.
- ❖ MINORITY AND WOMEN'S BUSINESS PROGRAM PACKAGE FORMS MUST BE COMPLETED AND SUBMITTED WITH YOUR BID PROPOSAL.
- ❖ FAILURE TO SUBMIT THE INFORMATION AT THE TIME REQUESTED WILL BE CAUSE TO HAVE YOUR BID REJECTED.

**BALTIMORE APPRENTICESHIP TRAINEE PROGRAM (BATP)**

- ❖ INCLUDED IN THIS CONTRACT IS A BALTIMORE APPRENTICESHIP TRAINEE PROGRAM PACKAGE (BATP DOCUMENTS).
- ❖ BATP FORMS MUST BE COMPLETED AND SUBMITTED **WITH YOUR BID PROPOSAL**.
- ❖ FAILURE TO SUBMIT THE INFORMATION AT THE TIME REQUESTED MAY BE CAUSE TO HAVE YOUR BID REJECTED.
- ❖ COMPLETED BATP FORMS ARE ONLY REQUIRED FOR BIDS OF \$1,000,000.00 OR MORE.
- ❖ **NOTE:** ORIGINAL BATP FORMS ARE INCLUDED IN THE ACCOMPANYING MANILA BID ENVELOPE IF THE ENGINEER'S ESTIMATE FOR A PROJECT IS \$ 750,000.00 OR MORE.

**EMPLOY BALTIMORE AND  
BALTIMORE CITY'S YOUTHWORKS PROGRAM**

- ❖ ALSO INCLUDED IN THIS CONTRACT IS AN EMPLOY BALTIMORE PACKET AND A BALTIMORE CITY'S YOUTHWORKS PROGRAM FORM.
- ❖ ALL FORMS IN THE EMPLOY BALTIMORE CERTIFICATION PACKET AND THE SINGLE PAGE BALTIMORE CITY'S YOUTHWORKS FORM MUST BE COMPLETED AND SUBMITTED WITH YOUR BID PROPOSAL.
- ❖ FAILURE TO SUBMIT THE INFORMATION AT THE TIME REQUESTED MAY BE CAUSE TO HAVE YOUR BID REJECTED.
- ❖ THE ACCOMPANYING MANILA BID ENVELOPE CONTAINS AN EMPLOY BALTIMORE PACKET AND BALTIMORE CITY'S YOUTHWORKS PROGRAM ORIGINAL DOCUMENTS WHICH MUST BE COMPLETED FOR ALL CONTRACTS.
- ❖ ALL FORMS IN THESE PACKETS MUST BE COMPLETED AND SUBMITTED **WITH YOUR BID PROPOSAL**.
- ❖ FAILURE TO SUBMIT THE INFORMATION AT THE TIME REQUESTED MAY BE CAUSE TO HAVE YOUR BID REJECTED.

**LOCAL HIRING LAW**

- ❖ ALSO INCLUDED IN THIS CONTRACT IS NOTIFICATION OF THE LOCAL HIRING LAW EFFECTIVE DECEMBER 23, 2013. PLEASE REFER TO THE "INSTRUCTION TO BIDDERS" SECTION AND THE "LOCAL HIRING LAW" SECTION WITHIN THIS SPECIFICATION FOR REQUIREMENTS OF THE LAW.

**BOARD OF ESTIMATES RESOLUTIONS AND EXECUTIVE ORDER****EXECUTIVE ORDER**

**WHEREAS**, the Mayor and City Council of Baltimore ("City") wishes to encourage all contractors awarded City contracts to agree to employ skilled and qualified Baltimore City residents to meet the contractor's employment needs created as a result of the award of a City contract; and

**WHEREAS**, the Mayor's Office of Employment Development ("MOED") has established the **EMPLOY BALTIMORE** program designed to create opportunities for businesses that receive City contracts to meet their workforce needs; to access qualified City job seekers; and to ensure that City dollars contribute to the local economy; and

**WHEREAS**, MOED has a roster of Baltimore City residents, who are skilled and qualified for immediate employment by City contractors; and

**WHEREAS**, MOED wishes to establish and maintain an ongoing relationship with City contractors in an effort to address current and future employment and/or training needs; and

**WHEREAS**, increasing employment participation of City residents is good business and a means to improve Baltimore City's employment rate.

**NOW, THEREFORE**, I, Stephanie Rawlings-Blake, Mayor of the City of Baltimore, by virtue of the authority vested in me by the Charter of Baltimore City, do hereby promulgate the following **EXECUTIVE ORDER**:

1. This Executive Order shall apply to contracts awarded by the City that are in the amounts of \$50,000.01 to \$300,000.00, except for professional service contracts and emergency contracts.
2. Bidders on all contracts awarded by the City in the amounts of \$50,000.01 to \$300,000.00, except for professional service contracts and emergency contracts, shall complete the **Employ Baltimore Certification Statement** contained in the Bid Document and submit it with their bids.
3. Within two (2) weeks of receiving the award of a City contract, the contractor shall schedule a meeting with MOED to: (a) assess its employment needs, and (b) discuss other services provided by MOED. If applicable, MOED will then tailor specific hiring and/or training programs to benefit the contractor. The contractor will not receive its first progress payment under the contract, unless and until the said meeting has been scheduled.
4. Should the contractor's workforce plan indicate a need to fill new jobs, the contractor must agree to post these positions through MOED and its One Stop Career Center Network for a period of seven (7) days prior to publicly advertising the openings. This will enable MOED to identify and refer qualified City residents to the contractor as candidates for these job opportunities.


5. Each contractor shall submit an **Employ Baltimore** Employment Report to MOED on June 30<sup>th</sup> and December 31<sup>st</sup> during each and every year of its contract, and at the end of the contract, indicating the number of City residents on its payroll. The submission of the Employments Reports as required shall be a condition precedent to the City's release of a final payment or any and all retainage held by the City, pursuant to the contract.

6. A copy of this **Executive Order** shall be included in all bids, requests for proposals and/or contracts.


7. This **Executive Order** applies to all applicable City contracts entered into on or after December 23, 2013.

8. This **Executive Order** supersedes the Resolution of the Board of Estimates for the Employ Baltimore Executive Order signed by the Mayor on June 9, 2011, and shall take effect immediately.


IN WITNESS HEREOF, I HAVE HEREUNTO  
PLACED MY HAND AND THE GREAT SEAL  
OF THE CITY OF BALTIMORE THIS

DAY OF  
2013.  
  
STEPHANIE RAWLINGS-BLAKE, MAYOR

Approved As To Form and Legal  
Sufficiency By The Law Department  
Of Baltimore City:

  
Michael Schrock  
Chief Solicitor

ATTEST:

  
Custodian of City Seal  
Alternate

APPROVED BY THE BOARD OF ESTIMATES:  
DEC 18 2013

  
Bernard King  
Clerk





## EXECUTIVE ORDER

WHEREAS, the Mayor and City Council of Baltimore ("City") is committed to promoting the well-being and positive development of the City's youth and providing educational and enrichment opportunities which will lead to academic improvement, safer environments and a reduction in high risk behavior; and

WHEREAS, Baltimore City has an estimated 76,000 citizens between the ages of 14-21, and

WHEREAS, the federal government ceased funding summer job programs for youth in 2000 after 25 years, causing local and state governments to join with businesses, philanthropic, faith-based, community, and educational organizations to obtain grants, tax-deductible donations and job opportunities to help these deserving youth; and

WHEREAS, the City and the Mayor's Office of Employment Development ("MOED") have established the Baltimore City's YouthWorks program to prepare dependable Baltimore City high school and college students for productive employment that meets the workforce needs of local businesses; and

WHEREAS, the City wishes to encourage all local businesses and contractors, service providers, consultants and vendors, etc doing business with the City to employ skilled and qualified Baltimore City youth between the ages of 14-21, who meet the job ready status, as defined by Baltimore City's YouthWorks program, during the summer of 2008; and

WHEREAS, the need to help Baltimore City's youth has never been greater

NOW, THEREFORE, I Sheila Dixon, Mayor of the City of Baltimore, by virtue of the authority vested in me by the Baltimore City Charter, do hereby promulgate the following EXECUTIVE ORDER:

- 1 Henceforth, each and every Solicitation from every City Department, Agency and Office, where the Bid is expected to be \$25,000 or more, shall contain the attached form Each and every Bidder shall provide the City with the (a) name, (b) complete address, (c) telephone number and (d) a contact person to assist MOED with the YouthWorks program.
2. MOED shall contact each and every business identified in §1 above and request that the business, contractor, service provider, consultant and vendor, etc. join with the City in reaching its goal of employing Baltimore City's YouthWorks referrals, or otherwise assist the Baltimore City's YouthWorks program.
- 3 MOED shall establish and maintain an ongoing relationship with City businesses, contractors, service providers, consultants and vendors, etc in an effort to address their current and future employment and/or training needs.
- 4 This Executive Order shall take effect immediately

IN WITNESS WHEREOF, I HAVE  
PLACED MY HAND AND THE  
GREAT SEAL OF THE CITY OF  
BALTIMORE THIS 14<sup>TH</sup> DAY OF  
JANUARY 2008

(SIGNED) SHEILA DIXON, MAYOR

Approved As To Form And  
Legal Sufficiency By The Law  
Department Of Baltimore City

(Signed) Leslie S. Winner  
Chief Solicitor

**RESOLUTION OF THE BOARD OF ESTIMATES  
OF THE CITY OF BALTIMORE**

**WHEREAS**, the Mayor and City Council of Baltimore, acting by and through the Board of Estimates pursuant to Article VI, Section 4 of the Charter of Baltimore City, 1964 Revision, as amended, is responsible for awarding contracts and supervising all purchasing by the City; and

**WHEREAS**, the Board of Estimates wishes to insure that all City contractors, subcontractors and their agents and employees conduct themselves in accordance with established federal, state, and local laws.

**NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF ESTIMATES OF BALTIMORE CITY**, that the following policy, which has always been applicable to City contracts, be formally adopted by this Board to apply to all City contractors, subcontractors and their agents and employees:

1. Contractors, subcontractors, and their agents and employees may not engage in unfair labor practices as defined under The National Labor Relations Act and applicable federal regulations and state laws.

2. Contractors, subcontractors, and their agents may not threaten, harass, intimidate or in any way impede persons employed by them who on their own time exercise their rights to associate, speak, organize, or petition governmental officials with their grievances.

3. If the Board of Estimates determines that a contractor, subcontractor, or their agents have violated the policy set forth in this Resolution said contractor, or subcontractor will be disqualified from bidding on City contracts, and if they are currently completing contracts, they will be found in default of their contracts.

4. A copy of this Resolution must be included in all City contracts.

5. This Resolution applies to all City contracts entered into after the date of its adoption and to each and every City contract, or subcontract in effect on the date of its adoption, and each department and agency of the City is charged with the responsibility of so notifying all present contractors, and subcontractors.

6. This Resolution takes effect immediately.



APPROVED BY THE BOARD OF  
ESTIMATES

(Signed)  
Shirley A. Williams June 29, 1994  
Clerk Date

Approved As To Form And  
Legal Sufficiency This  
28th Day of June, 1994

(Signed)Leslie S. Winner  
Leslie S. Winner  
Principal Counsel

**RESOLUTION OF THE BOARD OF ESTIMATES****APPRENTICESHIP TRAINING PROGRAMS**

**WHEREAS**, the Mayor and City Council of Baltimore, acting by and through the Board of Estimates, pursuant to Article VI, Section 4 of the Charter of Baltimore City, 1964 Revision, as amended, is responsible for awarding contracts and supervising all purchasing by the City; and,

**WHEREAS**, the Board of Estimates wishes to insure that all prime contractors performing under any City construction contract conduct apprenticeship training programs as a condition of their contracts;

**NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF ESTIMATES OF BALTIMORE CITY**, that the following policy applies to all prime contractors performing under any construction contract of the City that has a total cost of \$1,000,000.00 or more:

1. Prime Contractors shall conduct apprenticeship training programs as a condition of their contracts.
2. Prime Contractors shall submit to the contract administrator for the City agency supervising the contract, within ten days of their receipt of notice of award of each contract, evidence of its participation in a certified apprenticeship program that has been previously approved by the contract administrator, or an apprenticeship training action plan for approval by the contract administrator. Prime Contractors will further submit, from time to time as requested by the contract administrator, evidence of and statistics concerning the apprenticeship training actually performed by the Prime Contractors in connection with each City contract.
3. If the Board of Estimates determines that a Prime Contractor has violated the policy set forth in this Resolution, then the Prime Contractor may be disqualified from bidding on future City contracts, or may be found in default of its existing contract.
4. A copy of this Resolution must be included in all City contracts.
5. This Resolution applies to all City Contracts entered into after the date of its approval by the Board of Estimates.
6. This Resolution takes effect immediately.

**NOTICE:** Resolution effective February 05, 2014.

**RESOLUTION  
OF  
THE BOARD OF ESTIMATES OF BALTIMORE CITY  
THE REGULATION OF BOARD OF ESTIMATES MEETINGS AND PROTESTS**

WHEREAS, the Mayor and City Council of Baltimore, acting by and through the Board of Estimates ("Board"), pursuant to Article VI, § 1 et seq. of the Charter of Baltimore City, 1996 Edition, as amended (HEREIN after referred to as "Charter"), is responsible for formulating and executing the fiscal policy of the City, approvals of settlements, acquisitions and dispositions of real property, awarding contracts and supervising purchasing by the City; and other duties as prescribed in the Charter; and

WHEREAS, the Board, pursuant to Article VI, § 1 of the Charter is composed of the Mayor, President of the City Council, Comptroller, City Solicitor, and Director of Public Works, and the President of the City Council shall be President of the Board, and one of the members shall act as Secretary; and

WHEREAS, the members of the Board meet in public forum each Wednesday at 9:00 a.m. (unless in periodic recess) in the Hyman Pressman Hearing Room to conduct the business of government; and

WHEREAS, the Board, pursuant to Article VI, § 2 et seq. of the Charter, may promulgate rules and regulations and summon before it heads of departments, bureaus or divisions, municipal officers, and members of commissions and boards; and

WHEREAS, in the interest of promoting better government, order and efficiency the Board wishes to establish certain rules, applicable to all private individuals, business entities, fraternal organizations, special interest groups, associations and other entities, etc. (HEREIN after collectively referred to as "entity") who wish to speak at the meetings of the Board.

**NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF ESTIMATES OF BALTIMORE CITY**, that the following rules for the conduct of Board meetings be formally adopted by the Board to apply to all issues to be acted upon, considered, noted, or received at any given meeting:

1. Anyone wishing to speak before the Board, whether individually or as the spokesperson of an entity must notify the Clerk of the Board in writing no later than by noon on the Tuesday preceding any Board meeting, or by an alternative date and time specified in the agenda for the next scheduled meeting. The written protest must state (1) whom you represent and the entity that authorized the representation (2) what the issues are and the facts supporting your position and (3) how the protestant will be harmed by the proposed Board action.

2. Requests to speak on matters submitted to the Board for its information, notation or status report from a previous Board action may be heard at the discretion of the President of the Board. This rule does not preclude the submitting agency from orally presenting the report or matter at the meeting of the Board.

3. Matters may be protested by any entity directly and specifically affected by a pending matter or decision of the Board. The person or entity must submit a written protest of that matter or pending decision. In order for a protest to be considered, the protestant must be present at the Board of Estimates meeting.

4. An entity affected by the disposition of the matter in a way different than an average taxpayer or citizen and who so specifies to the satisfaction of the Board may have their protest heard and considered by the Board. However, the President of the Board reserves the right to call a person or organization to give testimony that he/she determines furthers the effective and fair decision making process of the Board. Protests filed by persons not affected by the disposition of the matter in a way different than an average taxpayer or citizen will be handled and responded to as may be determined by the Clerk of the Board.

5. Protests may be submitted, orally presented and argued by representatives or entities directly impacted by a matter or pending decision before the Board. A Procurement Lobbyist, as defined by Part II, Sec. 8-8 (c) of The City Ethics Code must register with the Board of Ethics as a Procurement Lobbyist in accordance with Section 8-12 of The City Ethics Code. If any member of the Board has sufficient information to determine that Section 8-12 has not been complied with, he or she may make a complaint to the Board of Ethics.

6. The President of the Board shall have the right to limit all speakers to items and issues on the Board agenda, as well as provide a maximum time limit available to a speaker who wishes to address the Board.

7. In the interest of promoting order and efficiency of hearings, persons who are disruptive to the hearing may be required to leave the hearing room.

8. A copy of this Resolution shall be posted in the Department of Legislative Reference, the President of the Board's web site, and the Secretary to the Board's web site and shall be included in all Solicitations.

9. This Resolution shall apply to all Board meetings which are convened two (2) weeks or more after its formal adoption.

Adopted by the Board of Estimates:

Bernie N. Taylor      JUN 22 2014  
Clerk                              Date

Approved As To Form and Legal  
Sufficiency This 14<sup>th</sup> Day of  
January, 2014

  
\_\_\_\_\_  
Chief Solicitor

**SECTION 00025**  
**SPECIAL PROVISIONS**

**SP-1 CONTRACT DOCUMENTS**

The Contract Documents for this project consist of but are not limited to, the following:

1. **Contract Book** which contains:

- A. Notice of Letting
- B. Special Provisions
  - 1) Instruction to Bidders
  - 2) Special Conditions
  - 3) Construction Details and Materials
  - 4) Notice of Proposed Change Order
  - 5) Extra Work Certification
  - 6) Subcontractors acknowledgement of progress payment
- C. Bid or Proposal and Detached Duplicate
- D. Agreement
- E. Bonds

May contain: Addendum

2. **Contract Plans**

The following numbered and titled Plans form a part of these Contract Documents. The Engineer will furnish, from time to time as the work progresses, such supplemental drawings as may necessary for further illustrating the details of the permanent work, and the Contractor will be required to abide by any modifications, supplemental Plans and Specifications that may be furnished by the Engineer.

The Plans referred to in the Contract Documents are entitled:

**CITY OF BALTIMORE**  
**DEPARTMENT OF GENERAL SERVICES**  
**CONTRACT NO. GS21822**

**NORTHWEST COMMUNITY ACTION CENTER - LOWER PARK HEIGHTS - RENOVATIONS**

These documents contain drawings as shown in the Table of Contents.

3. **Standard Specifications**

The City of Baltimore, Department of Public Works, Specifications for Material, Highways, Bridges, Utilities and Incidental Structures, Issue of 2006 is hereby made part of these Contract Documents and hereinafter referred to as "Standard Specifications".

Any references in the Contract Documents made to an Article, Section, Paragraph or Table shall refer to the Standard Specifications, unless otherwise noted.

4. **Book of Standards**

The City of Baltimore, Department of Public Works, Book of Standards are hereby made a part of these Contract Documents and hereinafter referred to as "Book of Standards". Any reference in the Contract Documents made to a Standard Number shall refer to the Book of Standards, unless otherwise noted.

The Book of Standards is available online at:

<https://transportation.baltimorecity.gov/transportation/bookofstandards>

5. **Guidelines for the Performance Evaluation of Design Consultants and Construction Contractors**

Pursuant to and in accordance with provisions of Article VI, Section 11 (c) AND 11(f) of the Charter of Baltimore City 1996 Edition, the City of Baltimore, City of Baltimore Rules for Qualification of Contractors, Performance Evaluations of Construction Contractors and Consultants and Procedures and Guidelines for Hearings before the Office of Boards and Commissions Review Committee November 30, 2016, Guidelines have been promulgated for the evaluation of the performance of design consultants and construction contractors and are hereby made a part of these Contract Documents.

**SECTION 00100**  
**INSTRUCTIONS TO BIDDERS**

**IB-1 PURCHASE OF THE STANDARD SPECIFICATIONS**

The Standard Specification is also available free online for download at:  
<http://generalservices.baltimorecity.gov/gm-major-projects/greenbook>

**IB-2 SCOPE OF WORK**

The Principal Items of work under this Contract are as shown on the **NOTICE OF LETTING**

**IB-3 LOCATION(S) OF WORK**

Work under this Contract will be restricted to the location(s) listed herein. There shall be no deviation from the location(s) so specified either by additions, subtractions or alterations by the Contractor or his representative without advance written permission from the Engineer.

**IB-4 CONTRACT BOOK**

The successful Bidder, upon execution of the Agreement and Bonds, will receive up to five (5) copies of the Contract Book – no charge.

**IB-5 BALTIMORE APPRENTICESHIP TRAINEE FORMS (BATP)**

Also included in this contract is a Baltimore Apprenticeship Trainee Program package (BATP documents). The duplicate BATP forms must be completed and submitted with your bid proposal. Completed BATP forms are only required for bids of \$1,000,000.00 or more. Failure to submit the information at the time requested MAY be cause to have your bid rejected.

**IB-6 EMPLOY BALTIMORE PACKET**

Also included in this contract is an Employ Baltimore Packet. The accompanying manila bid envelope contains Employ Baltimore Packet duplicate documents which must be completed for all contracts with bids in excess of \$50,000.01. All forms in the Employ Baltimore Packet must be completed and submitted with your bid proposal. Failure to submit the information at the time requested may be cause to have your bid rejected.



**IB-7 LOCAL HIRING LAW**

Article 5, Subtitle 27 of the Baltimore City Code, as amended (the “Local Hiring Law”) and its rules and regulations apply to contracts and agreements executed by the City on or after the Local Hiring Law’s effective date of December 23, 2013. The Local Hiring Law applies to every contract for more than \$300,000 made by the City, or on its behalf, with any person. It also applies to every agreement authorizing assistance valued at more than \$5,000,000 to a City subsidized project. Unless the Mayor’s Office of Employment Development (“MOED”) grants an exception under the Local Hiring Law, at least 51% of the new jobs required to complete the contract of project must be filled by Baltimore City residents.

1. Within two (2) weeks of the Board of Estimate’s award of the contract or approval of the agreement, the contractor shall have a meeting, whether in person or via telephone, with MOED to complete an employment analysis and review the workforces plan required for such contract or agreement. The contractor will not receive any payments under the contract or agreement, unless and until the employment analysis is performed. Contact information for MOED can be found on its website: [www.oedworks.com](http://www.oedworks.com).
2. Should the contractor’s workforce plan indicate a need to fill new jobs, the contractor shall post the new job opening with MOED’s One Stop Career Center Network for a period of seven (7) days prior to its publicly advertising these opening. Further, the contractor shall interview qualified Baltimore City residents referred from MOED, and unless granted an exception, fill at least fifty-one percent of the new jobs required to complete the contract or project, with Baltimore City residents.

**IB-8 BALTIMORE CITY’S YOUTHWORKS PROGRAM**

Also included in this contract is a Baltimore City’s Youthworks Form. The accompanying manila bid envelop contains a Baltimore City’s Youthworks Form duplicate document which must be completed for all contracts. The single page Baltimore City’s Youthworks Form must be completed and submitted with your bid proposal. Failure to submit the information at the time requested MAY be cause to have your bid rejected.

**IB-9 CONTRACTORS EXPENSES, PERMITS, LICENSES, CHARGES, AND NOTICES**

Per the City of Baltimore, Department of Public Works, Specifications for Material, Highways, Bridges, Utilities and Incidental Structures, Issue of 2006, Sections 00 73 18 – Contractors Expense and 01 41 26 – Permits, Licenses, Charges, and Notices in the Baltimore City Green Book, the Contractor is responsible for all permit fees. “Permit fees” shall include all fees associated with any permit necessary for the Contractor to perform work, including the building permit. Information regarding the cost of the building permit, trade permits and other permits can be found at [http://static.baltimorehousing.org/pdf/permits\\_fees.pdf](http://static.baltimorehousing.org/pdf/permits_fees.pdf).

**IB-10 BOND PREMIUM**

A letter from the bonding company with the bonding rate is required. Awarded Contractor is required to provide this information upon executing the Payment and Performance Bonds.

**IB-11 CERTIFICATION TO ACCOMPANY REQUESTS FOR PROGRESS PAYMENTS or REQUESTS FOR PAYMENTS** Per the City of Baltimore, Department of Public Works, Specifications for Material, Highways, Bridges, Utilities and Incidental Structures, Issue of 2006, Sections 01 29 76, the following language shall be included in all requests for progress Payments:

**CITY OF BALTIMORE  
DEPARTMENT OF GENERAL SERVICES**

CONTRACT NUMBER: GS21822

PROJECT: NORTHWEST COMMUNITY ACTION CENTER - LOWER PARK HEIGHTS - RENOVATIONS

DATE: \_\_\_\_\_  
(Preferably as of end of month)

To the Director of Finance:

In reference to the above referenced contract, we hereby certify that as of the above date no extra work or other conditions that would give rise to additional costs have been authorized either in writing, verbally, or otherwise except that which is represented by fully executed Change Orders Expenditure Authorization Requests and that as of the above date we are not aware of any condition that would give rise to any additional claim upon the Mayor and City Council of Baltimore in reference to the above project, EXCEPT AS FOLLOWS:

(List exceptions here):

\_\_\_\_\_  
\_\_\_\_\_

Supporting Documents  
Attached hereto:

**CERTIFIED CORRECT:**

- 1. Contractor's Release  
conditional upon Final payment \_\_\_\_\_  
Name of Contractor
- 2. Subcontractors' Acknowledgement  
of progress Payment and Release

\_\_\_\_\_  
Date of Certification

By: \_\_\_\_\_  
Authorized Signature

**THIS FORM MUST ACCOMPANY ALL REQUESTS FOR PAYMENTS.**

**IB-12 SUBCONTRACTOR'S ACKNOWLEDGEMENT OF PROGRESS PAYMENT**

Per the City of Baltimore, Department of Public Works, Specifications for Material, Highways, Bridges, Utilities and Incidental Structures, Issue of 2006, Sections 01 29 77, the following language shall be included in all requests for progress Payments:

**SUBCONTRACTOR'S ACKNOWLEDGEMENT OF PROGRESS PAYMENT**

**NOTICE: THIS DOCUMENT STATES THAT YOU HAVE BEEN PAID FOR PERFORMING CERTAIN SERVICES. PLEASE READ IT CAREFULLY BEFORE SIGNING.**

As of the date listed below, the undersigned subcontractor has received progress payments totaling \$ \_\_\_\_\_ to date for labor, services, equipment, or materials furnished to \_\_\_\_\_ (Name of General Contractor)

on the following contract of the Mayor and City Council of Baltimore:

Contract No. GS21822 - NORTHWEST COMMUNITY ACTION CENTER - LOWER PARK HEIGHTS - RENOVATIONS

Is your company's work on this contract completed \_\_\_\_\_ Yes \_\_\_\_\_ No

Dated: \_\_\_\_\_ Subcontractor Name (Company)

By \_\_\_\_\_ Name (Signature)

\_\_\_\_\_  
Name (Printed) Title

**THIS FORM MUST ACCOMPANY ALL REQUESTS FOR PAYMENT**

**IB 13 BID DOCUMENT CHECKLIST\***

The following must occur as part of your bid submission or your bid may be deemed non-responsive:

DONE	REQUIRED ACTIONS
<input type="checkbox"/>	Each Addendum issued must be acknowledged on the specific Addendum form and attached to the contract specification with the bid submission.
<input type="checkbox"/>	Bid Prices for each and every item and the total must be entered where indicated. <u>Make sure that the Unit Price item (s) is filled out.</u>
<input type="checkbox"/>	Follow all of the instructions on the Minority Business forms contained in the bid/specification package: Complete each line with the <u>exact</u> information that is requested; If a total subcontract value is requested, do not enter a percentage instead; Execute the form on behalf of the bidder; Confirm that the proposed subcontractor has executed the form.
<input type="checkbox"/>	Provide one original Bid Bond (with original Power of Attorney) or other acceptable bid security in acceptable amount along with a copy of the bid bond or other bid security: If locally funded, 2% of the total bid amount
<input type="checkbox"/>	Complete and answer all Bid/proposal Affidavits located after the Bid or Proposal. Ensure that a representative with the proper authority signs in the appropriate pages. Should a representative who is NOT an officer or director of the company execute the bid, attach legal evidence of his/her ability to do so.
<input type="checkbox"/>	Complete the Employ Baltimore Certification Statement for projects \$300,000.00 and below, and/or the Local Hiring Certification and Compliance Statement for projects \$300,000.00 and above
<input type="checkbox"/>	Ensure the Duplicate Bid is an <u>exact replica</u> of the Original Bid and submit with the Original Bid.

**\*PLEASE NOTE- This list is not intended to be exhaustive nor all inclusive, but is provided for bidder’s guidance and informational purposes only.**

**IB-14 DIGITAL SPECIFICATIONS & DRAWINGS**

Specifications & Drawings for this project will be e-mailed to those who purchase the bid. All documents included in the e-mail shall be considered as part of the Bid documents.

**IB-15 CDC Guidelines**

All individuals, including Contractors and sub-contractors, on City property and in its facilities shall abide with all CDC guidelines in regard to COVID 19.

END OF SECTION

**SPECIAL CONDITIONS**

**SC-1 MINIMUM WAGE RATES & LABOR TRAFFICKING NOTICE REQUIREMENTS**

The Baltimore City Code Art. 5 Subtitle 25 “Prevailing Wages for Work Under Construction Contracts” establishes what is more commonly referred to as the City’s “Prevailing Wage” requirement. Contractors awarded City Construction contracts are required to pay their employees a “prevailing Wage” to be determined each year by the Board of Estimates. Contractors must become thoroughly familiar with the “Prevailing Wage” requirement. A copy of the City Code Art. 5 Subtitle 25 is included hereafter and can be also found on the City of Baltimore’s website (<http://civilrights.baltimorecity.gov/wage-commission>).

Included is a copy of the Prevailing Wage Rates that apply to this contract and Art. 5 subtitle 25-9 (Required Records-In General) and subtitle 25-10 (Required Records-Project Payroll Reports), which sets forth certain reporting requirements. An example of a payroll report is also included to be used in complying with Subtitle 25-10. If you find it more convenient you may use your own payroll form so long as it provides the information required and is in close conformity with the form enclosed. Copies of completed payroll reports shall be submitted as follows:

One Copy: Office of Civil Rights & Wage Enforcement  
 7 E. Redwood St. 9<sup>th</sup> Flr.  
 Baltimore, MD 21202  
 Phone (410-396-4835  
 Fax: (410) 752-3190

One Copy: Contracting Agency

If you need additional clarification regarding Article 5, Subtitle 25, please contact the Wage Commission at 410-396-4835.

CITY OF BALTIMORE

Brandon M. Scott, Mayor



OFFICE OF EQUITY AND CIVIL RIGHTS

WAGE COMMISSION

7 E. Redwood Street, 9th Floor  
Baltimore, Maryland 21202

**NOTICE TO CONTRACTORS  
BALTIMORE CITY PREVAILING WAGE REQUIREMENTS**

The Baltimore City Code Article. 5, Subtitle 25, "Prevailing Wages for Work Under Construction Contracts," establishes what is more commonly referred to as the City's "Prevailing Wage" requirement. Contractors awarded City construction contracts are required to pay their employees a "Prevailing Wage" to be determined each year by the Board of Estimates and must become thoroughly familiar with the "Prevailing Wage" requirement. A copy of the City Code, Art. 5, Subtitle 25 can be found on the City of Baltimore's website (<http://civilrights.baltimorecity.gov/wage-commission>). Included is a copy of the Prevailing Wage law and Rates that apply to this contract and Art. 5 subtitles 25-9 (Required Records- In General) and subtitles 25-10 (Required Records-Project Payroll Reports), which sets forth certain reporting requirements. An example of a payroll report is also included to be used in complying with Subtitle 25-10. If you find it more convenient, you may use your own payroll form so long as it provides the information required and is in close conformity with the form enclosed.

Copies of completed payroll reports with a statement of compliance shall be submitted as follows:

Via Email to [WagePayrolls@baltimorecity.gov](mailto:WagePayrolls@baltimorecity.gov)

Via Mail to: Wage Commission 7 E. Redwood Street, 9th floor Baltimore, MD 21202 or

Via Fax: (410) 752-3190

If you need additional clarification regarding Article 5, Subtitle 25, please contact the Wage Commission at 410-396-4835.

**MINIMUM WAGE PREVAILING WAGE RATES TO BE USED ON THIS PROJECT – CITY OF BALTIMORE**

Attached to this section of the special conditions are the minimum hourly wage rates established by the Board of Estimates to be paid to all classes of laborers, mechanics, or apprentices needed on the project,

**SUBTITLE 25  
PREVAILING WAGES FOR WORK UNDER  
CONSTRUCTION CONTRACTS**

**§ 25-1. Definitions.**

(a) *Apprentice.*

- (1) The term “apprentice” as used in this subtitle means a person at least 16 years of age who has entered into a written agreement with an employer or his agent, an association of employers, or an organization of employers, or a joint committee representing both, and which shall state the trade, craft, or occupation which the apprentice is to be taught, and the time at which the apprenticeship will begin and end.
- (2) All such apprenticeship agreements shall be approved by the Maryland Apprenticeship and Training Council, and certification of such approval shall be furnished to the Wage Commission.

(b) *Contractor.*

“Contractor”, as used herein, shall mean the person, firm or corporation awarded a City contract or engaged in a project receiving funds from tax increment financing in excess of \$10,000,000.

(c) *Subcontractor.*

“Subcontractor”, as used herein, shall mean any person, firm or corporation, other than the contractor, performing any work upon the site of the project, whether subcontractor or lower tier contractor.

*(City Code, 1966, art. 1, §1(c); 1976/83, art. 1, §19(parts).) (Ord. 59-1960; Ord. 67-969; Ord.73-348; Ord. 19-226.)*

**§ 25-2. Scope of subtitle.**

(a) *City contracts over \$5,000.*

This subtitle applies to each and every contract in excess of \$5,000 made by the Board of Estimates (hereinafter referred to as “the City”), or on its behalf, with any person, firm or corporation for the construction, reconstruction, erection, conversion, installation, alteration, repair, maintenance, renovation, razing, demolition, moving, removing, grading, paving, repaving, curbing, filling, excavation, or any other operation or work to be done or performed in, on, upon, or in connection with any building, bridge, viaduct, tunnel, tower, stack, or other structure, airport, land, highway, pier, wharf, sewer, drain, main, conduit, machinery, or mechanical, electrical, or other equipment.

(b) *Tax increment financing projects over \$10,000,000.*

This subtitle applies to each and every project approved by the Mayor and City Council on or after January 1, 2019, receiving funds from tax increment financing in excess of \$10,000,000

in the aggregate to the extent those funds are used in whole or in part for the construction, reconstruction, erection, conversion, installation, alteration, repair, maintenance, renovation, razing, demolition, moving, removing, grading, paving, repaving, curbing, filling, excavation, or any other operation or work to be done or performed in, on, upon, or in connection with any building, bridge, viaduct, tunnel, tower, stack, or other structure, airport, land, highway, pier, wharf, sewer, drain, main, conduit, machinery, or mechanical, electrical, or other equipment. (City Code, 1950, art. 1, §14(intro par.); 1966, art. 1, §16(a); 1976/83, art. 1, §19(intro).) (Ord. 45-225; Ord. 59-1960; Ord. 67-969; Ord. 73-348; Ord. 89-309; Ord. 19-226.)

**§ 25-3. Workday.**

(a) *Regular work day.*

8 hours shall constitute a regular work day for every laborer, mechanic, and apprentice working directly upon the site of the work for any contractor or subcontractor engaged in the performance of the contract.

(b) *Overtime.*

All hours worked on Saturdays, Sundays and all hours worked in excess of 8 hours per day on Monday through Friday and all hours worked on such legal holidays as shall be designated by the Board of Estimates as overtime holidays constitute overtime hours.

(City Code, 1950, art. 1, §14(a), (b); 1966, art. 1, §16(b),(c); 1976/83, art. 1, §19(a).) (Ord. 45-225; Ord. 59-1960; Ord. 67-969; Ord. 73-348.)

**§ 25-4. Worker classifications.**

Every such laborer, mechanic, and apprentice shall be properly classified according to his trade and skill into a classification specifically set forth in the contract, which classification has been established by the Board of Estimates as provided herein.

(City Code, 1976/83, art. 1, §19(b).) (Ord. 67-969; Ord. 73-348.)

**§ 25-5. Prevailing wages - In general.**

(a) *Payment required.*

(1) Every mechanic, laborer, and apprentice shall be paid not less often than once a week, and without subsequent deduction or rebate on any account (except payroll deductions as are directed or permitted by law, by a collective bargaining agreement, or by specific written authorization from an employee), the full amount due at the time of payment computed at wage rates not less than the prevailing hourly wage rate established by the Board of Estimates and set forth in the contract.

(2) No hourly employee, other than an apprentice, working directly upon the site of the work, may be paid less than the amount established for the lowest classification on the project.



(b) *Rates to be posted.*

(1) A copy of the prevailing hourly wage rates shall be kept posted by the contractor at the site of the work in a prominent place where it can be easily seen and read by the workers.

(2) If a copy of the prevailing hourly wage rates is not posted, the contractor shall forfeit and pay to the City a penalty in the amount of \$20 per day for each day on which the copy is not posted. Each day's violation constitutes a separate offense.

*(City Code, 1950, art. 1, §14(d); 1966, art. 1, §16(e); 1976/83, art. 1, §19(c)(1).) (Ord. 45-225; Ord. 59-1960; Ord. 67-969; Ord. 73-348; Ord. 89-309; Ord. 08-085.)*

**§ 25-6. Prevailing wages - Overtime.**(a) *Payment required.*

The contractor and every subcontractor shall pay every such laborer, mechanic, or apprentice compensation at the overtime rates established by the Board of Estimates, which shall not be less than 1½ times the regular hourly rate of pay, for all hours worked in excess of 8 hours in any work day, on a Saturday, Sunday or a legal holiday designated as an overtime holiday by the Board of Estimates.

(b) *How computed.*

No overtime hours, however, shall be compensated for more than once and overtime shall be paid only on the regular hourly rate of pay and not on the fringe benefits or their cash equivalents, provided for in § 25-17 of this subtitle.

*(City Code, 1950, art. 1, §14(b); 1966, art. 1, §16(d); 1976/83, art. 1, §19(c)(2).) (Ord. 45-225; Ord. 59-1960; Ord. 67-969; Ord. 73-348; Ord. 08-085.)*

**§ 25-7. Prevailing wages - Sanctions for underpayment.**(a) *\$50 per day.*

In the event that any such laborer, mechanic, or apprentice shall be paid less than the compensation to which he shall be entitled hereunder, the contractor shall make restitution to such affected employee for the amount due, and shall forfeit and pay to the City a penalty in the amount of \$50 per day for each employee so underpaid.

(b) *Exception.*

Provided, however, that no penalty shall be assessed for wage violations to any individual which amount to a total of less than \$1 in any payroll period.

(c) *Each day a separate offense.*

Each day's violation shall constitute a separate offense.

*(City Code, 1950, art. 1, §14(g); 1966, art. 1, §16(h); 1976/83, art. 1, §19(c)(3).) (Ord. 45-225; Ord. 59-1960; Ord. 67-969; Ord. 73-348; Ord. 89-309; Ord. 08-085.)*

**§ 25-8. Prevailing wages - Workers' complaints.***(a) In general.*

Any laborer, mechanic, or apprentice may within 1 year from the date of the incident file a protest in writing with the Wage Commission, objecting to the amount of wages paid for services performed by him on a public project as being less than the prevailing wages for such services.

*(b) Retaliation prohibited.*

(1) It is unlawful for any contractor or subcontractor to discharge, reduce the compensation of, or otherwise discriminate against any laborer, mechanic, or apprentice for making a complaint to the Wage Commission, participating in any of its proceedings, or availing himself or herself of any civil remedies.

(2) In such a case, the Wage Commission may, pursuant to similar procedures as provided in Article 11, Subtitle 1 of the Baltimore City Code, as amended, order appropriate restitution or the reinstatement of such employee with backpay to the date of violation.

*(City Code, 1976/83, art. 1, §19(c)(4).) (Ord. 73-348; Ord. 04-672; Ord. 08-085.)*

**§ 25-9. Required records - In general.***(a) Contractors to maintain.*

The contractor and each of his subcontractors shall maintain payrolls and basic records relating thereto during the course of the work and shall preserve them for a period of 3 years thereafter for all laborers, mechanics, and apprentices working directly upon the site of the work.

*(b) Contents.*

These records shall contain:

- (1) the name and address of each such employee;
- (2) his classification in accordance with the classifications fixed in the contract;
- (3) a designation of laborer, mechanic, or apprentice;
- (4) the number of hours worked each day;
- (5) the hourly wage rate;
- (6) the gross wages, deductions made, and actual wages paid;
- (7) a copy of the Social Security returns and evidence of payment thereof;
- (8) a record of fringe benefit payments including contributions to approved plans, funds, or programs and/or additional cash payments; and

(9) such other data as may be required by the Board of Estimates from time to time.  
*(City Code, 1950, art. 1, §14(e); 1966, art. 1, §16(f)(1<sup>st</sup> sen.); 1976/83, art. 1, §19(d)(1).) (Ord. 45-225; Ord. 59-1960; Ord. 67-969; Ord. 73-348; Ord. 04-672.)*

**§ 25-10. Required records - Project payroll reports.**

(a) *Contractor to submit.*

The contractor shall submit 2 complete copies of his weekly project payrolls and the weekly project payrolls of each of his subcontractors, consecutively numbered, not later than 14 days from the end of their respective payroll periods, 1 copy to be sent to the contracting agency, the other to the Wage Commission where the same will be available for public inspection during regular business hours.

(b) *Contents.*

The weekly project payrolls shall contain:

- (1) the name of the prime contractor and the subcontractor, if any;
- (2) a designation of the project and location;
- (3) the name, Social Security Number, and occupation of each employee;
- (4) his classification in accordance with the classifications fixed in the contract;
- (5) a designation of laborer, mechanic, or apprentice;
- (6) the number of hours worked daily by said employee at straight time and at overtime and his hourly wage rate for each;
- (7) the gross wages paid to said employee per week; and
- (8) such other data as may be required by the Board of Estimates from time to time.

(c) *Prime contractor responsible for subcontractors.*

The prime contractor shall be responsible for the submission of all subcontractors' payrolls covering work performed directly at the work site.

(d) *Signed statement of compliance.*

Each copy of the payroll shall be accompanied by a statement signed by the contractor or the subcontractor, as the case may be, indicating:

- (1) that the payroll is correct;

- (2) that the wage rates contained therein are not less than those established by the Board of Estimates as set forth in the contract;
- (3) that the classification set forth for each laborer, mechanic, or apprentice conforms with the work he performed; and
- (4) that the contractor and the subcontractor, as the case may be, has complied with the provisions of this subtitle.

*(City Code, 1966, art. 1, §16(f)(2<sup>nd</sup> sen.) ; 1976/83, art. 1, §19(d)(2).) (Ord. 59-1960; Ord. 67-969; Ord. 73-348.)*

**§ 25-11. Required records - Delinquencies.**

*(a) Payments may be withheld.*

If the contractor is delinquent in submitting his or any of his subcontractors' payrolls, processing of partial payment estimates may be held in abeyance pending receipt of the payrolls.

*(b) Fines.*

In addition, if the contractor is delinquent in submitting any payroll, the contractor shall forfeit and pay to the City a penalty of \$10 for each calendar day that the weekly payroll is late.

*(City Code, 1966, art. 1, §16(h); 1976/83, art. 1, §19(d)(3).) (Ord. 59-1960; Ord. 67-969; Ord. 73-348; Ord. 08-084.)*

**§ 25-12. Mechanics, apprentices, and laborers.**

*(a) Mechanics and apprentices.*

- (1) On any project which is operating under a contract pursuant to the provisions of this subtitle, only competent mechanics and their apprentices of the trades, crafts, and occupations involved shall be employed by the contractor and his subcontractors on the project, provided that for each such project, the ratio of mechanics to apprentices for each trade craft or occupation shall be as established by the Maryland Apprenticeship and Training Council in connection with an approved apprenticeship program.
- (2) Provided, that whenever an apprentice is employed on any project which is operating under a contract pursuant to the provisions of this subtitle, the Wage Commission shall be notified of such employment.

*(b) Laborers.*

- (1) Nothing in this subtitle prevents the employment of laborers to perform work not ordinarily performed by a skilled mechanic or his or her apprentice of the trade, craft, or may perform work ordinarily performed by a skilled mechanic or apprentice of the trade, craft, or occupation.
- (2) Where a laborer performs the work ordinarily performed by any skilled mechanic or his or her apprentice, she or he shall be paid for the entire time she or he has performed that work at

the prevailing hourly wage rate applicable to a skilled mechanic; and in the event of underpayment, restitution shall be made by the contractor to the employee and in addition, the contractor shall be subject to a penalty as set forth in this section.

(c) *Penalties.*

(1) If the contractor or subcontractor utilizes more apprentices than permitted under the ratio established under the provisions of this subtitle, the contractor shall forfeit and pay to the City a penalty in the amount of \$20 per day per employee for each violation. Each day's violation shall constitute a separate offense.

(2) If the contractor or subcontractor pays an employee a laborer's wage rate when the employee is performing work ordinarily performed by a skilled mechanic or a skilled mechanic's apprentice, the contractor shall forfeit and pay to the City a penalty in the amount of \$50 per day per employee for each violation. Each day's violation shall constitute a separate offense.

*(City Code, 1966, art. 1, §1(a), (b); 1976/83, art. 1, §19(e).) (Ord. 59-1960; Ord. 67-969; Ord. 73-348; Ord. 89-309; Ord. 08-085.)*

**§ 25-13. Withholding payments.**

(a) *For outstanding obligations.*

The City may withhold or cause to be withheld from the contractor so much of the accrued payments as may be considered necessary:

- (1) to pay such laborers, mechanics, and apprentices employed by the contractor or any subcontractor the full amount of wages required by the provisions of this subtitle; and
- (2) to satisfy any liability of any contractor or subcontractor for any penalties as provided herein.

(b) *For failure to post rates.*

The City may also withhold payments from any contractor who has failed to post and keep posted a copy of the regular hourly rates as required herein, until such default shall have been corrected.

*(City Code, 1976/83, art. 1, §19(f).) (Ord. 67-969; Ord. 73-348.)*

**§ 25-14. Investigations.**

(a) *Agency to report irregularity.*

It shall be the responsibility of the contracting agency to promptly examine all weekly project payrolls submitted by contractors and subcontractors working upon the job site for compliance with the provisions of this subtitle and the regulations promulgated in pursuance thereof and to report any irregularities to the Wage Commission.

(b) *Commission to investigate.*

- (1) The Wage Commission shall cause investigations to be made as may be necessary to determine whether there has been compliance with the provisions of this subtitle and the regulations promulgated thereunder, and contained in the contract.
- (2) The contractor and subcontractors shall permit representatives of the City to observe work being performed upon the work site, to interview employees, and to examine the books and records relating to the payrolls on the project being investigated to determine the correctness of classifications, ratios or apprentices to mechanics and any payment of proper regular and overtime rates as required.
- (3) Complaints of alleged violations shall be investigated promptly and statements, written or oral, made by an employee shall be treated as confidential and shall not be disclosed to his employer without the consent of the employee.

(c) *Subpoenas.*

- (1) If necessary for the enforcement of this subtitle, the Wage Commission may issue subpoenas, compel the attendance and testimony of witnesses and the production of books, papers, records, and documents relating to payroll records necessary for hearings, investigations, and proceedings.
- (2) Any such subpoena shall be served by the Sheriff of Baltimore City or any of his deputies.
- (3) In case of disobedience to a subpoena, the Wage Commission may apply to a court of appropriate jurisdiction for an order requiring the attendance and testimony of witnesses and the production of books, papers, records, and documents. Said court, in case of contumacy or refusal to obey any such subpoena, after notice to the person subpoenaed, and upon finding that the attendance or testimony of such witnesses or the production of such books, papers, records and documents, as the case may be, is relevant or necessary for such hearings, investigations or proceedings of the Wage Commission, may issue an order requiring the attendance or testimony of such witnesses or the production of such books, papers, records and documents, and any failure to obey such order of court may be punishable by the court as contempt thereof.

(City Code, 1976/83, art. 1, §19(g)(1), (2).) (Ord. 67-969; Ord. 73-348.)

**§ 25-15. Penalties.**(a) *Debarment for 1 year.*

If the Board of Estimates, upon recommendation from the Wage Commission after notice and hearing, determines that any contractor or subcontractor has failed to pay the prevailing wage rate or has otherwise violated the provisions of this subtitle and that the failure was intentional, no contract may be awarded to that contractor or subcontractor, or to any firm, corporation or partnership in which that contractor or subcontractor has an interest until 1 year has elapsed from the date of the determination.

(b) *Criminal penalties.*

(1) And provided, further, that any such intentional violation of the provisions of this subtitle shall be a misdemeanor, punishable upon conviction by a fine of not more than \$500.

(2) Proceedings before the Wage Commission shall not be considered a precondition to criminal prosecution under this subtitle.

(City Code, 1950, art. 1, §14(g); 1966, art. 1, §16(h); 1976/83, art. 1, §19(g)(3).) (Ord. 45-225; Ord. 59-1960; Ord. 67-969; Ord. 73-348; Ord. 08-085.)

**§ 25-16. Schedules of prevailing wage rates.**(a) *Board of Estimates to adopt, review, and revise.*

(1) The Board of Estimates may adopt, establish, repeal, modify, change, or amend, from time to time, schedules of prevailing hourly wage rates to be paid to all classes of laborers, mechanics, or apprentices directly employed by any contractor or any subcontractor on the site in any of the various types of work or projects mentioned in or contemplated by this subtitle.

(2) These schedules of prevailing hourly wage rates shall be reviewed and revised by the Board of Estimates at least once every year to conform to the area prevailing hourly wage rates.

(b) *Basis of revision.*

(1) The revision may be based on recommendations by the prevailing wage section of the Wage Commission.

(2) The schedules of prevailing hourly wage rates, including overtime rates for all hours worked on Saturdays and Sundays, and all hours worked in excess of 8 hours per day on Monday through Friday, and all hours worked on legal holidays designated as overtime holidays by the Board of Estimates may not be less in amount than the general prevailing hourly wage rates being paid to laborers, mechanics, and apprentices for doing work of a similar character in the locality in which the project is located.

(3) These general prevailing hourly wage rates shall be determined by the Board of Estimates whose decision in the matter is final.

(c) *Authority of Board not restricted.*

Nothing in this Ordinance limits or restricts in any way the power and authority of the Board of Estimates to classify the type of work to be done for the Mayor and City Council of Baltimore and to establish schedules of prevailing hourly wage rates for these classifications.

(City Code, 1950, art. 1, §15; 1966, art. 1, §18; 1976/83, art. 1, §20.) (Ord. 45-225; Ord. 59-1960; Ord. 67-969; Ord. 73-348; Ord. 08-085.)

**§ 25-17. “Prevailing” wage rates defined; obligation to pay.**

(a) *Definitions.*

(1) In this subtitle, “prevailing hourly wage rate(s)” includes:

- (i) the regular hourly rate of pay; and
- (ii) the amount of:

(A) the rate of contribution irrevocably made by a contractor, subcontractor, or third person pursuant to a fund, plan, or program that provides for medical or hospital care, pensions on retirement or death, compensation for time lost from work due to injuries or illness, compensation for injuries or illness resulting from occupational activity, or insurance to provide any of these, for unemployment benefits, life insurance, or accident insurance, for vacation and holiday pay, for defraying costs of apprenticeship or other similar programs, or for other bona fide fringe benefits, but only where the contractor or subcontractor is not required by federal, state, or local law to provide any of these benefits; and

(B) the rate of costs to the contractor or subcontractor that may be incurred in providing the fringe benefits specified in subparagraph (A) to laborers, mechanics, and apprentices pursuant to an enforceable commitment to carry out a financially responsible plan or program that is communicated to the laborers, mechanics, and apprentices affected.

(2) The amount referred to in paragraph (1)(ii)(A) shall be determined by the Board of Estimates on the basis of those fringe benefits found to be generally prevailing for laborers, mechanics, and apprentices doing work of a similar character in the locality in which the project is located. The decision of the Board of Estimates is final.

(b) *Obligation to pay.*

The obligation of a contractor or subcontractor to make payment in accordance with the schedules of prevailing hourly wage rates established by the Board of Estimates and fixed in contracts under this subtitle may be discharged by making payments in cash, by making contributions of any type referred to in subsection (a)(1)(ii)(A), or by assuming a plan or program of a type referred to in subsection (a)(1)(ii)(B), or any combination of these, where the aggregate of the payments, contributions, and costs is not less than the rate of pay described in subsection (a)(1)(i) plus the amount referred to in subsection (a)(1)(ii).

*(City Code, 1976/83, art. 1, §21.) (Ord. 67-969; Ord. 73-348; Ord. 08-085.)*

**§ 25-18. Board of Estimates to adjudicate and assess.**

(a) *In general.*

The Board of Estimates is hereby authorized and empowered to make any and all rules and regulations from time to time, that may be necessary to effectuate the purpose of this subtitle,



including, but not limited to, the authority to make a final determination as to the amount of restitution and the amount of liquidated damages to be assessed for violations of the provisions of this subtitle.

(b) *Private action not precluded.*

In no event shall such determination of restitution preclude an employee from instituting suit to recover any underpayments due him.

(City Code, 1950, art. 1, §16; 1966, art. 1, §19; 1976/83, art. 1, §22.) (Ord. 45-225; Ord. 67-969; Ord. 73-348.)

**§ 25-19. Effect of federal law.**

(a) *Agreements with federal government.*

In case of any conflict between any provision of this subtitle or any minimum wage rate or any rule or regulation established or adopted by the Board of Estimates under the authority of this subtitle, and any provision of, or minimum wage rate or rule or regulation established by, contained or provided in, or contemplated by, any agreement, and any papers forming a part thereof, between the Mayor and City Council of Baltimore and the federal government, or any agency thereof, then the provision or minimum wage rate or rule or regulation of such agreement shall control.

(b) *Suspension of Davis-Bacon Act.*

(1) In the event that the provisions of the Federal Davis-Bacon Act are suspended as authorized by § 6 of said Act then the Board of Estimates, during the period of such suspension of the Davis-Bacon Act, may suspend the application of the provisions of this subtitle with respect to any project upon which the United States Secretary of Labor would have been required to make a prevailing wage determination under said Davis-Bacon Act.

(2) Provided that if only a portion of a particular project requires a prevailing wage determination by the United States Secretary of Labor, the Board of Estimates may suspend the application of the provisions of this subtitle with respect to that portion only or with respect to the entire particular project in its discretion.

(3) Provided, however, that nothing herein contained shall be deemed to affect in any manner the provisions of this subtitle as they apply to non-federally funded projects.

(City Code, 1950, art. 1, §17; 1966, art. 1, §20; 1976/83, art. 1, §23.) (Ord. 45-225; Ord. 71-1020.)

**§ 25-20. Existing contracts excepted.**

Nothing contained herein shall in any manner affect or apply to any existing contract to which the Mayor and City Council of Baltimore is a party or to any contract that the Mayor and City Council of Baltimore may enter into pursuant to invitations for bids issued by the municipality prior to October 1, 1945.

(City Code, 1950, art. 1, §18; 1966, art. 1, §21; 1976/83, art. 1, §24.) (Ord. 45-225.)

**§ 25-21. Inconsistent laws repealed.**

Any and all laws or ordinances and any and all parts of any and all laws or ordinances in force in the City of Baltimore inconsistent with the provisions of this subtitle are hereby repealed to the extent of any such inconsistency.

*(City Code, 1950, art. 1, §19; 1966, art. 1, §22; 1976/83, art. 1, §25.) (Ord. 45-225.)*

**§ 25-22. Severability.**

In case it be judicially determined that any phrase, clause, sentence, paragraph, section or part in or of this subtitle, or the application thereof to any person or circumstance, is invalid, the remaining provisions and the application of such provisions to other persons or circumstances shall not be affected thereby, the Mayor and City Council hereby declaring that they would have ordained the remaining provisions of this subtitle without the phrase, clause, sentence, paragraph, section or part, or the application thereof, so held invalid.

*(City Code, 1950, art. 1, §20; 1966, art. 1, §23; 1976/83, art. 1, §26.) (Ord. 45-225.)*

**§ 25-23. Effect of repeal.**

The repeal by this subtitle of any provision of law shall not revive any law heretofore repealed or superseded, nor shall any such repeal affect any act done, liability incurred, or any right accrued or vested, or affect, or abate, or prevent any right or penalty or punishment of any offense under the authority of such repealed laws.

*(City Code, 1950, art. 1, §21; 1966, art. 1, §24; 1976/83, art. 1, §27.) (Ord. 45-225.)*

**FISCAL YEAR 2023 PREVAILING WAGE RATES**

**CLASSIFICATION NO. 1**

The following minimum hourly wage rates shall apply to all contracts in excess of One Hundred Thousand Dollars (\$100,000) in connection with new building construction, major remodeling and rehabilitation of buildings and for construction, reconstruction, erection, conversion installation, alteration, renovation, razing, demolition, moving or removing on any airport, pier wharf, sewer, drain, main, conduit, machinery or mechanical, electrical or other equipment or any other operation, or work to be done or performed in, on, upon or in connection with any building, bridge over water, tunnel, tower, stack, filtration plant, waste water or sewage treatment works, pumping stations, and other such structures.

<b>JOURNEYMEN</b>	<b>HOURLY RATE</b>	<b>FRINGE BENEFITS</b>	<b>TOTAL</b>
Asbestos Workers (Insulation Mechanics)	\$39.27	\$19.06	\$58.42
Boilermakers	\$17.62	\$6.96	\$24.58
Bricklayers	\$35.20	\$13.14	\$48.34
Carpenters/Resilient & Soft Floor Layers	\$31.40	\$14.02	\$45.42
- Millwright	\$34.90	\$17.16	\$52.06
- Piledriver	\$34.62	\$16.51	\$51.13
Cement Mason/Plasterers	\$28.45	\$11.47	\$39.32
Electricians	\$43.27	\$19.21	\$62.48
Elevator Construction Mechanic	\$51.75	\$41.74	\$93.49
Firestop Mechanic	\$29.56	\$8.41	\$37.96
Glaziers	\$32.53	\$22.72	\$55.25
Ironworkers			
- Ornamental	\$32.09	\$24.99	\$57.08
- Structural	\$32.09	\$24.99	\$57.08
- Reinforcing Rodmen	\$32.09	\$24.99	\$57.08
- Fence Erectors	\$28.70	\$20.66	\$49.36

**APPROVED BY THE BOARD OF ESTIMATES**

*M. Amato*

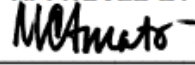
3/15/2023

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Clerk to the Board of Estimates

**FISCAL YEAR 2023 PREVAILING WAGE RATES**

<b>JOURNEYMEN</b>	<b>HOURLY RATE</b>	<b>FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>Laborers</b>			
- <b>General Laborers:</b> Flaggers, Tool and Material Handlers (Except Tenders), Clean-Up, Janitors, Truck Checkers, Dumpmen, Spotter, Landscape Laborer, Mulcher, Watchmen (Including Fire Watchmen)	<b>\$22.66</b>	<b>\$6.09</b>	<b>\$28.75</b>
- <b>Semi-Skilled Laborers:</b> Potmen, Power or Air Tool Operators, Pipelayers, Drillers Concrete Laborers, Signalmen, Small Machine Operators, Laser Beam Operators, Scaffold Builders, Caisson Laborer, Jack Hammer Operator (80 lbs. and over), Hazmat Handler	<b>\$24.29</b>	<b>\$9.05</b>	<b>\$33.34</b>
<b>Painters</b>			
- Brush and Trim	<b>\$26.61</b>	<b>\$11.56</b>	<b>\$38.17</b>
- Spackling, Taping, Wall Covering	<b>\$26.61</b>	<b>\$11.56</b>	<b>\$28.17</b>
- Spray, Structural Steel, Steam Cleaning, Sandblasting			
<b>Plumbers/Steamfitters/Pipefitter</b>	<b>\$42.62</b>	<b>\$23.19</b>	<b>\$65.81</b>
<b>Roofers</b>			
- Slate and Tile	<b>\$32.26</b>	<b>\$14.71</b>	<b>\$46.97</b>
- Wood Block	<b>\$32.26</b>	<b>\$14.71</b>	<b>\$46.97</b>
- Composition - Waterproof	<b>\$32.26</b>	<b>\$14.71</b>	<b>\$46.97</b>

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3/15/2023

Clerk to the Board of Estimate

FISCAL YEAR 2023 PREVAILING WAGE RATES

JOURNEYMEN	HOURLY RATE	FRINGE BENEFITS	TOTAL
Sheet Metal Worker (Inc. Air Balance, Metal Roofing)	\$44.37	\$22.75	\$67.12
Sprinkler Fitter	\$38.67	\$24.91	\$63.58
Stonemason	\$42.06	\$19.91	\$61.97
Tile, Terrazzo, Marble Workers	\$32.31	\$12.75	\$45.06
Tile, Terrazzo, Marble Finisher	\$26.80	\$11.67	\$38.47
<b><u>POWER EQUIPMENT OPERATORS</u></b>			
<b><u>GROUP I:</u></b> Certified Crane Operators (CCO)	\$38.70	\$16.40	\$55.10
<b><u>GROUP II:</u></b> Backfiller, backhoe, batching plants, boat captain, cableway, loader hoe, (with a front end bucket over 1 ¼ yds.), concrete mixing plant, concrete paver, derrick boat, double concrete pump, dragline, Eimco type overhead loader, elevating grader, scraper or pan type excavator (25 yds. and over), front end loader (1 ¾ yds. and over), gradall, grader, hoist (2 active drums or more), multiple conveyor, pile driving machine, power shovel, repair mechanic, shield, standard gauge locomotive, trenching machine, tunnel mucking machine, twin engine scraper, welder, whirley rig.	\$32.13	\$13.67	\$45.80

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3/15/2023

Clerk to the Board of Estimates

FISCAL YEAR 2023 PREVAILING WAGE RATES

JOURNEYMEN	HOURLY RATE	FRINGE BENEFITS	TOTAL
<b><u>POWER EQUIPMENT OPERATORS</u></b>			
<p><b><u>GROUP III:</u></b> Asphalt spreader bulldozer, bull float, loader, hoe, (with a front end bucket 1 ¼ yds. and under), concrete mixer (with skip), concrete pump, concrete spreader, scraper or pan type excavator (under 25 yds.) finishing machine, front end tractor loader (under 1 ¾ yds.), hi-lift fork lift, longitudinal float, narrow gauge locomotive, one drum hoist, power roller, screeding machine, snooper/vac truck, stone crusher, stone spreader, sub-grader tractor with attachments (2 or more provided both attachments are being used).</p>	<b>\$31.95</b>	<b>\$13.56</b>	<b>\$45.51</b>
<p><b><u>GROUP IV:</u></b> Crawler or rubber tire tractor no attachments), compressors, elevator operator, firemen, fuel truck, grease truck, grout pump, light plant, mighty midget with compressor, single conveyor, space heaters, welding machines, welldriller, wellpoint system, deck hands, oilers (all types).</p>	<b>\$25.65</b>	<b>\$13.17</b>	<b>\$37.82</b>

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3/15/2023

Clerk to the Board of Estimates

**FISCAL YEAR 2023 PREVAILING WAGE RATES**

<b>JOURNEYMEN</b>	<b>HOURLY RATE</b>	<b>FRINGE BENEFITS</b>	<b>TOTAL</b>
Truck Driver			
- Goose Neck Drop Frame	<b>\$15.82</b>	<b>\$3.75</b>	<b>\$19.57</b>
- Trailer Driver	<b>\$15.50</b>	<b>\$3.75</b>	<b>\$19.25</b>
- Flat Bed and Pickup	<b>\$26.00</b>	<b>\$0</b>	<b>\$26.00</b>
- Dump Truck Driver (Site Only) Welder Receives Rate For Craft Involved	<b>\$22.00</b>	<b>\$11.21</b>	<b>\$33.21</b>

**APPROVED BY BOARD OF ESTIMATES**

*M. Amato*

**3/15/2023**

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**Clerk to the Board of Estimates**

FISCAL YEAR 2023 PREVAILING WAGE RATES

APPRENTICESHIP RATES
PERCENTAGE OF JOURNEYMAN'S HOURLY RATE
PLUS, FULL JOURNEYMAN'S FRINGE BENEFITS (UNLESS PARTIAL FRINGE BENEFITS
ARE APPROVED BY THE MARYLAND APPRENTICESHIP AND TRAINING COUNCIL)

Table with 2 columns: ASBESTOS WORKERS, and rows for First year (45), Second year (55), Third year (65), Fourth year (75), Fifth year (85).

Table with 2 columns: BOILERMAKERS, and rows for First 6 months (50), Second 6 months (60), Third 6 months (65), Fourth 6 months (70), Fifth 6 months (75), Sixth 6 months (80), Seventh 6 months (85), Ninth 6 months (90).

Table with 2 columns: BRICKLAYERS & STONE MASONS, and rows for First 6 months (50), Second 6 months (55), Third 6 months (60), Fourth 6 months (70), Fifth 6 months (80), Sixth 6 months (90).

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3/15/2023

Clerk to the Board of Estimates



FISCAL YEAR 2023 PREVAILING WAGE RATES

APPRENTICESHIP RATES
PERCENTAGE OF JOURNEYMAN'S HOURLY RATE
PLUS, FULL JOURNEYMAN'S FRINGE BENEFITS (UNLESS PARTIAL FRINGE BENEFITS
ARE APPROVED BY THE MARYLAND APPRENTICESHIP AND TRAINING COUNCIL)

Table with 2 columns: Category, Rate. Header: CARPENTERS. Rows: First year (60), Second year (70), Third year (80), Fourth year (90).

Table with 2 columns: Category, Rate. Header: CEMENT FINISHERS. Rows: First 500 hours (50), Second 500 hours (55), Third 500 hours (60), Fourth 500 hours (65), Fifth 500 hours (70), Sixth 500 hours (75), Seventh 500 hours (80), Eighth 500 hours (90).

Table with 2 columns: Category, Rate. Header: ELECTRICIANS. Rows: First 6 months (40), Second 6 months (40), Second year (55), Third year (65), Fourth year (70), Fifth year (75).

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Handwritten signature: M. Amato

3/15/2023

Clerk to the Board of Estimate

FISCAL YEAR 2023 PREVAILING WAGE RATES

APPRENTICESHIP RATES
PERCENTAGE OF JOURNEYMAN'S HOURLY RATE
PLUS FULL JOURNEYMAN'S FRINGE BENEFITS (UNLESS PARTIAL FRINGE BENEFITS
ARE APPROVED BY THE MARYLAND APPRENTICESHIP AND TRAINING COUNCIL)

Table with 2 columns: Category (IRONWORKERS) and Rate. Rows include First 1,000 hours (60) through Eighth 1,000 hours (95).

Table with 2 columns: Category (MILLWRIGHTS) and Rate. Rows include First year (60) through Fourth year (90).

Table with 2 columns: Category (PAINTERS) and Rate. Rows include First 1,000 hours (55), Second 1,000 hours (70), and Third 1,000 hours (85).

APPROVED BY THE BOARD OF ESTIMATES

Signature: M. Amato, Date: 3/15/2023, Title: Clerk to the Board of Estimate

FISCAL YEAR 2023 PREVAILING WAGE RATES

APPRENTICESHIP RATES
PERCENTAGE OF JOURNEYMAN'S HOURLY RATE
PLUS FULL JOURNEYMAN'S FRINGE BENEFITS (UNLESS PARTIAL FRINGE BENEFITS
ARE APPROVED BY THE MARYLAND APPRENTICESHIP AND TRAINING COUNCIL)

Table with 2 columns: Category (e.g., First 1,000 hours) and Rate (e.g., 50). Header: PLASTERERS

Table with 2 columns: Category (e.g., First year) and Rate (e.g., 40). Header: PLUMBERS/STEAMFITTERS/ PIPEFITTERS

Table with 2 columns: Category (e.g., First period) and Rate (e.g., 55). Header: POWER EQUIPMENT OPERATORS

APPROVED BY THE BOARD OF ESTIMATES

Signature: M. Amato Date: 3/15/2023

Clerk to the Board of Estimate

FISCAL YEAR 2023 PREVAILING WAGE RATES

APPRENTICESHIP RATES
PERCENTAGE OF JOURNEYMAN'S HOURLY RATE
PLUS FULL JOURNEYMAN'S FRINGE BENEFITS (UNLESS PARTIAL FRINGE BENEFITS
ARE APPROVED BY THE MARYLAND APPRENTICESHIP AND TRAINING COUNCIL)

Table with 2 columns: Category, Rate. Header: ROOFERS. Rows: First year (55), Second year (65), Third year (75).

Table with 2 columns: Category, Rate. Header: SHEET METAL WORKERS. Rows: First 6 months (40) to Tenth 6 months (85).

Table with 2 columns: Category, Rate. Header: SHEET METAL WORKERS. Rows: First 6 months (45) to Tenth 6 months (90).

APPROVED BY THE BOARD OF ESTIMATES

Signature: M. Amato, Date: 3/15/2023, Title: Clerk to the Board of Estimate

FISCAL YEAR 2023 PREVAILING WAGE RATES

**APPRENTICESHIP RATES  
PERCENTAGE OF JOURNEYMAN'S HOURLY RATE  
PLUS FULL JOURNEYMAN'S FRINGE BENEFITS (UNLESS PARTIAL FRINGE BENEFITS  
ARE APPROVED BY THE MARYLAND APPRENTICESHIP AND TRAINING COUNCIL)**

<b><u>LABORERS</u></b>	
First year	70
Second year	90

**LABORER'S WORK**

Laborers may not assist mechanics in the performance of mechanic's work, nor use tools peculiar to established trades. Their work should be confined to the following manual tasks:

1. Digging and filling holes and trenches.
2. Loading, unloading and stockpiling materials.
3. Cleaning and sweeping.
4. Driving stakes.
5. Placing concrete and asphalt (not finishing)
6. Stripping forms.
7. Ripping out material which is to be discarded, including asbestos.
8. Clearing and grubbing.

The above definition is to preclude inadvertent misclassification of laborers.

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3/15/20223

Clerk to the Board of Estimates

**ART. 5, § 25-9 BALTIMORE CITY CODE**

**§ 25-9. Required records - In general.**

(a) Contractors to maintain.

The contractor and each of his subcontractors shall maintain payrolls and basic records relating thereto during the course of the work and shall preserve them for a period of 3 years thereafter for all laborers, mechanics, and apprentices working directly upon the site of the work.

(b) Contents.

These records shall contain:

- (1) the name and address of each such employee;
- (2) his classification in accordance with the classifications fixed in the contract;
- (3) a designation of laborer, mechanic, or apprentice;
- (4) the number of hours worked each day;
- (5) the hourly wage rate;
- (6) the gross wages, deductions made, and actual wages paid;
- (7) a copy of the Social Security returns and evidence of payment thereof;
- (8) a record of fringe benefit payments including contributions to approved plans, funds, or programs and/or additional cash payments; and
- (9) such other data as may be required by the Board of Estimates from time to time.

(City Code, 1950, art. 1, §14(e); 1966, art. 1, §16(f)(1st sen.); 1976/83, art. 1, §19(d)(1).)  
(Ord. 45-225; Ord. 59-1960; Ord. 67-969; Ord. 73-348; Ord. 04-672.)

**§ 25-10. Required records - Project payroll reports.**

(a) Contractor to submit.

The contractor shall submit 2 complete copies of his weekly project payrolls and the weekly project payrolls of each of his subcontractors, consecutively numbered, not later than 14 days from the end of their respective payroll periods, 1 copy to be sent to the contracting agency, the other to the Wage Commission where the same will be available for public inspection during regular business hours. 02/12/16 -52- FINANCE AND PROCUREMENT ART. 5, § 25-10

(b) Contents.

The weekly project payrolls shall contain:

- (1) the name of the prime contractor and the subcontractor, if any;
- (2) a designation of the project and location;
- (3) the name, Social Security Number, and occupation of each employee;
- (4) his classification in accordance with the classifications fixed in the contract;
- (5) a designation of laborer, mechanic, or apprentice;
- (6) the number of hours worked daily by said employee at straight time and at overtime and his hourly wage rate for each;
- (7) the gross wages paid to said employee per week; and
- (8) such other data as may be required by the Board of Estimates from time to time.

(c) Prime contractor responsible for subcontractors.

The prime contractor shall be responsible for the submission of all subcontractors' payrolls covering work performed directly at the work site.

(d) Signed statement of compliance.

Each copy of the payroll shall be accompanied by a statement signed by the contractor or the subcontractor, as the case may be, indicating:

- (1) that the payroll is correct;
- (2) that the wage rates contained therein are not less than those established by the Board of Estimates as set forth in the contract;
- (3) that the classification set forth for each laborer, mechanic, or apprentice conforms with the work he performed; and
- (4) that the contractor and the subcontractor, as the case may be, has complied with the provisions of this subtitle.

(City Code, 1966, art. 1, §16(f)(2nd sen.) ; 1976/83, art. 1, §19(d)(2).) (Ord. 59-1960; Ord. 67-969; Ord. 73-348.)

U.S. Department of Labor  
Wage and Hour Division

PAYROLL

(For Contractor's Optional Use; See Instructions at www.dol.gov/whd/forms/wh347instr.htm)

Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number.



Rev. Dec. 2008

OMB No.: 1235-0008  
Expires: 02/28/2018

NAME OF CONTRACTOR <input type="checkbox"/> OR SUBCONTRACTOR <input type="checkbox"/>		ADDRESS			PROJECT OR CONTRACT NO.	
PAYROLL NO.	FOR WEEK ENDING	PROJECT AND LOCATION			PROJECT OR CONTRACT NO.	

(1) NAME AND INDIVIDUAL IDENTIFYING NUMBER (e.g., LAST FOUR DIGITS OF SOCIAL SECURITY NUMBER) OF WORKER	(2) NO. OF WITHHOLDING EXEMPTIONS	(3) WORK CLASSIFICATION	(4) DAY AND DATE							(5) TOTAL HOURS	(6) RATE OF PAY	(7) GROSS AMOUNT EARNED	(8) DEDUCTIONS					(9) NET WAGES PAID FOR WEEK	
			O	R	E	S	A	T	U				N	FICA	WITH- HOLDING TAX	OTHER	TOTAL DEDUCTIONS		
																			HOURS WORKED EACH DAY

While completion of Form WH-347 is optional, it is mandatory for covered contractors and subcontractors performing work on Federally financed or assisted construction contracts to respond to the information collection contained in 29 C.F.R. §§ 3.3, 5.5(a). The Copeland Act (40 U.S.C. § 3145) contractors and subcontractors performing work on Federally financed or assisted construction contracts to "furnish weekly a statement with respect to the wages paid each employee during the preceding week." U.S. Department of Labor (DOL) regulations at 29 C.F.R. § 5.5(a)(3)(i) require contractors to submit weekly a copy of all payrolls to the Federal agency contracting for or financing the construction project, accompanied by a signed "Statement of Compliance" indicating that the payrolls are correct and complete and that each laborer or mechanic has been paid not less than the proper Davis-Bacon prevailing wage rate for the work performed. DOL and federal contracting agencies receiving this information review the information to determine that employees have received legally required wages and fringe benefits.

Public Burden Statement

We estimate that it will take an average of 55 minutes to complete this collection, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection, including suggestions for reducing this burden, send them to the Administrator, Wage and Hour Division, U.S. Department of Labor, Room S3502, 200 Constitution Avenue, N.W. Washington, D.C. 20210

(over)



**SUBTITLE 26A LABOR TRAFFICKING NOTICE REQUIREMENTS**

This requirement went into effect on January 24, 2022.

Labor Trafficking - Notice Requirements For the purpose of requiring certain contractors with the City of Baltimore to place a notice regarding the human-trafficking prevention hotline in certain locations; providing that certain contractors may obtain the required human-trafficking notices from the United States Department of Homeland Security's Blue Campaign website; providing for certain penalties; and generally relating to labor trafficking notice requirements for city contractors.

Subtitle 26A is included hereunder;

**SUBTITLE 26A**  
**LABOR TRAFFICKING NOTICE REQUIREMENTS**

**§ 26A-1. Applicability.**

The requirements of this subtitle apply to:

- (1) construction contracts, including:
  - (i) contracts in excess of \$5,000 made by the Board of Estimates, or on its behalf, with any person, firm, or corporation for the construction, reconstruction, erection, conversion, installation, alteration, repair, maintenance, renovation, razing, demolition, moving, removing, grading, paving, repaving, curbing, filling, excavation, or any other operation or work to be done or performed in, on, upon, or in connection with any building, bridge, viaduct, tunnel, tower, stack, or other structure, airport, land, highway, pier, wharf, sewer, drain, main, conduit, machinery, or mechanical, electrical, or other equipment;
  - (ii) each and every project approved by the Mayor and City Council on or after January 1, 2021, receiving funds from tax increment financing in excess of \$10,000,000 in the aggregate to the extent those funds are used in whole or in part for the construction, reconstruction, erection, conversion, installation, alteration, repair, maintenance, renovation, razing, demolition, moving, removing, grading, paving, repaving, curbing, filling, excavation, or any other operation or work to be done or performed in, on, upon, or in connection with any building, bridge, viaduct, tunnel, tower, stack, or other structure, airport, land, highway, pier, wharf, sewer, drain, main, conduit, machinery, or mechanical, electrical, or other equipment; and
- (2) service contracts, as defined in § 26-1(e) of this article.

*(Ord. 22-10.)*

**§ 26A-2. Requirements.**

- (1) The prime contractor must post a sign that states the following:

“LABOR TRAFFICKING 101

Labor trafficking includes recruiting, harboring, transporting, providing, or obtaining people for forced or coerced labor.

The coercion could be threats directed at the victim or someone else. Labor trafficking is often linked with exploitation of a worker. To learn more, visit [www.mdhumantrafficking.org](http://www.mdhumantrafficking.org).

If a worker ...

- (1) lacks possession of their own identification and travel documents,

- (2) lives at their place of work and in isolated conditions,
- (3) experiences verbal or physical abuse from their employer or supervisor,
- (4) is made to work in unsafe conditions, prevented from taking adequate breaks, or forced to meet daily quotas

... they may be a victim of labor trafficking.

FOR IMMEDIATE ASSISTANCE  
CALL THE NATIONAL HUMAN TRAFFICKING HOTLINE

**+1 (888) 373-7888 OR TEXT “BeFREE” TO 233733”**

(2) The sign must:

- (i) be at least 16 by 20 inches in size;
- (ii) contain the text required under subsection (1) of this section in English, Spanish, and any other languages required by the federal Voting Rights Act for voting materials in Baltimore City; and
- (iii) draw attention to the phone and text numbers of the National Human Trafficking Resource Center Hotline by showing the phone and text numbers in bold type.

(3) The prime contractor may meet the requirements of this section by creating their own signs using a font size of not less than 30 points for the hotline and text numbers and a font size of not less than 12 points for the body text, or using copies of the signs created and made available online by the United States Department of Homeland Security’s Blue Campaign website.

*(Ord. 22-10.)*

**§ 26A-3. Sign location.**

A copy of the labor trafficking sign required by § 26A-2 {“Requirements”} of this subtitle shall be posted by the contractor at the site of the work in a clear and conspicuous place where it can be easily seen and read by the workers. Example areas include break rooms, locker rooms, cafeterias, and other similar locations.

*(Ord. 22-10.)*

**§ 26A-4. Penalties for failure to post signage.**

(a) *In general.*

(1) *Prerequisite to citation.*

A citation under this section may only be issued after the issuance of a written warning and a failure to correct the violation within 30 days of the date of the warning.

(2) *Authorization to issue.*

In addition to any other civil or criminal remedy or enforcement procedure, this subtitle may be enforced by issuance of an environmental citation under City Code Article 1, Subtitle 40.

(b) *Process not exclusive.*

The issuance of a citation to enforce this subtitle does not preclude pursuing any other civil or criminal remedy or enforcement action authorized by law.

(c) *Each day a separate offense.*

Each day a violation continues is a separate offense.  
(Ord. 22-10.)

**SC-2 DEFINITIONS:**

Supplement Standard Specification Section 00 23 00.01 as follows;

1. Design Project Manager - the representative of Department of General Services or the duly authorized representative.
2. Project Engineer – the representative of the Department of General Services, and whose authority is commensurate with that of the Engineer
3. Building Manager - the City's on-site manager of the building(s) involved in this contract.

**SC-3 EQUAL OPPORTUNITY COMPLIANCE****Article 5 §29-15 Mandatory nondiscrimination contract clause:**

Contractor shall not discriminate on the basis of race, gender, religion, national origin, ethnicity, sexual orientation, gender identity or expression, age, or disability in the solicitation, selection, hiring, or treatment of subcontractors, vendors, suppliers, or commercial customers. Contractor shall provide equal opportunity for subcontractors to participate in all of its public sector and private sector subcontracting opportunities, provided that nothing contained in this clause shall prohibit or limit otherwise lawful efforts to remedy the effects of marketplace discrimination that has occurred or is occurring in the marketplace, such as those specified in Article 5, Subtitle 28 of the Baltimore City Code, as amended from time to time. Contractor understands and agrees that violation of this clause is a material breach of the contract and may result in contract termination, debarment, or other sanctions. This clause is not enforceable by or for the benefit of, and creates no obligation to, any third party.

**Article 5 §29-16 Contractor bid requirements:**

As part of its bid or proposal, Bidder shall provide to the City a list of all instances within the past 5 years where there has been a final adjudicated determination in a legal or administrative proceeding in the State of Maryland that the bidder has discriminated against its subcontractors, suppliers, vendors, or commercial customers on the basis of race, gender religion, national origin, ethnicity, sexual orientation, gender identity or expression, age or disability, and a description of any resulting sanction entered and remedial action taken.

**Bidders may submit this document in a separate sealed envelope with the bid documents.**

**Article 5 §29-17 Contract disclosure requirement:**

Upon the City's request, and only after filing a complaint against Contractor pursuant to Article 5, Subtitle 29, of the Baltimore City Code, as amended from time to time, Contractor agrees to provide the City within 60 calendar days, a truthful and complete list of the names of all subcontractors, vendors, and suppliers that Contractor has used in the past 4 years on any of its contracts that were undertaken within the Baltimore City Market Area as defined in Article 5, §28-1(d) of the Baltimore City Code, as amended from time to time, including the total dollar amount paid by Contractor for each subcontract or supply contract. Contractor agrees to fully cooperate in any investigation conducted by the City pursuant to the City's Commercial Non - Discrimination Policy, as contained in Article 5, Subtitle 29, of the Baltimore City Code as amended from time to time. Contractor understands and agrees that violation of this clause is a

material breach of the contract and may result in contract termination, debarment, and other sanctions. Contractor shall not discriminate on the basis of race, gender, religion, national origin, ethnicity, sexual orientation, gender identity or expression, age, or disability in the solicitation, selection, hiring, or treatment of subcontractors, vendors, suppliers, or commercial customers. Contractor shall provide equal opportunity for subcontractors to participate in all of its public sector and private sector subcontracting opportunities, provided that nothing contained in this clause shall prohibit or limit otherwise lawful efforts to remedy the effects of marketplace discrimination that has occurred or is occurring in the marketplace, such as those specified in Article 5, Subtitle 28 of the Baltimore City Code, as amended from time to time. Contractor understands and agrees that violation of this clause is a material breach of the contract and may result in contract termination, debarment, or other sanctions. This clause is not enforceable by or for the benefit of and creates no obligation to, any third party.

**SC-4 PAYMENTS TO THE CITY**

Any payments to the Mayor and City Council or any of its Departments, Agencies, Board or Commissions due under the terms of this Agreement or arising incident thereto, shall be made to the Director of Finance and be mailed or delivered to:

Director of Finance  
Abel Wolman Municipal Building  
200 Holliday St., Room One  
Baltimore, Maryland 21202

**SC-5 CONTRACTOR TO EXECUTE REQUIRED DOCUMENTS AND START WORK PROMPTLY**

DELETE Standard Specification Section 00 51 00.07 CONTRACTOR TO EXECUTE REQUIRED DOCUMENTS AND START WORK PROMPTLY and

REPLACE it with the following:

The successful Bidder shall promptly execute and submit a formal Contract, all subcontract agreements in accordance with Article 5 Subtitle 28 of the Baltimore City Code, any and all contract documents specified in an Award Letter, the required Bonds, and all insurance policies or certified copies thereof issued in favor of the Mayor and City Council of Baltimore, as provided in the Special Provisions, all of which shall be subject to the approval of the City Solicitor as to form, terms and conditions. Failure to comply with these requirements within thirty (30) calendar days after the Award shall be just cause for the annulment of the Award. It is understood and agreed that in the event of annulment of the Award, the Board of Estimates may require the Bidder to forfeit, to the use of the City, the amount of the certified check deposited with its Proposal, not as penalty, but as liquidated damages. As an alternative remedy, the City may elect to start the running of contract time (without allowing the Contractor to start work) or to pursue any other remedy allowed to the City under the law or equity.

**SC-6 NOISY WORK**

SUPPLEMENT Standard Specification Section 01 14 23 as follows:

Work creating excessive noise (jack hammering, demolition, etc.) in or near occupied areas is prohibited after 7:00 PM or before 9:00 AM, and must be coordinated with the Building Manager

and Project Engineer, and performed at times which do not unduly disturb the building's occupants or surrounding occupied areas; and at no additional cost to the City.

### **SC-7 MAINTENANCE OF TRAFFIC**

SUPPLEMENT Standard Specification Section 01 55 26 with the following:

If violations to Maintenance of Traffic restrictions are not remedied/corrected within twelve (12) hours from the documented notice being given to the Contractor, an appropriate deduction will be made from the Contractor's next Progress Estimate. The deduction will be equal to the daily pro rata share of the Schedule of Values price bid for Maintenance of Traffic, which is determined by the lump sum price bid for Maintenance of Traffic divided by the number of days in the contract, or \$200.00 per day, whichever is more, for each day or portion thereof that the deficiencies exist and will continue until the deficiencies are satisfactorily corrected and accepted by the Project Engineer. The amount of money deducted will be a permanent deduction from the Contract and will not be recoverable. Upon satisfactory correction of the deficiencies, payment of the Maintenance of Traffic Schedule of Values item will resume.

### **SC-8 OVERTIME REIMBURSEMENT**

DELETE Paragraph "C." of the Standard Specification Section 00 73 18 CONTRACTOR'S EXPENSE and

REPLACE it with the following:

- C. The Contractor shall reimburse the City for inspection and all other services required when and if, the Contractor chooses to work in excess of the normal eight (8) hour workday, forty (40) hour work week, weekends, or on a City holiday. The amount due the City shall be deducted from the Contractor's monthly pay estimate at the hourly rate of one hundred fifty dollars (\$150.00). The rate specified is per inspector and/or Building Manager on the project while the overtime work is ongoing. The Contractor should assume that, if one (1) to two (2) crews are working, at least one (1) inspector will be on site. If three (3) to five (5) crews are working, at least two (2) inspectors will be on site. If more than five (5) crews are working, at least three (3) inspectors will be on site. This overtime reimbursement shall not apply to overtime work done at the City's request due to no fault of Contractor.



### **SC-9 PROJECT IDENTIFICATION:**

SUPPLEMENT Standard Specification Section 01 58 00 PROJECT IDENTIFICATION as follows:

The Contractor shall furnish, install, and maintain project signs using the design shown below and at a location as directed by the Engineer.


The Contractor shall update the completion date on the project signs quarterly until substantial completion.



# Work In Progress

**Mayor Brandon M. Scott**



*Better Schools. Safer Streets. Stronger Neighborhoods.*

**DEPARTMENT OF GENERAL SERVICES**  
**PROJECT NAME (ALL CAPS)**  
 informational phone #  
 completion date

**SC-10 CONTRACTOR PHOTO IDENTIFICATION**

The Contractor shall provide a photograph identification badge for each member of his workforce. Each individual shall display the identification badge before entering the project site and as requested during their presence on the project site. The identification badge shall include the individual’s photograph, name, organization, and the contract number. Contractor’s workforce shall include, but is not limited to, subcontractors, suppliers, manufacturers’ representatives, testing agencies, etc. The Contractor shall furnish a photocopy of an individual’s identification badge to the Engineer prior to the individual’s beginning work at the site. In those instances where the duration of an individual’s on-site visit is to be very limited, the Contractor will issue a temporary, non-photo, identification card. The individual may not enter the site until the temporary, non-photo, identification card is issued.

**SC-11 CONTRACTOR WORK HOURS**

SUPPLEMENT Standard Specifications Section 01 14 18 GENERAL WORK HOURS as follows:

Except otherwise Specified in the Special Provisions or other Contract Documents, or directed by the Engineer, the regular eight (8) hour working day shall begin no earlier than 7:00 A.M. and end no later than 5:00 P.M. Any other working hours must be coordinated with the Engineer and the Building Manager.



**SC-12 SUNDAY AND HOLIDAY WORK**

DELETE from Paragraph “A.” of Section 01 14 21 SUNDAY AND HOLIDAY WORK of the Standard Specification the word “SUNDAY”, and

SUBSTITUTE the words “SATURDAY AND SUNDAY”.

ADD to Paragraph “B.” of Section 01 14 21 SUNDAY AND HOLIDAY WORK of the Standard Specifications the following holidays:

Martin Luther King, Jr. Birthday, Presidents Day, Good Friday, Columbus Day, Veterans Day, and any other holidays or City non-work days as indicated by the Baltimore City Labor Commissioner at <http://labor-commissioner.baltimorecity.gov/official-city-holidays>.

**SC-13 WARRANTIES**

DELETE Paragraph A of Standard Specification Section 01 78 36 WARRANTIES

REPLACE it with:

“The Contractor warrants and guarantees to the City all the improvements made for a period of two (2) years after the date of acceptance or occupancy by the City”.

**SC-14 PROGRESS MEETING DUTIES**

The Contractor shall employ and provide a clerk, satisfactory to the Engineer, who shall be available at all times to record minutes of all meetings and send sufficient copies of minutes of the meetings to all interested parties or as directed by the Engineer.

**SC-15 ENGINEER’S OFFICE**

An ENGINEER’S OFFICE will NOT be required as per Section 13 22 00 of the City of Baltimore, Department of Public Works – Specifications – Materials, Highways, Bridges, Utilities, and Incidental Structures 2006.

**SC-16 BUILDER’S RISK**

Supplement Standard Specification Section 00 73 16.01 as follows:

Contractor shall have and maintain during the life of the Contract such Property Insurance upon the Contractor’s entire work at the site up to the complete value thereof. This insurance shall protect the City, as its interest may appear in the work, and shall insure against the perils of fire and extended coverage, theft vandalism and malicious mischief. All Risk Insurance may not contain exclusions relating to flood, earthquake, mysterious disappearance, hail and terrorism.

If the Property Insurance contains a co-insurance provision, the Contractor shall be responsible for the amount of the insurance satisfying the co-insurance amount so as to make the co-insurance clause inoperable. If not covered otherwise, the Contractor shall have and maintain

during the life of the Contract similar Property Insurance on portions of the work stored off the site or in transit when such portions of the work are to be included in any payment.

**SC-17 MATERIALS:**

Supplement Standard Specification Section 01 45 14 as follows:

Materials and equipment shall be new, and shall be those of the manufacturers named in the specifications or of a quality, capacity, etc., approved as equal by the Project Engineer.

**SC-18 REUSE AND RECYCLING OF SELECTED MATERIALS**

The contractor shall include the processing of certain materials to be recycled and/or reused as noted in the Contract Documents.

It is the intention of the City to recycle as much of the materials resulting from New Construction, Restoration, Stabilization and Demolition projects as feasible. The Contractor, therefore, shall be required to source separate certain materials that have recycling potential. These items include but are not limited to: structural steel, concrete, bricks (excluding refractory type), lumber, plaster, plasterboard, insulation cement, roofing materials, floor and wall tiles, pipes, wires and other items physically attached to the structure, including appliances.

**MATERIALS MANAGEMENT REPORTING:** At each Project Progress Meeting the contractor shall provide spreadsheet (one electronic and one hardcopy) inventory of the following:

- The material type,
- The number of truckloads and/or containers,
- Their overall individual vehicle daily volumes hauled, and
- Individual vehicles “net” payload weights, of all materials intended to be reused, recycled and /or disposed.

<b>DATE</b>						
	<b>Material Type</b>	<b>Unit of Measure</b>	<b># of Units</b>	<b>Total Weight of Day's Material</b>	<b>Total Volume of Day's Material</b>	<b>End Use: Reused / Recycled / Disposed</b>
<b>1</b>						
<b>2</b>						
<b>3</b>						
<b>4</b>						
<b>5</b>						
<b>6</b>						

<b>7</b>						
<b>8</b>						
<b>9</b>						

**SC-19 TERMINATION FOR CONVENIENCE OF THE CITY**

- A. Performance of work under this Contract may be terminated by the City in accordance with this clause, in whole or in part, whenever the City shall determine that such termination is in the best interest of the City. Any such termination shall be effected by delivery to the Contractor of a written Notice of Termination specifying the extent to which performance of work is terminated and the effective date of termination.
  
- B. After receipt of a Notice of Termination, and except as otherwise directed by the Engineer, the Contractor shall:
  - 1. Stop work under the Contract on the date and to the extent specified in the Notice of Termination;
  - 2. Place no further orders or subcontracts for materials, services or facilities, except as may be necessary for completion of the portion of the work under the Contract as is not terminated;
  - 3. Terminate all orders and subcontracts to the extent that they relate to the work terminated by the Notice of Termination;
  - 4. Assign to the City, in the manner, at times, and to the extent directed by the Engineer, all of the right, title, and interest of the Contractor under the orders and subcontracts so terminated, in which case the City shall have the right, in its discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontracts;
  - 5. Settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts, with the approval or ratification of the Engineer, to the extent he may require, which approval or ratification shall be final for all the purposes of this clause;
  - 6. Transfer title and deliver to the City, in the manner, at the times, and to the extent, if any, directed by the Engineer, fabricated or unfabricated parts, work in process, completed work, supplies, and other material produced as a part of, or acquired in connection with the performance of the work terminated by the Notice of Termination, and/or completed or partially completed plans, drawings, information, and other property which, if the Contract had been completed, would have been required to be furnished to the City;

7. Use its best efforts to sell, in the manner, at the times, to the extent, and at the price or prices directed or authorized by the Engineer, any property of the types referred to in (6) above. The Contractor will not be required to extend credit to any purchaser, and may acquire any such property under the conditions prescribed by and at a price or prices approved by the Engineer; provided further that the proceeds of any such transfer or disposition shall be applied in reduction of any payments to be made by the City to the Contractor under this contract or shall otherwise be credited to the price or cost of the work covered by this contract or paid in such other manner as the Engineer may direct;
  8. Complete performance of any part of the work that has not been terminated by the Notice of Termination; and
  9. Take any action that may be necessary, or as the Engineer may direct, for the protection and preservation of the property related to this Contract which is in the possession of the Contractor and in which the City has or may acquire an interest.
  10. Submit to the Engineer a list, certified as to quantity and quality, of any or all items of termination inventory not previously disposed of, exclusive of those items for which the disposition has been directed or authorized by the Engineer. The Contractor may request the City to remove such items or enter into a storage agreement covering them. Not later than fifteen (15) days thereafter, the City shall accept title to these items and remove them or enter into a storage agreement covering the same; provided, that the list submitted shall be subject to verification by the Engineer upon removal of the items, or if the items are stored, within forty-five (45) days from the date of submission of the list. Any correction to this list shall be made prior to final settlement.
- C. After receipt of a Notice of Termination, the Contractor shall submit to the Engineer its termination claim, in the form and with certification prescribed by the Engineer. This claim shall be submitted promptly but in no event later than six (6) months from the effective date of termination, unless one or more extensions in writing are granted by the Engineer upon request of the Contractor made in writing within the six-month period or authorized extension thereof. However, if the Engineer determines that the facts justify such action, he may receive and act upon any such termination claim at any time after the six-month period or any extension thereof. Upon failure of the Contractor to submit his termination claim within the time allowed, the Engineer may determine, on the basis of information available to him, the amount, if any, due to the Contractor by reason of the termination and shall thereupon pay to the Contractor the amount so determined.
- D. Subject to the provisions of paragraph (C), the Contractor and the Engineer may agree upon the whole or any part of the amount or amounts to be paid to the Contractor by reason of the total or partial termination of work pursuant to this clause, which amount or amounts

may include a reasonable allowance for profit on work done; provided, that such agreed amount or amounts, exclusive of settlement costs, shall not exceed the total contract price as reduced by the amount of payments otherwise made and as further reduced by the contract price of work not terminated. The Contract shall be amended accordingly, and the Contractor shall be paid the agreed amount. Nothing in paragraph (E) of this clause, prescribing the amount to be paid to the Contractor in the event of failure of the Contractor and the Engineer to agree upon the whole amount to be paid to the Contractor by reason of the termination of work pursuant to this clause, shall be deemed to limit, restrict, or otherwise determine or affect the amount or amounts that may be agreed upon to be paid to the Contractor pursuant to this paragraph.

- E. In the event of the failure of the Contractor and the Engineer to agree as provided in paragraph (D) upon the whole amount to be paid to the Contractor by reason of the termination of work pursuant to this clause, the Engineer shall pay to the Contractor the amounts determined by the Engineer as follows, but without duplication of any amounts agreed upon in accordance with paragraph (D):
1. With respect to all contract work performed before the effective date of the Notice of Termination, the total (without duplication of any items) of:
    - i. the cost of the work;
    - ii. the cost of settling and paying claims arising out of the termination of work under subcontracts or orders, as provided in paragraph (B)(5) above, exclusive of amounts paid or payable on account of supplies or materials delivered or services furnished by subcontractors or vendors before the effective date of the Notice of Termination, which amounts shall be included in the costs payable under (i) above; and
    - iii. a sum, as profit on (i) above, determined by the Engineer to be fair and reasonable; provided, however, that if it appears that the Contractor would have sustained a loss on the entire Contract had it been completed, no profit shall be included or allowed under this subdivision (iii) and an appropriate adjustment shall be made reducing the amount of the settlement to reflect the indicated rate of loss; and
  2. The reasonable cost of the preservation and protection of property, incurred pursuant to paragraph B(8) above, and any other reasonable cost incidental to termination of the work under this Contract, including expenses incidental to the determination of the amount due to the Contractor as the result of the termination of the work under the Contract.
  3. The total sum to be paid to the Contractor under (1) of this paragraph shall not exceed the total contract price as reduced by the amount of

payments otherwise made and as further reduced by the contract price of work not terminated. Except for normal spoilage, and except to the extent that the City shall have otherwise expressly assumed the risk of loss, there shall be excluded from the amounts payable to the Contractor as provided in (E)(1) above, the fair value, as determined by the Engineer, of property that is destroyed, lost, stolen, or damaged so as to become undeliverable to the City or to a buyer pursuant to paragraph B(7).

- F. Costs claimed, agreed to, shall be in accordance with all applicable City, State and local laws, regulations and ordinances.
  
- G. The Contractor shall have the right of appeal, under the clause of the Specifications entitled "Disputes," from any determination made by the Engineer unless the Contractor has failed to submit his claim within the time provided herein and has failed to request and receive a written extension of time in which to submit his claim. In any case where the Engineer has made a determination of the amount due to the Contractor, the City shall pay to the Contractor the following:
  - 1. if there is no right of appeal hereunder or if no timely appeal has been taken, the amount so determined by the Engineer, or
  - 2. if an appeal has been taken, the amount finally determined on such appeal.
  
- H. In arriving at the amount due the Contractor under this clause there shall be deducted
  - 1. all unliquidated advances or other payments made to the Contractor, applicable to the terminated portion of this contract,
  - 2. any claim that the City may have against the Contractor in connection with this contract, and
  - 3. the agreed price for, or the proceeds of sale of, any materials, supplies, or other things acquired by the Contractor or sold, pursuant to the provisions of this clause, and not otherwise recovered by or credited to the City.
  
- I. If the termination hereunder is partial, the Contractor may file with the Engineer a claim for an equitable adjustment of the price or prices specified in the contract relating to the continued portion of the contract (the portion not terminated by the Notice of Termination), and such equitable adjustment as may be agreed upon shall be made in such price or prices. Any claim by the Contractor for an equitable adjustment under this clause shall be asserted within ninety (90) days from the effective date of the termination notice, unless an extension is granted in writing by the Engineer.

- J. The City may from time to time, under such terms and conditions as it may prescribe, make partial payments and payments on account against costs incurred by the Contractor in connection with the terminated portion of this contract whenever in the opinion of the Engineer the aggregate of such payments shall be within the amount to which the Contractor shall be entitled hereunder.
- K. Unless otherwise provided for in this Contract, or by applicable statute, the Contractor shall, from the effective date of termination until the expiration of three years after final settlement under this contract, preserve and make available to the City at all reasonable times at the office of the Contractor but without direct charge to the City, all books, records, documents and other evidence bearing on the costs and expenses of the Contractor under this contract and relating to the work terminated hereunder, or, to the extent approved by the Engineer, reproductions thereof.

**SC-20 PROJECT MANAGEMENT SOFTWARE**

The Contractor shall provide a schedule of deliverables utilizing Professional Project Management software approved by the Engineer. This schedule shall reflect the anticipated activities, time frames, and in work days for the activities listed. Also, the contractor is expected to utilize “Unifier” for submittals, RFIs, invoicing and any other reports and documents as required and directed by the Engineer. The City will provide the license and Training material for Unifier as required.

**SC-21 TEMPORARY TOILET ROOM FACILITIES**

The Contractor to Provide and maintain temporary toilet room facilities and enclosures.

**SC-22 PROJECT SUPERVISION BY THE CONTRACTOR**

The Contractor shall have a Superintendent on the premises during all phases and operations of work. The Superintendent shall be English Speaking.

**SC-23 MODIFICATION OF SCOPE**

Contractors should be aware that the project is not limited to the scope as defined in these bid documents and that DGS reserves the right to modify the scope of work as necessary with a change order.

**SECTION 00300**

NOTE: NO INFORMATION OTHER THAN THAT INCLUDED IN OR ATTACHED TO THIS ORIGINAL BID DOCUMENT (WHERE SUCH ATTACHMENT IS PERMITTED) WILL BE USED IN DETERMINING AWARD.

**ORIGINAL (NOT TO BE DETACHED)**  
NOTICE TO BIDDERS

**CITY OF BALTIMORE**  
**DEPARTMENT OF GENERAL SERVICES**  
**CONTRACT NUMBER GS21822**

THE COMPLETE (ORIGINAL)  
CONTRACT BOOK AND  
DUPLICATE OF BID OR  
PROPOSAL MUST BE  
INCLUDED IN THE  
BID ENVELOPE

**BID OR PROPOSAL**

**A. BID PRICES**

Proposal of \_\_\_\_\_  
Address \_\_\_\_\_  
Made this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_

Bid Due **WEDNESDAY, December 13, 2023**

Certified Check or Bank Cashier’s Check or Bank Treasurer’s Check or Bid Bond: Equal to two percent (2%) of the Total Bid Submitted.

Completion Time: **180** consecutive calendar days

Liquidated Damages: **\$ 1,500.00** per consecutive calendar day

To the Board of Estimates of Baltimore City:

\_\_\_\_\_ propose to furnish all necessary labor and materials, tools, implements, tackle, equipment and machinery, and to construct and complete the **GS 21822 – NORTHWEST COMMUNITY ACTION CENTER - LOWER PARK HEIGHTS - RENOVATIONS** at 2608 Leahy St, Baltimore, Maryland, all in strict accordance with the attached contract documents, at and for the lump sum base bid price of:

A. Base Bid:

\_\_\_\_\_ (\$ \_\_\_\_\_ )  
Written Words Numerical



The foregoing price is to include and cover the furnishing of all materials and labor requisite and proper, and the providing of all necessary machinery, tools' apparatus, and means for performing the work and the doing as set forth and described in the Contract Documents.

**B. BIDDER'S REPRESENTATION**

The undersigned bidder certifies that (he/she) has thoroughly examined the site on which the work is to be done, and is thoroughly conversant with all the work called for on the drawings and in all the specifications and with all the requirements necessary and existing to properly execute the work in its entirety; that all allowances have been made for contingencies, etc., for the through, prompt and intelligent execution and completion of the work, within the time required.

**C. RECEIPT OF ADDENDA:**

The Bidder acknowledges receipt of the following Addenda:

Addendum No. \_\_\_\_\_ dated \_\_\_\_\_

Addendum No. \_\_\_\_\_ dated \_\_\_\_\_

Addendum No. \_\_\_\_\_ dated \_\_\_\_\_

Addendum No. \_\_\_\_\_ dated \_\_\_\_\_

\_\_\_\_\_  
Signature and Title

The foregoing price is to include and cover the furnishing of all materials and labor requisite and proper, and the providing of all necessary machinery, tools, apparatus and means for performing the work and the doing of all the above mentioned work as set forth and described in the Contract Documents.

Note: Each and every person Bidding and Named above must sign here.

In case of Firms, give the first and last name of each member, in full, with Title.

In case a Bid shall be submitted by or in behalf of any Corporation, it must be signed in the name of such Corporation by some authorized Officer or Agent, thereof, who shall also subscribe his Name and Title. If practicable, the Seal of the Corporation shall be affixed.

In case a Bid shall be submitted by joint venture ("JV"), the document that established the JV must be submitted with the bid for verification purposes, and Officers or Agents of all of the firms that are part of the Joint Venture must sign below as acknowledgement of their participation in this bid.

WITNESS \_\_\_\_\_ (SIGNED) \_\_\_\_\_

(TITLE) \_\_\_\_\_

WITNESS \_\_\_\_\_ (SIGNED) \_\_\_\_\_

(TITLE) \_\_\_\_\_

WITNESS \_\_\_\_\_ (SIGNED) \_\_\_\_\_

(TITLE) \_\_\_\_\_

**D. ALTERNATE PRICES:**

Attention is directed to the Contract and General Conditions for the Construction, and Division, and Subdivisions which are hereby made a part of the Alternate Prices and which shall apply as fully as if repeated herein.

Consult the drawings and the applicable portions of the Specifications for location and extent. All work shall be subject to all stipulation as set forth in the individual sections of the specifications for the work involved as fully as if repeated herein.

In as much possible, the work that comprises the alternates is defined on the drawings and labeled accordingly. For special conditions that occur between the Base Bid and an Alternate, or between different Alternates, hereinafter described. Should a clarification of intent regarding what is included in a particular Alternate be required, it shall be requested of the DGS Project Engineer in a timely manner prior to receipt of Bids, but in no event later than the date for submission of bid RFIs, otherwise it shall be understood that the Contractor will complete all work covered by the Base Bid and whatever Alternates that are accepted plus whatever coordination or permanent or temporary work that is required to effectively and satisfactorily terminate incomplete construction or service either at the point of juncture with the new work or where directed.

THIS DOES NOT APPLY TO THIS PROJECT

<b>E. STANDARD UNIT PRICES:</b>	
In all instances when the Engineer, with the approval of the Director, Department of General Services, orders extra work to be performed and/or orders alterations, changes, additions and/or omissions to be made in the work, in accordance with Paragraph 14 of the General Conditions of the Specifications, the unit prices set out in the following schedule shall prevail:	
A. Price per cubic yard for earth excavation in general; including disposal of the excavated material either on or off the site, and/or placing the excavated material in compacted fill, as directed by the Engineer	\$20.00
B. Price per cubic yard for pit and trench excavation, either hand or machine, in material other than rock; including all required pumping, sheeting, sheet piling, bracing and shoring; compacted backfill using the excavated material and disposal of all surplus excavated material either on or off site as directed by the Engineer.	\$47.50
C. Price per cubic yard of pit and trench excavations in rock; including all required blasting, drilling, hand tool wedging, pumping, bracing, shoring, compacted backfill using approved material available on the site, and disposal of all excavated rock either on or off the site, as directed by the Engineer.	\$140.00
<b>D. Concrete Material and Installation</b>	
1. Concrete material costs for the actual amount of additional concrete placed will be paid for at the per-yard amount shown on the supplier's invoice plus an additional 10% to cover all overhead and profit for the same.	
2. Installation costs per cubic yard of concrete in place will be paid as follows:	
a. Placement of footings, pedestals, grade beams, and pile caps, including curing but excluding forms and reinforcing	\$45.00
b. Placement of walls and columns placed at elevations not higher than 5 feet above grade, including curing and finishing of vertical services, but excluding forms and reinforcing	\$35.00
E. Price per pound of reinforcing steel place including all required accessories, bracing, shores and stripping	\$.76
F. Price per square foot of concrete contact area for forms in place, including all required accessories, bracing, shores and stripping	
1. Footings, grade beams and pile caps	\$4.15
2. Walls, columns and other vertical surfaces not higher than 5 feet above grade including steel column encasement.	\$6.10
G. Price per square foot of masonry foundation walls, including horizontal steel reinforcing for specified foundation walls in place.	
For 4" thick walls	\$4.80
For 8" thick walls	\$6.75
For 10" thick walls	\$8.50
For 12" thick walls	\$10.40
For 16" thick walls	\$13.00
All unit prices shall apply equally to both additions and/or deductions, and include all costs of and permitted percentages for, overhead, profit, taxes, Workmen's Compensation Insurance, Public Liability Insurance, Health and Welfare Payment, Social Security Taxes, Unemployment Compensation, etc. If a change involves an omission and no extra work, the Contractor shall receive a sum not in excess of 5% of the unit price for overhead.	

The definition of rock, as listed under Item C. shall be as follows:

Any material, which cannot be removed by methods other than drilling, wedging and/or blasting, shall be termed rock excavation. All other excavations shall be termed earth excavation. Should boulders be encountered, those in size up to ½ cubic yard shall be termed earth excavation.

**F. BID/PROPOSAL AFFIDAVIT**

**INSTRUCTIONS:** The following Bid/Proposal Affidavit is a material and integral part of this Bid. Each Bidder shall read it carefully and enter all information required therein prior to executing it before a Notary Public. Failure to properly complete and execute this Bid/Proposal Affidavit MAY cause your bid to be found non-responsive and it may be rejected by the Board of Estimates.

**1. AUTHORIZED REPRESENTATIVE**

I HEREBY AFFIRM THAT:

I am the (title) \_\_\_\_\_ and the duly authorized representative of (business name) \_\_\_\_\_ and that I possess the legal authority to make this Affidavit on behalf of myself and the business for which I am acting.

**2. AFFIRMATION REGARDING BRIBERY CONVICTIONS**

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the above business (as is defined in Section 16-101(b) of the State Finance and Procurement Article of the Annotated Code of Maryland), or any of its officers, directors, partners, controlling stockholders, or any of its employees directly involved in the business's contracting activities including obtaining or performing contracts with public bodies has been convicted of, or has had probation before judgment imposed pursuant to Criminal Procedure Article, §6-220, Annotated Code of Maryland, or has pleaded nolo contendere to a charge of, bribery, attempted bribery, or conspiracy to bribe in violation of Maryland law, or of the law of any other state or federal law, **except** as follows (indicate the reasons why the affirmation cannot be given and list any conviction, plea, or imposition of probation before judgment with the date, court, official or administrative body, the sentence or disposition, the name(s) of person(s) involved, and their current positions and responsibilities with the business):

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**3. AFFIRMATION REGARDING OTHER CONVICTIONS**

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the above business, or any of its officers, directors, partners, controlling stockholders, or any of its employees directly involved in the business's contracting activities including obtaining or performing contracts with public bodies, has:

(1) Been convicted under state or federal statute of:



(a) A criminal offense incident to obtaining, attempting to obtain, or performing a public or private contract; or

(b) Fraud, embezzlement, theft, forgery, false pretenses, falsification or destruction of records or receiving stolen property;

(2) Been convicted of any criminal violation of a state or federal antitrust statute;

(3) Been convicted under the provisions of Title 18 of the United States Code for violation of the Racketeer Influenced and Corrupt Organization Act, 18 U.S.C. §1961 et seq., or the Mail Fraud Act, 18 U.S.C. §1341 et seq., for acts in connection with the submission of bids or proposals for a public or private contract;

(4) Been convicted of a violation of the State Minority Business Enterprise Law, §14-308 of the State Finance and Procurement Article of the Annotated Code of Maryland;

(5) Been convicted of a violation of the City of Baltimore's Minority and Women's and Business Enterprises Law, Baltimore City Code, Article 5, Subtitle 28;

(6) Been convicted of conspiracy to commit any act or omission that would constitute grounds for conviction or liability under any law or statute described in subsections (1)—(5) above;

(7) Been found civilly liable under a state or federal antitrust statute for acts or omissions in connection with the submission of bids or proposals for a public or private contract; or

(8) Admitted in writing or under oath, during the course of an official investigation or other proceedings, acts or omissions that would constitute grounds for conviction or liability under any law or statute described in §§B and C(1)—(7) above, **except** as follows (indicate reasons why the affirmations cannot be given, and list any conviction, plea, or imposition of probation before judgment with the date, court, official or administrative body, the sentence or disposition, the name(s) of the person(s) involved and their current positions and responsibilities with the business, and the status of any debarment):

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**4. AFFIRMATION REGARDING DEBARMENT**

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the above business, or any of its officers, directors, partners, controlling stockholders, or any of its employees directly involved in the business's contracting activities, including obtaining or performing contracts with public bodies, has ever been suspended or debarred (including being issued a limited denial of participation) by any public entity, **except** as follows (list each debarment or suspension providing the dates of the suspension or debarment, the name of the public entity and the status

of the proceedings, the name(s) of the person(s) involved and their current positions and responsibilities with the business, the grounds of the debarment or suspension, and the details of each person's involvement in any activity that formed the grounds of the debarment or suspension).

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**5. AFFIRMATION REGARDING DEBARMENT OF RELATED ENTITIES**

I FURTHER AFFIRM THAT:

(1) The business was not established and it does not operate in a manner designed to evade the application of or defeat the purpose of debarment pursuant to Sections 16-101, et seq., of the State Finance and Procurement Article of the Annotated Code of Maryland and/or Article 5, Subtitle 40, of the Baltimore City Code; and

(2) The business is not a successor, assignee, subsidiary, or affiliate of a suspended or debarred business, **except** as follows (you must indicate the reasons why the affirmations cannot be given without qualification):

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**6. AFFIRMATION REGARDING COLLUSION**

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the above business has:

(1) Agreed, conspired, connived, or colluded to produce a deceptive show of competition in the compilation of the accompanying bid or offer that is being submitted;

(2) In any manner, directly or indirectly, entered into any agreement of any kind to fix the bid price or price proposal of the bidder or offeror or of any competitor, or otherwise taken any action in restraint of free competitive bidding in connection with the contract for which the accompanying bid or offer is submitted.

**7. POLITICAL CONTRIBUTION DISCLOSURE AFFIRMATION**

I FURTHER AFFIRM THAT:

I am aware of, and the above business will comply with, Election Law Article, Title 14, Disclosure By Persons Doing Public Business, Annotated Code of Maryland, which requires that every person that enters into contracts, leases, or other agreements with the State of Maryland, including its agencies or a municipal corporation or a political subdivision of the State, during a calendar year in which the person receives in the aggregate \$100,000 or more shall file with the State Board of Elections a statement disclosing contributions in excess of \$500 made during the reporting period to a candidate for elective office in any primary or general election.

I am aware of, and the above business will comply with all applicable provisions of the Maryland Annotated Code, Election Law Article, §14-101 *et seq.*, “Disclosure By Persons Doing Public Business”, (“Election Law”). I hereby certify, in accordance with §14-107 of the Election Law, that the above business has filed the statement required under §14-104(b)(1) of the Election Law.

**8. CERTIFICATION OF CORPORATION REGISTRATION AND TAX PAYMENT**

I FURTHER AFFIRM THAT:

(1) The business named above is a (domestic \_\_\_ ) (foreign \_\_\_ ) corporation registered in accordance with the Corporations and Associations Article, Annotated Code of Maryland, and that it is in good standing and has filed all of its annual reports, together with filing fees, with the Maryland State Department of Assessments and Taxation.

(If not applicable, so state). \_\_\_\_\_

(2) Except as validly contested, the business has paid, or has arranged for payment of, all taxes due the City of Baltimore and the State of Maryland and has filed all required returns and reports with the Comptroller of the Treasury, the State Department of Assessments and Taxation, the Department of Labor, Licensing, and Regulation and the City of Baltimore, as applicable.

(3) If awarded the contract resulting from this Bid/Proposal, the business shall remain in full compliance with all requirements of this § 8 during the term, and any extensions thereof, of the said contract.

**9. CONTINGENT FEES**

I FURTHER AFFIRM THAT:

The business has not employed or retained any person, partnership, corporation, or other entity, other than a bona fide employee, bona fide agent, bona fide salesperson, or commercial selling agency working for the business, to solicit or secure the Contract, and that the business has not paid or agreed to pay any person, partnership, corporation, or other entity, other than a bona fide employee, bona fide agent, bona fide salesperson, or commercial selling agency, any fee or any other consideration contingent on the making of the Contract.

**10. CERTIFICATION OF WORK CAPACITY AND PREQUALIFICATION CLASSIFICATIONS**

I FURTHER AFFIRM THAT:

We hold Certificate No. \_\_\_\_\_ which expires on \_\_\_\_\_.

We have the Work Capacity to perform this contract as provided in the Standard Specifications and in accordance with the rules, regulations and requirements of the Baltimore City Contractors' Qualification Committee.

Furthermore, our current Certificate of Prequalification includes work Classifications covering Contract Items to a total of at least Fifty Percent (50%) of the Aggregate Amount Bid.

**11. ACKNOWLEDGEMENT**

I ACKNOWLEDGE THAT this Affidavit shall be included in my Bid/Proposal and that my failure to furnish it MAY be cause for my Bid/Proposal to be rejected. I further acknowledge that this Affidavit is subject to applicable laws of the United States, the State of Maryland and the City of Baltimore, both criminal and civil, and that nothing in this Affidavit or any contract resulting from the submission of this Bid/Proposal shall be construed to supersede, amend, modify or waive, on behalf of the City of Baltimore, the exercise of any statutory right or remedy conferred by the Constitution and the laws of Maryland and Baltimore City with respect to any misrepresentation made or any violation of the obligations, terms and covenants undertaken by the above business with respect to (1) this Affidavit, (2) the contract, and (3) other Affidavits comprising part of the contract.

I FURTHER ACKNOWLEDGE THAT if the business is awarded the contract resulting from this Bid/Proposal, this Affidavit shall become a material part of the contract and the business agrees that it shall remain in full compliance with all Affirmations contained herein during the term of the contract an any and all extensions thereto.

**I DO SOLEMNLY DECLARE AND AFFIRM UNDER THE PENALTIES OF PERJURY THAT THE CONTENTS OF THIS AFFIDAVIT ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF.**

By: \_\_\_\_\_  
Name/Title

Subscribed and sworn to me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_.

\_\_\_\_\_  
Notary Public

My commission expires on \_\_\_\_\_.

**G. MAYOR AND CITY COUNCIL OF BALTIMORE CITY  
BALTIMORE CITY CODE, ARTICLE 5, SUBTITLE 28  
MINORITY AND WOMEN'S BUSINESS PROGRAM**

**PART A: INSTRUCTIONS**

The requirements of Article 5, Subtitle 28 of the Baltimore City Code – Minority and Women's Business Program are a part of this contract and are incorporated by reference. The failure of any bidder, contractor or subcontractor to comply with Article 5, Subtitle 28 is subject to any or all of the following penalties: (1) suspension of contract; (2) withholding of funds; (3) rescission of contract based on material breach; (4) refusal to accept a bid; (5) disqualification of a bidder, contractor, or other business from eligibility for providing goods or services to the City for a period not to exceed 2 years; and (6) payment of liquidated damages. Art. 5, §28-122.

All bidders are advised to read all instructions and forms carefully. Please follow the instructions for each section of the forms. Failure to respond or properly execute the forms can result in disqualification and possible rejection of your bid.

A complete copy of Article 5, Subtitle 28 of the Baltimore City Code is available online at: <https://legislative.reference.baltimorecity.gov/city-codes>

**1. BID REQUIREMENTS**

Bids must include a commitment to utilize MBEs and WBEs at a percentage that equals or exceeds the contract goals indicated in the contract specifications. **Bidder must submit the following completed documents WITH THE BID:**

- ✓ **Part B: Statement of Intent Form(s)** – to be signed by Bidder and MBE and/or WBE.
  - ✓ **Part D: MBE/WBE Participation Affidavit** – to be completed and signed by Bidder
- Any bid that does not include a signed Statement of Intent Form(s) and the MBE/WBE Participation Affidavit is non-responsive and will be rejected. MBE/WBE MUST be certified with the City of Baltimore.**

**ONLY SUBMIT IF APPLICABLE:**

- ✓ **Part C: Statement of Self-Performance** – to be signed by Bidder who is certified by the City as MBE and/or WBE. This is only filled out if the prime plans to self-perform to fulfill the MBE/WBE goals.
- ✓ **Part E: MBE/WBE Participation Waiver Request** – to be completed and submitted by Bidder if unable to meet the participation goals. (Please note: Substantial documentation must be provided to justify reasons for not being able to meet goals) Specifically, on Part E numbers one, two, and three must be addressed in detail.

**2. VERIFYING CERTIFICATION**

- Bidder is responsible for verifying that each MBE and WBE to be used on a contract is certified with Baltimore City by the Minority and Women's Business Opportunity

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- Office (MWBOO) at bid opening for the work and/or services to be performed on the contract. Art. 5, §28-48(d).
- The MBEs and WBEs named must be certified for the services they are listed to perform, and the services must be required as part of the Detailed Specifications of the contract.
- A directory of certified MBEs and WBEs is available online at <https://cityservices.baltimorecity.gov/mwboo/>
- County, State, or Federal certification is not acceptable, the MBE and WBE **must** be certified with the City of Baltimore.

### 3. COUNTING MBE AND WBE PARTICIPATION

#### a) Participation of M/WBE's

**A business enterprise that is certified as both an MBE and WBE (M/WBE) may not be counted toward both the MBE and WBE goals for the same project.** The bidder must select the goal to which the business enterprise is to be counted. Art. 5, §28-31(b) and §28-35.

#### b) Credit for Self-Performance

A bidder that is an MBE or WBE may count up to 50% of the dollar value of the work it intends to perform with its own forces toward the applicable MBE or WBE goal. The amount of credit may not exceed the MBE's or WBE's available work capacity as calculated with the Contractor Prequalification rules. **Intentions to count self-performance toward the MBE or WBE goal must be indicated on Part C: Statement of Intent to Self-Perform.** Art. 5, §28-31(d).

#### c) Commercially Useful Function

The bidder may count toward the contract goals only expenditures to MBEs and WBEs that perform a commercially useful function in the execution of the contract. Commercially useful function means the performance of real and distinct work for which the business enterprise has the skill, expertise, and actual responsibility to perform, manage and supervise. Art. 5, §28-32.

#### d) Joint Ventures

A bidder may count toward the contract goal the portion of its expenditure to a joint venture that is equal to the percentage of the MBE or WBE participation in the joint venture. The MBE or WBE member of the joint venture must have an interest in the control, management, risks and operation of the joint venture commensurate with the member's percentage of ownership. The MBE or WBE member of the joint venture must be responsible for a clearly defined portion of the work to be performed, equal to its share in the ownership, control and management of the joint venture. Art. 5, §28-33.

#### e) Subcontracting by MBE or WBE

A bidder may not count toward its contract goal any agreement with a certified MBE or WBE subcontractor who intends to subcontract more than 10% of the dollar amount of the services to be performed under its agreement with the bidder. This restriction does not apply to an MBE's

or WBE's contracts for the purchase of materials, equipment or supplies that are incidental to the performance of services under its agreement with the bidder. Art. 5, §28-34.

f) Manufacturers and Suppliers

Manufacturers – A bidder may count toward the contract goal its entire expenditure to a certified MBE or WBE that manufactures the goods supplied. Art. 5, §28-36.

Non-Manufacturers – **Only 25% of each contract goal may be attained by expenditures to MBEs and WBEs that are non-manufacturing suppliers.** Art. 5, §28-37. *Example:* If the bid amount is \$100,000 and the MBE or WBE goal is 15% or \$15,000; then the limit for the MBE or WBE suppliers that are non-manufacturers is \$3,750 or 25% of the 15% goal.

g) Insurance Companies and Travel Agents

A bidder may count toward the contract goals only the fees or commissions charged by an MBE or WBE insurance company or travel agent. Art. 5, §28-38.

h) Financial Institutions

A bidder may count toward the contract goals only the fees charged and earned by an MBE or WBE financial institution. Art. 5, §28-39.

i) Non-Affiliation

A bidder may not use an MBE or WBE to meet a contract goal if the bidder has a financial interest in, has an interest in the ownership or control of, or is significantly involved in the operation of the MBE or WBE. Art. 5, §28-41.

4. **WAIVER REQUESTS**

If a bidder is unable to comply with a contract goal, the bidder may submit a waiver request with the bid. The waiver request must be made on the MBE/WBE Participation Waiver Request Form. A waiver will not be granted unless the waiver request includes documentation that demonstrates good faith efforts to meet the goals. Art. 5, §28-62.

5. **SUBSTITUTION OF MBE OR WBE**

The Minority and Women's Business Opportunity Office must approve the substitution, after award of a contract, of any MBE or WBE that is included on a bidder's Statement of Intent at the time of bid opening. Any unjustified failure to comply with this requirement after award of a contract is a material breach of contract. Art. 5, §28-63(a).

**6. CONTRACT REQUIREMENTS**

During the term of the contract, any unjustified failure to comply with the levels of MBE and WBE participation identified in the bid is a material breach of contract. Art. 5, §28-48 (e).

Before final payment, the contractor must submit the Subcontractor Utilization Form with its final payment request. The Subcontractor Utilization Form will include a list of the names of all subcontractors utilized on the contract, both MBE/WBE and non-MBE/WBE, the total amount paid to each subcontractor, and the owner's race/ethnicity and gender.

**THIS PACKAGE OF MBE AND WBE PARTICIPATION  
COMMITMENT FORMS, AS DETAILED IN INSTRUCTION 1.  
BID REQUIREMENTS, ARE DUE WITH THE BID.**



**MBE AND WBE PARTICIPATION  
COMMITMENT FORMS**

Name of Bidder (Proposer): \_\_\_\_\_

Address: \_\_\_\_\_

Contracting Agency: \_\_\_\_\_

Contract (Project) Title: \_\_\_\_\_

Contract Number: \_\_\_\_\_

Bid Due Date: \_\_\_\_\_

**The MBE goal is   32  %      The WBE goal is   14  %**

If MBE Sub-Goals Apply: (the MBE sub-goals will be listed in the solicitation, if there are no MBE sub-goals listed please leave blank)

African American:   %    Asian American:   %    Hispanic American:   %    Native American:   %

**PART B:  
MBE/WBE AND PRIME CONTRACTOR'S STATEMENT OF INTENT**

**COMPLETE A SEPARATE FORM FOR EACH MBE and WBE NAMED IN THIS BID. (You are permitted to make additional copies of this form as needed). PART A: INSTRUCTIONS MUST BE REVIEWED BEFORE COMPLETING THIS FORM, WITH PARTICULAR ATTENTION PAID TO SECTIONS 2, 3A and 3F.**

Contract Number: \_\_\_\_\_

Name of Prime Contractor: \_\_\_\_\_

Name of Baltimore City Certified Subcontractor:  
\_\_\_\_\_

**City Certification Number:** \_\_\_\_\_ **MBE** \_\_\_\_\_ **WBE**

List the City certified Work and/or Service to be performed by MBE or WBE:  
*(The selected MBE and/or WBE above must be City certified for the work/service being performed)*

\_\_\_\_\_  
\_\_\_\_\_

Materials/Supplies to be furnished by MBE or WBE:  
\_\_\_\_\_

**Percentage of work to be performed by MBE or WBE:** \_\_\_\_\_%

**Dollar Amount to be paid to MBE or WBE for work performed: \$** \_\_\_\_\_  
**(If MBE sub-goals apply, please list the percentage for this Statement of Intent.)** (the MBE sub-goals would be listed in the solicitation, if there are no MBE sub-goals listed please leave blank)

African American: \_\_\_% Asian American: \_\_\_% Hispanic American: \_\_\_ % Native American: \_\_\_%

The undersigned Prime Contractor and Subcontractor agree to enter into a contract for the work/service indicated above for the percentage and corresponding dollar amount listed to meet the MBE/WBE participation goals. This form is subject to the Prime Contractor's execution of a contract with the City of Baltimore. The Subcontractor is currently certified as an MBE or WBE with the City of Baltimore Minority and Women's Business Opportunity Office to perform the work described above.

\_\_\_\_\_  
Signature of Prime Contractor **(REQUIRED)** Date

\_\_\_\_\_  
Email Address Phone

\_\_\_\_\_  
Signature of MBE or WBE **(REQUIRED)** Date

\_\_\_\_\_  
Email Address Phone

**PLEASE NOTE: CHANGES TO INFORMATION ON PART B: MBE/WBE AND PRIME CONTRACTOR'S STATEMENT OF INTENT THAT ARE MATERIAL TO THE AGREEMENT BETWEEN THE PRIME CONTRACTOR AND MBE OR WBE MUST BE INITIALED BY BOTH PARTIES.**

**PART C:  
STATEMENT OF INTENT TO SELF-PERFORM**

**PART A: INSTRUCTIONS MUST BE REVIEWED BEFORE COMPLETING THIS FORM, WITH PARTICULAR ATTENTION PAID TO SECTION 2, 3a, 3b and 3f.**

Name of Prime Contractor: \_\_\_\_\_

**City Certification Number:** \_\_\_\_\_ **MBE** \_\_\_\_\_ **WBE**

List the City certified Work and/or Service to be self-performed:  
*(The Prime Contractor MBE or WBE above must be City certified for the work/service being performed)*

\_\_\_\_\_  
\_\_\_\_\_

Materials/Supplies to be furnished:  
\_\_\_\_\_

**Total Percentage of Self-Performed Work toward the MBE or WBE Goal:** \_\_\_\_\_%

**Total Dollar Amount of Work/Services to be Self-Performed by the Prime Contractor on this Contract:**  
\$ \_\_\_\_\_

**(If MBE sub-goals apply, please list the percentage for this Statement of Intent.)** (the MBE sub-goals would be listed in the solicitation, if there are no MBE sub-goals listed please leave blank)

African American: \_\_\_% Asian American: \_\_\_% Hispanic American: \_\_\_% Native American: \_\_\_%

The undersigned Prime Contractor agrees to Self-Perform the Work/Service indicated above for the Dollar Amount and/or Percentage indicated to meet the MBE/WBE participation goals, subject to the Prime Contractor's execution of a contract with the City of Baltimore. The Prime Contractor is currently certified as an MBE or WBE with the City of Baltimore Minority and Women's Business Opportunity Office to perform the work described above.

\_\_\_\_\_  
Signature of Prime Contractor (**REQUIRED**) \_\_\_\_\_ Date

\_\_\_\_\_  
Email Address \_\_\_\_\_ Phone

PART D: MBE/WBE PARTICIPATION AFFIDAVIT

The Undersigned authorized representative of Contractor does hereby make the following Affidavit: Contractor has read the Bidder Information and Instructions regarding the MBE/WBE Program. Contractor acknowledges the MBE goal of 32% and the WBE goal of 14% for this contract. Contractor has achieved the following participation:

MBE \_\_\_\_\_ % and \$ \_\_\_\_\_

WBE \_\_\_\_\_ % and \$ \_\_\_\_\_

of the total contract amount which is \$ \_\_\_\_\_.

My firm has made good faith efforts to achieve the MBE and WBE participation goals for this contract. I understand that, if awarded the contract, my firm must submit to the Minority and Women’s Business Opportunity Office (MWBOO) copies of all executed agreements with the MBE and WBE firms being utilized to achieve the participation goals and other requirements of Article 5, Subtitle 28 of the Baltimore City Code. I understand that these documents must be submitted prior to the issuance of a notice to proceed.

I understand that, if awarded the contract, my firm must submit to the MWBOO the Subcontractor Utilization Form, canceled checks, and any other documentation and reports required by MWBOO verifying payments to the MBE and WBE firms utilized on the contract, including electronic verification.

I understand that, if awarded this contract and I find that I am unable to utilize the MBEs or WBEs identified in my Statements of Intent, I must substitute other certified MBE and WBE firms to meet the participation goals. I understand that I may not make a substitution until I have obtained the written approval of MWBOO.

I understand that, if awarded this contract, authorized representatives of the City of Baltimore may examine, from time to time, the books, records and files of my firm to the extent that such material is relevant to a determination of whether my firm is complying with the MBE and WBE participation requirements of this contract.

I do solemnly declare and affirm under the penalty of perjury that the contents of the foregoing Affidavit are true and correct to the best of my knowledge, information, and belief.

Contractor Company Name

Signature

Email Address and Phone

Print Name and Title

PART E: MBE/WBE PARTICIPATION WAIVER REQUEST FORM

Name of Bidder \_\_\_\_\_

Address \_\_\_\_\_

Contracting Agency: \_\_\_\_\_

Contract (Project) Number and Title: \_\_\_\_\_

Bid Due Date: \_\_\_\_\_

**Goals on this contract..... MBE: \_\_\_\_\_% and WBE: \_\_\_\_\_%**

If MBE Sub-Goals Apply:

African American: \_\_\_% Asian American: \_\_\_% Hispanic American: \_\_\_ % Native American: \_\_\_%

**I have achieved.....MBE: \_\_\_\_\_% and WBE: \_\_\_\_\_%**

If MBE Sub-Goals Apply:

African American: \_\_\_% Asian American: \_\_\_% Hispanic American: \_\_\_ % Native American: \_\_\_%

**I am requesting a waiver of.....MBE: \_\_\_\_\_% and WBE: \_\_\_\_\_%**

If MBE Sub-Goals Apply:

African American: \_\_\_% Asian American: \_\_\_% Hispanic American: \_\_\_ % Native American: \_\_\_%

I have contacted MWBOO for assistance: \_\_\_\_\_Yes \_\_\_\_\_No (Check One)

Number of MBE firms contacted: \_\_\_\_\_ (Attach a list of names.)

Number of WBE firms contacted: \_\_\_\_\_ (Attach a list of names.)

**Attach documentation of your good faith efforts to secure, contact and negotiate with MBEs and WBEs, including:**

- (1) The reasons your company is unable to secure sufficient MBE/WBE participation to meet the stated goals
- (2) The efforts made by your company to select portions of the contract to be performed by MBEs and WBEs
- (3) For each MBE or WBE that placed a bid that you consider to be unacceptable, a statement that explains the basis for that conclusion
- (4) **Please consult the Bidder Information Guide & MWBOO FAQ for additional waiver guidance.**

\_\_\_\_\_  
Signature of Authorized Company Representative

\_\_\_\_\_  
Date

### **BIDDER SUBMISSION CHECKLIST**

- You have reviewed the **Bidder Information Guide** following this checklist
- You retained the **Subcontractor Utilization Form** for submission after performing on the contract, if awarded. **This form is not to be submitted with your bid.**

— **Part B: Statement of Intent Form(s)**

- Name of Bidder and Name of MBE or WBE included at the top of the form
- Form is signed by both Bidder and MBE or WBE
- Form indicates whether the subcontractor is a MBE or WBE
- Checked MWBOO database to verify MBE and WBE certification
- Listed the MBE or WBE subcontractor's City certification number
- Checked SDAT database to verify good standing of MBE and WBE
- Detailed Brief description of work to be provided
- Detailed Materials/supplies to be provided (if applicable)
- Stated Percentage of Work to be performed
- Stated Dollar amount of work to be performed
- The percentages being performed by the MBE and WBE meet the goals set on the bid solicitation

— **Part D: MBE/WBE Participation Affidavit**

- The applicable MBE/WBE goal was entered in the first paragraph (this goal should match the goal stated in the bid solicitation)
- Stated MBE or WBE percentage (%) of work to be performed (this percentage should match the goals set on the bid solicitation)
- Stated dollar value corresponding to the percentage of work to be performed (if this is a requirements contract, this can be left blank)
- Completed Company name and address
- Signed your name
- Printed name and title of the person who signed the form

**OPTIONAL FORMS, these should only be submitted if applicable**

— **Part C: Statement of Self-Performance**

- You are certified MBE/WBE by Baltimore City MWBOO
- Included the percentage of work to be applied to the applicable MBE or WBE participation goal
- Self-performing percentage is not over 50%
- Detailed Brief description of work to be provided
- Detailed Materials/supplies to be provided (if applicable)
- Stated Percentage of Work to be self-performed
- Stated Dollar amount of work to be self-performed
- Form is signed by the Bidder

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— **Part E: MBE/WBE Participation Waiver Request**

- You submitted an additional document addressing questions one, two and three on Part E.**
- You exercised good faith efforts to achieve the applicable contract participation goals
- You reviewed the Bidder Information Guide for guidance regarding waivers and good faith efforts
- You detailed all efforts that were undertaken to secure MBE and/or WBE participation on this contract in the Waiver Request Form and submitted additional documentation of these efforts.
- You have double-checked that all bid forms that will be submitted are complete, contain the required information, and are signed and dated.**



### Bidder Information Guide

#### **What are some common mistakes or omissions that I should try to avoid and things to keep in mind?**

- Any bid that does not include a signed Statement of Intent Form(s) and the MBE/WBE Participation Affidavit is non-responsive and will be rejected.
- Any Statement of Intent Form(s) and/or MBE/WBE Participation Affidavit that are not properly executed or do not contain all required information will result in a finding of non-compliance and will be rejected.
- **Utilizing a business that is not certified with the City of Baltimore or that has an expired certification, without an extension due to a pending application for renewal, will not count towards meeting a MBE/WBE participation goal.** City Code Article 5, §28-41(d) states that each bidder is responsible for verifying that all MBEs and WBEs to be used have been certified by the Office before bid opening.
- The failure to exercise good faith efforts when requesting a waiver and not meeting the applicable MBE/WBE goals for the contract will result in a finding of non-compliance
- A business enterprise that is Baltimore City certified as both an MBE and WBE (M/WBE) may not be counted toward both the MBE and WBE goals for the same project. The bidder must select the goal to which the business enterprise is to be counted. Art. 5, §28-31(b) and §28-35.
- A bidder that is a City certified MBE/WBE may only count up to 50% of the dollar value of the work it intends to perform with its own forces toward the applicable MBE or WBE goal. The amount of credit may not exceed the MBE/WBE's available work capacity as calculated with the Contractor Prequalification rules. Intentions to count self-performance toward the MBE or WBE goal must be indicated on Part C: Statement of Intent to Self-Perform. A bidder's statement that they will self-perform, but the business is not City certified as a MBE/WBE, may result in the bid being found non-compliant.
- A bidder may count toward the contract goal the portion of its expenditure to a joint venture that is equal to the percentage of the MBE or WBE participation in the joint venture. The MBE or WBE member of the joint venture must have an interest in the control, management, risks and operation of the joint venture commensurate with the member's percentage of ownership. The MBE or WBE member of the joint venture must be responsible for a clearly defined portion of the work to be performed, equal to its share in the ownership, control and management of the joint venture. Art. 5, §28-33.

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- A bidder may not count toward its contract goal any agreement with a certified MBE or WBE subcontractor who intends to subcontract more than 10% of the dollar amount of the services to be performed under its agreement with the bidder. This restriction does not apply to an MBE/WBE that contracts for the purchase of materials, equipment or supplies that are incidental to the performance of services under its agreement with the bidder. Art. 5, §28-34.
- A bidder may count toward the contract goal its entire expenditure to a certified MBE or WBE that manufactures the goods supplied. Art. 5, §28-36.
- Only 25% of each contract goal may be attained by expenditures to MBEs and WBEs that are non-manufacturing suppliers. Art. 5, §28-37.
- A bidder may count toward the contract goals only the fees or commissions charged by an MBE or WBE insurance company or travel agent. Art. 5, §28-38.
- A bidder may count toward the contract goals only the fees charged and earned by an MBE or WBE financial institution. Art. 5, §28-39.
- A bidder may not use an MBE or WBE to meet a contract goal if the bidder has a financial interest in, has an interest in the ownership or control of, or is significantly involved in the operation of the MBE or WBE. Art. 5§28-41.

**Is there any limitation of what services a MBE/WBE can perform that count towards the contract participation goals?**

MBE/WBEs subcontractors must perform a commercially useful function. Commercially useful function is defined in the City Code as the performance of real and distinct work for which the business enterprise has the skill, expertise, and actual responsibility to perform, manage and supervise. Art. 5, §28-32. As a result, the bidder should think broadly and consider all functions and services necessary to fully perform the contract.

**Can I get a waiver of the contract participation goals?**

If a bidder is unable to comply with a contract goal, the bidder may submit a waiver request with the bid. The waiver request must be made on the MBE/WBE Participation Waiver Request Form. A waiver will not be granted unless the waiver request includes documentation that demonstrates good faith efforts to meet the goals. Art. 5, §28-62. The bidder should have previously consulted the MWBOO certification directory, <https://cityservices.baltimorecity.gov/mwboo/>, and made attempts to secure MBE/WBE subcontractor participation.

Each waiver request **must include documentation** of your good faith efforts to secure, contact and negotiate with MBEs and WBEs, including:

(1) The reasons your company is unable to secure sufficient MBE/WBE participation to meet the stated goals;

(2) The efforts made by your company to select portions of the contract to be performed by MBEs and WBEs; &

(3) For each MBE or WBE that placed a bid that you consider to be unacceptable, a statement that explains the basis for that conclusion.

Each waiver is reviewed individually, highly scrutinized, and will not be granted if the bidder's submission does not evidence that they undertook several steps to secure participation in good faith.

**What are "good faith efforts"?**

MWBOO uses the term good faith efforts in several contexts including bid participation forms, waivers, and in evaluating efforts to meet contract participation goals by bidders. All efforts must begin with an evaluation of the availability of certified MBE/WBEs to perform the contract services by consulting the MWBOO certification directory:

<https://cityservices.baltimorecity.gov/mwboo/>

If there are certified MBE/WBEs that can provide the goods or services under the contract the contractor/vendor must undertake efforts to contact those businesses, secure price quotes, and exercise diligence in determining if they have the capabilities and expertise to perform. The availability of MBE/WBEs strongly undercuts any request for participation goals to be waived.

**The following are additional examples of actions that can show that efforts were undertaken in good faith to meet the applicable contract goals, including but not limited to:**

- The bidder should solicit interest as early in the acquisition process as practicable to allow the MBE/WBEs to respond to the solicitation and submit a timely offer for the subcontract. The bidder should determine with certainty if the MBE/WBEs are interested by taking appropriate steps to follow-up on initial solicitations.
- The bidder should identify portions of the work to be performed by MBE/WBEs in order to increase the likelihood that the MBE/WBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units (for example, smaller tasks or quantities) to facilitate MBE/WBE participation, even when the prime contractor might otherwise prefer to perform these work items with its own forces. This may include, where possible, establishing flexible timeframes for performance and delivery schedules in a manner that encourages and facilitates MBE/WBE participation.
- The bidder should provide interested MBE/WBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation with their offer for the subcontract.
- A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including MBE/WBEs subcontractors, and would take a

firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using MBE/WBEs is not sufficient reason for a bidder's failure to meet the contract MBE/WBEs goal, as long as such costs are reasonable and not excessive.

- The bidder should engage in negotiations in good faith with interested MBE/WBEs. It is the bidder's responsibility to make a portion of the work available to MBE/WBEs subcontractors and suppliers and to select those portions of the work or material needed that is consistent with the available MBE/WBEs subcontractors and suppliers, so as to facilitate MBE/WBEs participation.
- Evidence of such negotiation includes: the names, addresses, and telephone numbers of MBE/WBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for MBE/WBEs to perform the work.
- Bidders should include detailed information regarding their attempts to secure participation. MWBOO cannot accept unsupported statements about efforts to secure MBE/WBE participation. **All waivers must include documentation of those efforts.** For example: you should include email correspondence with subcontractors to show their response or lack of response.
- It is insufficient to simply state that you contacted a business and provide their directory entry or contact information. It is insufficient to make arguments why you believe the goals should be waived and you should be permitted to perform the entire contract with no participation goals. It is insufficient to detail that the contract was previously granted a waiver or that you were previously awarded this contract. A promise to use MBE/WBEs after contract award is not considered to be responsive to the contract solicitation or to constitute good faith efforts. Also, the ability or desire of a prime contractor to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts or to meet the contract MBE/WBE participation goals.
- It is the bidder's responsibility to establish and document the efforts that were undertaken to secure MBE/WBE participation. **Waivers are judged solely based upon the information provided and detailed to MWBOO in the bid submission.**
- There are numerous ways to identify subcontractors to participate on the contract such as: the MWBOO certification directory, <https://cityservices.baltimorecity.gov/mwboo/>, attending pre-bid information sessions, business matchmaking meetings and events, advertising and/or written notices, posting of Notices of Sources Sought and/or Requests for Proposals, and/or written notices or emails to all MBE/WBEs listed in MWBOO's directory that specialize in the services or goods required to perform the contract.

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- MBE/WBEs should not be rejected as unqualified without sound reasons based on a thorough investigation of their capabilities. Factors such as the contractor's standing within their industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union status) are not legitimate causes for the rejection or non-solicitation of bids in the contractor's efforts to meet the project goal.
- Bidders should make reasonable efforts, if needed, to assist interested MBE/WBEs in obtaining bonding, lines of credit, insurance, or related assistance or services as required by the subcontractor.
- Contacting and utilizing the services of available minority/women community organizations; minority/women contractors' groups; local, State, and Federal minority/women business assistance offices (including MWBOO); and other organizations as allowed on a case-by-case basis to assist in the recruitment and placement of MBE/WBEs. When considering a waiver, you should contact MWBOO if you feel as though you have exhausted the ability to identify additional MBE/WBEs who could perform on the contract.

**MWBOO will evaluate all of the detailed efforts in determining if the bidder has exercised good faith efforts.**

SUBCONTRACTOR UTILIZATION FORM

**THIS FORM MUST BE INCLUDED WITH REQUEST FOR FINAL PAYMENT**

Prime Contractor's Name: \_\_\_\_\_

Contract Number and Title: \_\_\_\_\_

Total Contract Dollar Amount: \_\_\_\_\_

**Provide the following information for EACH and EVERY subcontractor, both MBE/WBE and NON-MBE/WBE used on this contract. (Make additional copies of this form as needed).**

Name of Subcontractor	Goods or services provided on subcontract
Race/ethnicity AND gender of subcontractor's owner	Dollar amount of subcontract
Dollar amount paid to date	If amount paid to date is less than subcontract dollar amount, explain why.

Name of Subcontractor	Goods or services provided on subcontract
Race/ethnicity AND gender of subcontractor's owner	Dollar amount of subcontract
Dollar amount paid to date	If amount paid to date is less than subcontract dollar amount, explain why.

\_\_\_\_\_  
Prime Contractor's Signature

\_\_\_\_\_  
Date

H. **MAYOR AND CITY COUNCIL OF BALTIMORE, MARYLAND**

**THE BALTIMORE APPRENTICE TRAINEE PROGRAM (BATP)**

**BID FORM**

Contracting Agency **DEPARTMENT OF GENERAL SERVICES**

Contract (Project Title) **GS21822 - NORTHWEST COMMUNITY ACTION CENTER -  
LOWER PARK HEIGHTS - RENOVATIONS**

Scheduled Bid Due Date: **Wednesday, December 13, 2023**

THIS APPRENTICE TRAINEE FORM IS DUE WITH THE BID.

FOR MORE INFORMATION ABOUT THIS FORM OR ASSISTANCE, CONTACT:

Minority and Women's Business Opportunity Office (MWBOO)  
100 N. Holliday Street, Rm. 101  
Baltimore, MD 21202  
(410) 396-4355

MWBOO (12/00)

**MAYOR AND CITY COUNCIL OF BALTIMORE, MARYLAND**  
**THE BALTIMORE APPRENTICE TRAINEE PROGRAM (BATP)**

**PART I.**

The City of Baltimore has established an Apprenticeship Trainee Program which requires all bidders on City Construction Projects costing \$1,000,000.00 dollars or more to participate in an Apprenticeship/OJT Training Program certified by the State of Maryland.

Training and upgrading of minorities and women toward journeyman status is a primary objective of this Training Provision. The purpose for this objective is to insure a pool of qualified minorities and women to replace those journeymen who, in the natural course of events will leave the workforce.

The bidder, shall commit to use its best efforts to meet the BATP requirements set forth in these contract documents. If awarded this contract, the bidder shall notify each firm with which the bidder proposes to contract, of the BATP requirements and make these requirements a material part of the subcontract where appropriate.

The bidder hereby designates:

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

PHONE # \_\_\_\_\_

as the person who has been charged by the bidder with the responsibility for carrying out and reporting the bidders compliance with this program.



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1. The Bidder shall use its best efforts to comply with the BAT Program requirements set forth in these contract documents. Failure to implement and carry out the BAT Program requirements set forth in these contract documents shall be a material breach of this contract and grounds for termination of the contract.

2. The contractor shall prepare and submit to the contracting agency a plan for apprentice participation together with the construction schedule. The agency engineer shall designate the number of trainees and hours to be utilized and the area in which the trainees are to be required.

A. The draft construction schedule submitted to the contracting agency shall include a copy of the state certified apprentice/ojt program in which the bidder is participating, required labor resources by trade in order to determine the availability of apprentice opportunities, and a trade breakdown of anticipated participation by apprentices. The construction schedule and any updates shall include the apprentice participation by trade.

B. Apprentice participation shall be distributed throughout each technical discipline or trade designated by the engineer.

C. The contracting agency will review and approve the apprenticeship participation plan and forward a copy of the approved plan to MWBOO.

D. Goals for trainees will be based on the contractor's current utilization (Exhibit I in the contract document) and the availability of minorities and females in specified trade areas as indicated in the publication of the Maryland Department of Labor, Licensing and Regulation, Office of Labor Market Analysis and Information.

E. The specific efforts proposed to be undertaken by the contractor or its subcontractors if additional efforts are required to implement the BAT Program.

F. With each progress payment request, the contractor shall submit a BAT Program Report (AA2A) and a written projection for the following month of Apprentice hourly participation by trade.

G. The BAT Program participation plans shall apply to all change orders and extra work orders.

H. Requests for modifications or amendments of the contractors must be submitted to the contracting agency with copies to MWBOO.

The contractor will receive a written response to the request.

**PART II. AFFIDAVIT**

The undersigned, being first duly sworn, on oath states to the City of Baltimore on behalf of the bidder as follows:

- 1. The bidder gives assurance that it will provide opportunity for training and employment for minorities and women in apprenticeship positions, and other positions whether with the bidder or subcontractors, employed on the project.
- 2. The bidder gives assurance that it will use its best efforts to comply with the BAT Program.
- 3. The bidder will maintain records in an easily retrievable and understandable form that will document any and all openings and opportunities for apprentice/trainee and, where appropriate, will make these requirements a part of all subcontract agreements on this project.
- 4. Bidder acknowledges that any and all bids which fail to include this form duly executed and notarized with the M/WBE portion of the bid documents may be declared as non-responsive by the Baltimore City Board of Estimates.
- 5. The bidder agrees to submit all forms as required in Part I & III of this document.

\_\_\_\_\_  
Name of Bidder

\_\_\_\_\_  
Name of Project Contract

By \_\_\_\_\_

Title \_\_\_\_\_

Date \_\_\_\_\_

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I hereby certify that on this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me the subscriber, a Notary Public of the State of \_\_\_\_\_, in and for \_\_\_\_\_  
\_\_\_\_\_ City or County, personally appeared \_\_\_\_\_ who  
acknowledged himself-herself to be the (title) \_\_\_\_\_ of  
(company) \_\_\_\_\_ and being  
duly authorized, executed the foregoing affidavit for the purposes and uses therein contained.

\_\_\_\_\_  
Signature of Notary Public

\_\_\_\_\_  
My Appointment Expires (SEAL)

## THE BALTIMORE APPRENTICE TRAINEE PROGRAM (BATP)

### INSTRUCTIONS

#### Part III

##### I. Advertisement for Construction Bids (Contracting Agency)

All bid advertisements for construction projects where the cost is estimated to be \$ 1,000,000.00 or more shall include the following language:

"The City of Baltimore has established an apprentice participation program requirement for this contract."

##### II. Bid Documents

All bid documents where the cost of the bid is estimated to be \$1,000,000.00 or more shall include the BATP BID FORM unless otherwise determined by the agency engineer.  
The BATP Bid Form Must Be Submitted With the Bid.

##### III. Pre-Bid Conference

If there is a pre-bid conference, an MWBOO Compliance Representative shall be present to discuss the BAT Program.

##### IV. The following forms must be submitted as indicated.

A. The Plan for the Apprenticeship Participation must be completed and submitted for each area of training as designated by the agency engineer before the notice to proceed is issued.

B. The Maryland Apprenticeship Agreement forms must be submitted with each Progress Payment request to the contracting agency or as new trainees are hired.

C. With each progress payment request, the prime contractor must submit the MWBOO AA2 and AA2A to the contracting agency.

D. If an apprentice is terminated, the contracting agency shall be informed within 10 working days. A new Apprentice Agreement form on the replacement trainee should be attached.

E. MWBOO forms AA1 and 1A shall be submitted semi-annually on June 30<sup>th</sup> and December 31<sup>st</sup> of each year to the contracting agency.

**ATTACHMENT**

## V. Penalties and Sanctions

A. A determination by the Board of Estimates after recommendation by the Minority and Women's Business Opportunity Office (MWBOO) that the contractor has failed to comply with any portion of the BATP rules as herein provided and described, or its approved apprenticeship plan, shall subject the offending party to any or all of the following:

1. suspension of contract;
2. withholding of funds;
3. rescission of contract based upon a material breach of contract;
4. disqualification of a bidder, contractor for a period of not to exceed two years;
5. payment of liquidated damages.

B. Violation; disqualification. It is a violation of this program to:

1. Willfully falsify, conceal or cover up by a trick, scheme or device a material fact, or make any false, fictitious or fraudulent statements or representations or make use of any false, fictitious or fraudulent statement or entry.
2. Willfully obstruct, impede, or attempt to obstruct or impede any authorized official or employee who is investigating the validity of any activity under the BATP

**BALTIMORE APPRENTICE TRAINEE PROGRAM  
TRAINEE REVIEW**

PROJECT NUMBER: GS21822 DATE: \_\_\_\_\_  
 PROJECT NAME: NORTHWEST COMMUNITY ACTION CENTER - LOWER PARK HEIGHTS - RENOVATIONS  
 CONTRACTOR: \_\_\_\_\_

TRAINEE'S SUPERVISOR: \_\_\_\_\_  
 CONTRACTOR'S EEO OFFICER: \_\_\_\_\_

Name	Race	Classification	Rqd. Prog. Hrs.	Actual Training for the Month	Actual Training Hours to Date	Min. Rate	Pres. Rate	Jrnymn. Rate
1. _____	_____	_____	_____	_____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____	_____	_____	_____	_____
7. _____	_____	_____	_____	_____	_____	_____	_____	_____
8. _____	_____	_____	_____	_____	_____	_____	_____	_____
9. _____	_____	_____	_____	_____	_____	_____	_____	_____

MWBOO (AA2)

12/00

To Be Submitted With Each  
 Payout Request by the Subcontractor  
 to the Prime Contractor

Signed: \_\_\_\_\_

Date: \_\_\_\_\_

CITY OF BALTIMORE																					
SEMI ANNUAL TRAINEE REPORT																					
ADMINISTRATION CENTER		PERIOD ENDING						LEGEND BA – BLACK AMERICAN AMERICAN						AI – AMERICAN INDIAN HA – HISPANIC AMERICAN			AA – ASIAN				
LINE NO	TRAINING CLASSIFICATION A	NUMBER RECEIVING TRAINING DURING REPORT PERIOD B						NUMBER STARTING TRAINING DURING REPORT PERIOD C						NUMBER COMPLETING TRAINING DURING REPORT PERIOD D						TOTAL HRS OF TRAINING DURING PERIOD	
		TOTAL	BA	AA	AI	HA	O	TOTAL	BA	AA	AI	HA	O	TOTAL	BA	AA	AI	HA	O	TOTAL	
03	EQUIPMENT OPERATOR																				
04	MECHANICS																				
05	TRUCK DRIVERS																				
06	IRON WORKERS																				
07	CARPENTERS																				
08	CEMENT MASONS																				
09	ELECTRICIANS																				
10	PIPEFITTERS																				
11	PAINTERS																				
12	OTHER SKILLS																				
13	<b>TOTAL</b>																				
14	NUMBER OF FEMALES RECEIVING TRAINING		NUMBER OF FEMALES STARTING TRAINING						NUMBER OF FEMALES COMPLETING TRAINING												
	NUMBER OF NEW HIRES RECEIVING TRAINING		NUMBER IN APPRENTICESHIP TRAINING						NUMBER OF TERMINATIONS PRIOR TO COMPLETION OF TRAINING												
	NUMBER OF UPGRADES RECEIVING TRAINING		NUMBER IN OTHER JOB TRAINING						NUMBER OF PROJECTS UNDER WAY DURING REPORTING PERIOD AND CONTAINING TRAINING SPECIAL PROVISIONS												
COMMENTS:																					
REPORT PREPARED BY (SIGNATURE) AND TITLE OF CITY OFFICIAL															DATE			AA1			

**CONTRACT NO:** GS21822      **TRAINEE'S NAME:** \_\_\_\_\_  
**PROJECT NAME:** **NORTHWEST COMMUNITY ACTION CENTER - LOWER PARK HEIGHTS - RENOVATIONS**

**START DATE:** \_\_\_\_\_  
**SUBCONTRACTOR:** \_\_\_\_\_ **WAGE RATE:** \_\_\_\_\_

MONTH	YEAR	PHASES											
DATE	DAILY TOTAL												
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
MONTHLY TOTAL													
PREV. TOTAL													
GRAND TOTAL													
REQ'D HOURS													

CERTIFIED CORRECT BY \_\_\_\_\_ DATE: \_\_\_\_\_  
 INSTRUCTOR'S COMMENTS:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 DISTRIBUTION: Original Project Engineer:  
 MWBOO (AA2A)

REVIEWED BY:  
 CITY OF BALTIMORE  
 \_\_\_\_\_  
 SIGNATURE  
 \_\_\_\_\_  
 DATE



BALTIMORE APPRENTICE TRAINEE PROGRAM CONTRACTOR'S SEMIANNUAL TRAINEE REPORT	PROJECT NO <b>GS21822</b>
	PROJECT NAME <b>NORTHWEST COMMUNITY ACTION CENTER - LOWER PARK HEIGHTS - RENOVATIONS</b>

INSTRUCTIONS - This report is to be completed by the contractor semiannually for each individual employed on this contract (including any subcontractor under it) who has received training during the reporting period under the training special provisions (a part of the contract proposal). The report is to be submitted by the 10th of the month following the reporting period (July 10, and January 10). The original of this report is to be furnished to the trainer and two copies submitted to the City of Baltimore

1. NAME OF CONTRACTOR NAME OF SUBCONTRACTOR (IF APPLICABLE)		1.A. ADDRESS
2. NAME OF TRAINEE	2A. SEX (check one) <input type="checkbox"/> M <input type="checkbox"/> F	2.B. ADDRESS
3. AGE OF TRAINEE	4. SOCIAL SECURITY NO.	5. EMPLOYEE STATUS (check one) <input type="checkbox"/> NEW HIRE <input type="checkbox"/> UP-GRADE
6. ETHNIC GROUP DESIGNATION (check one) <input type="checkbox"/> Black American <input type="checkbox"/> Hispanic American <input type="checkbox"/> American Indian <input type="checkbox"/> Asian American <input type="checkbox"/> White		

7. SUMMARY OF PREVIOUS TRAINING (ENTER AMOUNT AND TYPE OF TRAINING RECEIVED BY TRAINEE ON OTHER CONTRACTS UNDER APPROVED TRAINING PROGRAMS)

8. JOB CLASSIFICATION OF TRAINEE	9. DATE TRAINING STARTED ON THIS CONTRACT	10. TYPE OF ON THE JOB TRAINING (Check one) <input type="checkbox"/> Apprenticeship <input type="checkbox"/> Other
----------------------------------	---	---

**REPORTING PERIODS**

INSTRUCTIONS: One vertical column is to be completed for each succeeding reporting period and the form submitted. Enter June 30, Dec. 30, as applicable in

HOURS OF TRAINING DATA								
11. PROVIDED DURING REPORT PERIOD								
12. PROVIDED TO DATE								
13. REMAINING TO COMPLETE THE APPROVED PROGRAM								
14. TERMINATION (IF TRAINING WAS TERMINATED PRIOR TO COMPLETION OF APPROVED PROGRAM EXPLAIN REASON FOR TERMINATION)								
15 REPORT PREPARED BY (SIGNATURE AND TITLE OF CONTRACTOR'S REPRESENTATIVE)							16 DATE	
17 REPORT REVIEWED BY (SIGNATURE AND TITLE OF CITY OF BALTIMORE OFFICIAL)							18 DATE	

MWBOO (1A)

I. **BALTIMORE CITY'S YOUTHWORKS PROGRAM**

TO: Mayor's Office of Employment Development ("MOED")

FROM: \_\_\_\_\_

(Legal name of Bidder)

Pursuant to Executive Order, the aforesaid Bidder hereby presents MOED with the following information to assist its outreach efforts for the Baltimore City YouthWorks Program:

Contact Person: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone Number: \_\_\_\_\_

Facsimile Number: \_\_\_\_\_

E-mail address: \_\_\_\_\_



## **J. EMPLOY BALTIMORE**

***Employ Baltimore*** is designed to create opportunities for businesses that receive municipal contracts to access qualified City residents to meet their workforce needs. The initiative will also ensure that City dollars contribute to the local economy and improve the lives of employable Baltimoreans.

***Employ Baltimore*** meets the business development need by helping employers save time and money in the recruitment process. This service also offers businesses customized training resources that build worker pipelines for hard-to-fill job vacancies, and provides easy access to tax credit programs that support investments in the City's growth. Every year, hundreds of area employers utilize the Mayor's Office of Employment Development's resources to assist their expansion efforts. We look forward to serving you also.

**Employ Baltimore**

**Requirements**

1. Complete the *Employ Baltimore* "Certification Statement" contained in the bid document and submit it with your bid package.
2. Contact the Mayor's Office of Employment Development (MOED) within two (2) weeks of receiving the contract award to schedule a meeting. At this meeting MOED will review your workforce/employment plan; explain the employment report requirements and discuss other workforce services available. You will not receive your first payment from the contract until MOED verifies with the contracting city agency that the meeting has been scheduled.
3. Should the workforce plan indicate a need to fill new jobs, the company will agree to post these positions through MOED and its One Stop Career Center network for a period of seven (7) days prior to publicly advertising the openings. This will enable MOED to identify and refer qualified city residents as candidates for these job opportunities.
4. Complete the "Employment Reports" as required on June 30<sup>th</sup> and December 31<sup>st</sup> during each year of the contract and at contract completion. Submit "Employment Reports" to:

**Employ Baltimore  
Mayor's Office of Employment  
Development  
3001 East Madison Street  
Baltimore, Maryland 21205**

- Or -

[employbaltimore@oedworks.com](mailto:employbaltimore@oedworks.com)

The City will not release a final payment or any retainage held by the City until MOED verifies that the Employment Reports have been submitted.

5. Businesses awarded construction contracts that fully participate in the Employ Baltimore program and comply with the conditions listed in the certification statement may receive an early release or reduction in the retainage fee assigned to the contract.

To Schedule Your Meeting with MOED Please Contact:

**Rosalind Howard  
Employ Baltimore  
Mayor's Office of Employment Development  
3001 East Madison Street  
Baltimore, Maryland 21205  
Phone 443-984-3014 • Fax 410-361-9648  
[rhoward@oedworks.com](mailto:rhoward@oedworks.com)**

- Or -

[employbaltimore@oedworks.com](mailto:employbaltimore@oedworks.com)

**Employ Baltimore**

**CERTIFICATION STATEMENT**

<b>Contracting City Agency</b>	<b>Bid Number</b>	<b>Bid Due Date</b>
<b>Dept. Of General Services</b>		

To promote the commitment to utilize **Employ Baltimore** to meet employment needs, all businesses awarded contracts, franchises and development opportunities with the City of Baltimore, shall comply with the terms of the Executive Order as described in the bid specification. Under this agreement, contract awardees will complete and submit the certification statement with the bid package.

This Executive Order shall apply to contracts awarded by the City that are in the amounts of \$50,000.01 to \$300,000.00, except for professional service contracts and emergency contracts.

Additionally, companies awarded construction contracts that fully participate in the **Employ Baltimore** program and submit and comply with the certification statement, may receive an early release of or reduction in the retainage fee assigned to the contract.

**CERTIFICATION STATEMENT**

As a representative of \_\_\_\_\_, I \_\_\_\_\_  
 (NAME OF COMPANY) (PRINT NAME AND TITLE)

Certify that a company representative will schedule a meeting with the Mayor’s Office of Employment Development within two weeks of contract award to review the workforce plan required for this contract.

If there is a need for additional employees, I agree to post the new job openings with MOED’s One Stop Career Center Network for seven (7) days prior to publicly advertising these openings. I agree to interview qualified Baltimore City residents referred from MOED. I agree to submit an Employment Report on June 30<sup>th</sup> and December 31<sup>st</sup> identifying the total number of workers on this project and the total number of Baltimore City residents on payroll during each year of the contract and at the contract completion as a condition of release of the final payment of any retainage due.

Name: \_\_\_\_\_ Telephone: \_\_\_\_\_

Company Address: \_\_\_\_\_ Email: \_\_\_\_\_

**Send to: Rosalind Howard**  
**Employ Baltimore/ Mayor’s Office of Employment Development**  
**3001 East Madison Street**  
**Baltimore, Maryland 21205**  
**Phone 443-984-3024 . Fax 410-361-9648**  
[employbaltiore@oedworks.com](mailto:employbaltiore@oedworks.com)

***Employ Baltimore***

**EMPLOYMENT REPORT**

<b>Contracting City Agency</b>	<b>Bid/Contract Number &amp; Name</b>
<b>Dept. of General Services</b>	Contract No. GS21822 - NORTHWEST COMMUNITY ACTION CENTER - LOWER PARK HEIGHTS - RENOVATIONS
<b>Contract Start Date</b>	<b>Contract End Date</b>

To promote the commitment to utilize the *Employ Baltimore Executive Order* and to meet workforce needs, all businesses awarded contracts, franchises and development opportunities with the City of Baltimore, shall comply with the terms of the Executive Order as described in the bid package. Under this Executive Order, contract awardees will complete and submit this Employment Report on June 30<sup>th</sup> and December 31<sup>st</sup> during each year of the contract and at contract completion. You must identify the number of total workers and the number of Baltimore City residents on payroll for this contract. Also, please indicate any new positions created as a result of the award and filled by Baltimore City residents. Employment Reports should be sent to:

**Employ Baltimore  
 Mayor’s Office of Employment Development  
 3001 East Madison Street  
 Baltimore, Maryland 21205**

- Or email -

[employbaltimore@oedworks.com](mailto:employbaltimore@oedworks.com)

The Employment Report below is hereby submitted by the undersigned for this period:

\_\_\_December 31, 20\_\_\_      \_\_\_June 30, 20\_\_\_      \_\_\_End of Contract Date\_\_\_\_\_

No. of total workers on payroll for this contract	
No. of Baltimore City residents on payroll for this contract	
No. of new positions filled by Baltimore City residents	

Name: \_\_\_\_\_ Signature: \_\_\_\_\_

Title: \_\_\_\_\_ Date: \_\_\_\_\_



**The Mayor's Office of Employment Development** provides businesses with a pipeline of qualified, skilled job candidates and supports businesses in retaining and developing their employees. We offer customized workforce solutions including outreach and recruitment, applicant prescreening, assessment and testing services, tax credit information, human resources support and training funds for new or existing employees. Training funds are available through several strategies.

### **Hiring new employees?**

**Customized Training** is a business-driven strategy that helps companies train and hire people to fit their job-specific needs. MOED Business Services staff recruit and pre-screen applicants based on the company requirements. Your business saves on recruitment costs and could receive up to 50% reimbursement on costs associated with the required training. The positions must be full-time and meet minimum salary requirements. The training can be employer-based, on-the-job, or offered by qualified vendors. Companies awarded Customized Training grants must agree to hire successful trainees. Many companies have used this strategy to increase their workforce and reduce their hiring budget.

### **Want to improve and increase the skills of your current staff?**

#### **Incumbent Worker training**

**MOED** works closely with other local, state and federal agencies to promote the link between the city's workforce and economic development initiatives.

#### **For Further Information Contact:**

Rosalind Howard or Susan Tagliaferro  
 Employ Baltimore  
 Mayor's Office of Employment Development  
 3001 East Madison Street  
 Baltimore, Maryland 21205  
 Phone 443-984-3014 • Fax 410-361-9648  
[rhoward@oedworks.com](mailto:rhoward@oedworks.com) [stagliaferro@oedworks.com](mailto:stagliaferro@oedworks.com)  
[employbaltimore@oedworks.com](mailto:employbaltimore@oedworks.com)

**K. LOCAL HIRING LAW****Rules and Regulations**

1. The Local Hiring Law (Council Bill 12-0159) (the "Law") is applicable to all City contracts that are greater than \$ 300,000.00, or agreements authorizing assistance that are within the terms of §27-2 of the Law executed by the City on or after the Law's effective date, December 23, 2013. The Law requires compliance by vendors/contractors and their subcontractors regardless of the subcontractor award amount and by all persons benefitting from an agreement involving more than \$ 5,000,000.00 in assistance for a City subsidized project.
2. The Law only applies to the original term of contract awards greater than \$ 300,000.00. Extra Work Orders and contract modifications do not affect the applicability of the Law. Whether a City subsidized project is subject to the Law shall be finally determined when an agreement authorizing assistance valued at more than \$5,000,000.00 is executed by the City.
3. Any contract that was originally subject to the Employ Baltimore Executive Order and the dollar amount of the contract increases to over 300K, will become subject to the Local Hiring Law.
4. All City bids, RFP's and requests for bid packages and final contracts must include reference to the requirements of the Law. All bid documents and contracts subject to the Law will include a section referencing the requirements of the Law. The bidder's signature will verify a commitment to abide by the Law.
5. Upon contract award or approval of an agreement for subsidy covered by the Law, the contracting city agencies or agencies entering into an agreement for the City subsidized project must immediately complete the Mayor's Office of Employment Development (MOED) Vendor Contact form, providing contact information for each vendor/contract awarded and each beneficiary of a qualifying City subsidized project. MOED will contact the vendor or beneficiary upon receipt of the completed form from the city agency.
6. Within two weeks of the contract award or agreement for a City subsidized project covered by the Law, the awardee must work with a representative of the Mayor's Office of Employment Development (MOED) to complete an Employment Analysis that will project the total workforce and the "new hires" in the Baltimore area needed to fulfill the contract/agreement. That Analysis shall include all information reasonably required by MOED showing at a minimum general locations (Baltimore area or not) of all workforce positions required to complete the contract/agreement.
7. Vendors who report that they do not have any "employees" needed for the contract" at the initial workforce meeting or on the required monthly Employment Report form must meet with the City Agency to discuss how the work is getting done and how the funding is being utilized.



8. A Local Hiring Review Committee (“LHRC”) will be established. The LHRC will be comprised of representatives/designees from the following:

- Office of the City Council President
- Office of the Deputy Chief of Economic Development and Neighborhoods
- Mayor’s Office of Employment Development
- Office of the Director of Finance
- Baltimore City’s Procurement Office – Bureau of purchases
- Baltimore City Department of Transportation
- Baltimore City Department of Public Works
- Baltimore City Department of General Services
- Baltimore Development Corporation
- Baltimore City Law Department
- Community Resident to be appointed by the President of the City Council

The LHRC will appoint a chair and meet no less than quarterly and as frequently as needed. Its primary role will be to review the monthly Employment Reports and to make recommendations to MOED regarding the approval or denial of any waiver requests made. The LHRC will also recommend to the Board of Estimates potential penalties and debarment for persons and others subject to the Law that has not complied with the Law. MOED will coordinate the materials to be presented to the LHRC and provide it with administrative staff support.

9. Vendors and others subject to the Law must submit Monthly Employment Reports by the fifth business day of the month for the preceding month beginning no later than 90 days after the Board of Estimates has awarded the contract or approved the agreement. City agency directors will be notified of persons or others subject to the Law that do not submit reports by the due date; continued delinquent persons or others subject to the Law will be reported to the LHRC.

10. Vendors and others subject to the Law that have binding collective bargaining agreements with unions will be granted a waiver from only utilizing MOED recruitment services, since they are bound by union regulations to utilize union halls. However, the persons or others subject to the Law must still meet the 51% residency requirement on new hires and must submit the monthly Employment Reports as required by the Law.

11. If MOED cannot fill a job posting provided by a vendor or others subject to the Law within the seven day period, the person or others subject to the Law must still meet the 51% residency requirement on new hires. This requirement will only be waived if : 1) the person or others subject to the Law requests a waiver in writing and can provide documentation that they made good faith efforts in the form of job posting and other recruitment methods and that there were insufficient qualified applicants to fill the available new positions or ; 2) the bidder is able to confirm in the bid process that the contract will be only for services that will be performed or for

products that will be manufactured outside the Baltimore Metropolitan Area and as such, no new positions will be called for in Baltimore area.

12. The Law is not applicable to a contract or an agreement that is made by the City, or on its behalf with any person in the event of an emergency pursuant to Article VI, § 11 (e)(ii) of the Baltimore City Charter.

13. Definitions:

a. *Good Faith Effort* is defined as a set of activities conducted by the contractor/vendor or other person which demonstrate multiple types of outreach efforts have been made to City residents including, but not limited to: ads in local papers, paid local job boards, information to local educational and workforce organizations, as well as an objective review and rating of resumes of city residents. (§ 27-6 (B) (1))

b. *Substantially below appraised value* is the sale or transfer of land applicable to property that has been approved and sold for an amount below 30% of the appraised value. (§ 27-1 (C) (1))

c. *“Satisfactory Special Workforce Development Training or Placement Arrangement”* is defined as a written agreement with MOED or a recognized workforce partner for a customized training or On-The-Job-Training opportunity leading to unsubsidized employment. (§27-6(B) (3))

## LOCAL HIRING

Article 5, Subtitle 27 of the Baltimore City Code, as amended (the "Local Hiring Law") and its rules and regulations apply to contracts and agreements executed by the City on or after the Local Hiring Law's effective date of December 23, 2013. The requirements for the Local Hiring Law are summarized below:

A. The Local Hiring Law applies to every contract for more than \$300,000 made by the City, or on its behalf, with any person. It also applies to every agreement authorizing assistance valued at more than \$5,000,000 to a City-subsidized project. Unless the Mayor's Office of Employment Development ("MOED") grants an exception under the Local Hiring Law, at least 51% of the new jobs required to complete the contract or project must be filled by Baltimore City residents.

B. Within two (2) weeks of the Board of Estimate's award of the contract or approval of the agreement, the contractor shall have a meeting, either in person or via telephone, with MOED to complete an employment analysis and review the workforce plan required for such contract or agreement. The contractor will not receive any payments under the contract or agreement, unless and until the employment analysis is performed. Contact information for MOED can be found on its website: [www.oedworks.com](http://www.oedworks.com).

C. Should the contractor's workforce plan indicate a need to fill new jobs, the contractor shall post the new job openings with MOED's One Stop Career Center Network for a period of seven (7) days prior to its publicly advertising these openings. Further, the contractor shall interview qualified Baltimore City residents referred from MOED; and unless granted an exception, fill at least fifty-one percent (51%) of the new jobs required to complete the contract or project with Baltimore City residents.

D. For all contracts subject to the Local Hiring Law, the contractor shall submit an Employment Report to MOED by the fifth (5<sup>th</sup>) day of each month throughout the duration of the contract or agreement, regardless of whether MOED has granted a waiver of any of the Local Hiring Law's requirements.



**City of Baltimore  
Local Hiring Certification and Compliance Statement**

**CERTIFICATION STATEMENT (Complete and submit this certification statement with your bid package. Your bid may be considered non-responsive if you fail to include this signed document)**

For the purpose of requiring employers (contractors and their subcontractors) benefitted by City contracts and subsidies to take measures to hire Baltimore City residents, all businesses awarded a contract with the City for more than \$300,000 or will benefit from more than \$5,000,000 in assistance for a subsidized project, shall agree to comply with the terms of the Local Hiring Law 12-0159 as described in the bid specification.

By signing below as a representative of \_\_\_\_\_(Company Name), I certify that if awarded this contract, a company representative will meet with the Mayor's Office of Employment Development (MOED) within two weeks of the contract award to complete an employment analysis review the workforce plan required for this contract. If there is a need for new hires, I agree to post the new job openings with MOED's One Stop Career Center Network for a period of seven (7) days prior to publicly advertising these openings. I agree to interview qualified Baltimore City residents referred from MOED and to fill at least 51% of the new jobs required with Baltimore City residents. I also agree to submit an Employment Report by the 5<sup>th</sup> day of each month throughout the duration of contract.

Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Phone: \_\_\_\_\_

Company Address: \_\_\_\_\_ Email: \_\_\_\_\_

**CONTRACT AWARD INFORMATION (To be completed by the responsible Baltimore City agency representative and submitted to MOED within two (2) business days of the contract award.)**

Baltimore City Agency: \_\_\_\_\_

Contract No./Description: \_\_\_\_\_

Award Amount: \_\_\_\_\_ Award Date: \_\_\_\_\_

Contractor's Rep for Local Hiring compliance: \_\_\_\_\_

Telephone #: \_\_\_\_\_ Email: \_\_\_\_\_

City Agency Staff Name/Title	Date

**COMPLIANCE VERIFICATION (To be completed by MOED and returned to the City agency.)**

As required by the Law, "before the disbursement of any funds", the beneficiary must meet with and complete an employment analysis with MOED. This is to certify that the information below is accurate as verified by MOED:

- Complied with the requirements of the Local Hiring Law 12-0159 and met with MOED on \_\_\_\_\_ to assess their employment needs, complete the workforce plan and identify new jobs. We have been informed that an estimate of \_\_\_\_\_ jobs will be created as a result of the contract award.
- NOT** complied with the Local Hiring Law. In accordance with the Law, the City Agency is required to withhold payments associated with this award until the meeting has occurred.

MOED Staff Name/Title	Date

If there are any questions, please call Rosalind Howard at 410-396-9045

**L. BID BOND**

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned \_\_\_\_\_

\_\_\_\_\_

as Principal, and \_\_\_\_\_

as Surety, are hereby held and firmly bound unto the Mayor and City Council of Baltimore as Owner, in the amount of at least Two Percent (2%) of the Total Bid submitted for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, personal representatives, successors and assigns. Signed this

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

The condition of the above obligation is such that WHEREAS the Principal has submitted to the Board of Estimates of the Mayor and City Council of Baltimore a certain Bid, attached hereto, and hereby made a part hereof to enter into a Contract, in writing, for **CONTRACT NO. GS21822 – NORTHWEST COMMUNITY ACTION CENTER - LOWER PARK HEIGHTS - RENOVATIONS**

NOW, THEREFORE,

- (a) If said Bid shall be rejected or in the alternate.
- (b) If said Bid shall be accepted and the Principal shall execute and deliver a Contract in the form of Contract attached here to (properly completed in accordance with said Bid), and shall furnish a bond for his faithful performance of said Contract, and for the payment of all persons performing labor or furnishing materials in connection therewith and shall in all other respects perform the Agreement created by the acceptance of said bid.

Then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall in no event, exceed the penal amount of this obligation, as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by an extension of the time within which the Owner may accept such Bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their Hand and Seals, and such of them as are Corporation have caused their Corporate Seals to be hereto affixed and these presents to be signed by their proper Officers, the day and year first set forth above.

ATTEST:

PRINCIPAL

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ (SEAL)

ATTEST:

SURETY

\_\_\_\_\_

\_\_\_\_\_ (SEAL)

END OF SECTION

**SECTION 00500  
AGREEMENT**

THIS AGREEMENT, made this \_\_\_\_\_ Day of \_\_\_\_\_  
in the year 20\_\_\_\_, by and between \_\_\_\_\_

hereinafter called the "Contractor", and the Mayor and City Council of Baltimore, a  
Municipal Corporation, hereinafter called the "City", for Contract No. **GS21822 -**  
**NORTHWEST COMMUNITY ACTION CENTER - LOWER PARK HEIGHTS -**  
**RENOVATIONS**

WHEREAS, the Contract designated as to be performed in strict accordance with the Contract Documents, which Standard Specifications, Plans and other Contract Documents are in all respects made a part hereof, has recently been awarded to the Contractor by the City, through the Agency of its Board of Estimates, at and for a sum equal to the aggregate cost of the work, labor, materials and supplies done or furnished at the prices and rates respectively named therefore in the Proposal attached hereto; and

WHEREAS, it was one of the conditions of said award that a formal Contract should be executed by and between the Contractor and the City evidencing the terms of said award.

NOW, THEREFORE, THIS AGREEMENT WITNESSETH, That the Contractor doth hereby covenant and agree with the City that it will well and faithfully construct, and complete the said Work in accordance with each and every one of the conditions, covenants, stipulations, terms and provisions contained in the Contract Documents, at and for a sum equal to the aggregate cost of the work, labor, materials and supplies done or furnished at the prices and rates respectively named therefore in the Proposal attached hereto, and will well and faithfully comply with and conform to each and every obligation imposed upon it by the Contract Documents, or by the terms of said award. Time is of the essence of this Agreement.

And the City doth hereby covenant and agree with the Contractor that it will pay the Contractor, when due and payable under the terms of the Contract Documents and of said award, the above mentioned sum; and that it will well and faithfully comply with and perform each and every obligation imposed upon it by the Contract Documents or by the terms of said award.

In WITNESS WHEREOF, Said \_\_\_\_\_  
has caused this Agreement to be signed in its name by its President/Vice President and its  
Corporate Seal to be hereunto and duly attached and the City has caused these presents to be  
signed by the Mayor of Baltimore City and the Corporate Seal of the City to be hereunto affixed,  
duly attested by the Custodian of the City Seal.

ATTEST:

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
PRINT NAME AND TITLE (SEAL)

ATTEST:

Mayor and City Council of Baltimore

\_\_\_\_\_  
Custodian of the City Seal

By: \_\_\_\_\_  
BRANDON M. SCOTT, MAYOR

APPROVAL OF AGREEMENT  
FOR  
DEPARTMENT OF GENERAL SERVICES  
CONTRACT NO. **GS21822**

APPROVED AS TO FORM AND  
LEGAL SUFFICIENCY:

\_\_\_\_\_  
Chief Solicitor

APPROVED:

APPROVED:

\_\_\_\_\_  
Chief, Capital Projects Division

\_\_\_\_\_  
Director of General Services



**SECTION 00610**

**PERFORMANCE BOND**

Principal	Business Address of Principal
Surety a Corporation of the State of  and authorized to do business in the State of Maryland	Obligee Mayor and City Council of Baltimore

Sum of Bond (Equal to Contract Price)  
 SUM OF \_\_\_\_\_ Dollars  
 (\$ \_\_\_\_\_ )

Contract Number and Identification City of Baltimore Department of General Services  <b>Contract No. GS21822 - NORTHWEST          COMMUNITY ACTION CENTER - LOWER PARK          HEIGHTS - RENOVATIONS</b>	Date of Contract _____, <u>20</u>  Date Bond Executed _____, <u>20</u>
---	--

KNOW ALL MEN BY THESE PRESENTS, That we, the PRINCIPAL above named and SURETY above named, are held and firmly bound unto the OBLIGEE above named in the full and just sum of the amount stated above, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, personal representatives, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the PRINCIPAL is entering into a certain Contract with the OBLIGEE described and dated, as shown above and attached hereto, and is required under the Provisions of the Public General Laws of Maryland to give a bond conditioned as hereinafter set forth.

NOW THEREFORE, if the PRINCIPAL shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions and agreements of said Contract during the original term of said Contract and any extensions thereof that may be granted by the OBLIGEE, with or without notice to the SURETY, and during the term or terms of any maintenance, repair, guaranty and warranty required under the Contract, and

**PERFORMANCE BOND**

shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions and agreements of any and all duly authorized modifications of said Contract that may hereafter be made, notice of which modifications to the SURETY being hereby waived, and shall indemnify and save harmless the Mayor and City Council of Baltimore, its agents and employees against and from all costs, expenses, damages, injury or loss to which the said Mayor and City Council of Baltimore, its agents and employees, may be subjected by reason of any wrongdoing, misconduct, want of care or skill, negligence or default on the part of said PRINCIPAL, its agents or employees, or in any manner arising directly or indirectly from any and all causes whatsoever, in or about the execution or performance of the Contract, during the Original term of said Contract and/or any authorized extension or modification thereof and/or during the term or terms of any maintenance, repair, guaranty and warranty required under the Contract, then this obligation shall be null and void; otherwise to remain in full force and effect.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the OBLIGEE, or the successors or assigns of OBLIGEE.

IN WITNESS WHEREOF, the above bounden parties have executed this instrument under their several Seals on the date indicated above, the Name and corporation seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

\_\_\_\_\_  
ATTEST: as to principal

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
PRINT NAME  
ATTEST: as to surety

\_\_\_\_\_  
PRINT NAME AND TITLE (SEAL)

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
PRINT NAME

\_\_\_\_\_  
PRINT NAME AND TITLE (SEAL)

AGENT (COMPANY): \_\_\_\_\_

AUTHORIZED BY: \_\_\_\_\_  
NAME AND TITLE



**SECTION 00620**

**PAYMENT BOND**

Principal	Business Address of Principal
Surety a Corporation of the State of  and authorized to do business in the State of Maryland	Obligee Mayor and City Council of Baltimore

Sum of Bond (Equal to Contract Price)  
 SUM OF \_\_\_\_\_  
 Dollars  
 (\$ \_\_\_\_\_ )

Contract Number and Identification City of Baltimore Department of General Services  Contract No. <b>GS21822 - NORTHWEST COMMUNITY ACTION CENTER - LOWER PARK HEIGHTS - RENOVATIONS</b>	Date of Contract _____, ____  Date Bond Executed _____, ____
---	--

KNOW ALL MEN BY THESE PRESENTS, That we, the PRINCIPAL above named and SURETY above named, are held and firmly bound unto the OBLIGEE above named in the full and just sum of the amount stated above, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, personal representatives, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the PRINCIPAL is entering into a certain Contract with the OBLIGEE described and dated, as shown above and attached hereto, and is required under the Provisions of the Public General Laws of Maryland to give a bond conditioned as hereinafter set forth.

NOW THEREFORE, the condition of this obligation is such that if the PRINCIPAL shall promptly make payments to all persons supplying labor and/or material in the prosecution of the work provided for in said Contract and any and all duly authorized extensions and/or modifications of said contract that may hereafter be made, notice of such extensions and/or modifications to the SURETY being hereby waived, and any maintenance, repair, guaranty and warranty required under the Contract, then this obligation to be null and void; otherwise they remain in full force and effect.

**PAYMENT BOND**

A suit or action commenced hereunder shall comply with applicable Provisions of the Public General Laws of Maryland. No suit or action shall be commenced hereunder against the OBLIGEE, its successors or assigns, nor shall OBLIGEE be liable for any costs or expenses of such suit.

IN WITNESS WHEREOF, the above bounden parties have executed this instrument under their several Seals on the date indicated above, the Name and corporation seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

\_\_\_\_\_  
ATTEST: as to principal

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
PRINT NAME

\_\_\_\_\_  
PRINT NAME AND TITLE (SEAL)

ATTEST: as to surety

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
PRINT NAME

\_\_\_\_\_  
PRINT NAME AND TITLE (SEAL)

AGENT (COMPANY): \_\_\_\_\_

AUTHORIZED BY: \_\_\_\_\_  
NAME AND TITLE

**PAYMENT BOND**

APPROVED:

APPROVED:

\_\_\_\_\_  
Mayor of Baltimore City

\_\_\_\_\_  
Director of General Services

\_\_\_\_\_  
Comptroller

\_\_\_\_\_  
Chief, Capital Projects Division  
Department of General Services

APPROVED AS TO FORM AND  
LEGAL SUFFICIENCY:

APPROVED BY BOARD OF ESTIMATES:

\_\_\_\_\_  
Chief Solicitor

\_\_\_\_\_  
Clerk Date

00 31 26 – EXISTING HAZARDOUS MATERIALS INFORMATION

PART 1 - GENERAL

1.1 EXISTING HAZARDOUS MATERIAL INFORMATION

- A. This Document with its referenced attachments provides Owner's information for Bidders' convenience. The attachments include:
  - 1. "Hazardous Materials Survey For Lower Park Heights Community Center," dated July 26, 2022, by Aria Environmental, Inc.
- B. It is not guaranteed that all hazardous materials have been identified in the report provided. The Bidder may perform additional investigations to determine the presence of hazardous materials by prior arrangement with the Owner. All such additional investigations shall be at the Bidder's sole expense.
- C. The Bidder is responsible for all interpretations derived from the reports provided.

END OF 00 31 26

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**HAZARDOUS MATERIALS SURVEY  
FOR  
LOWER PARK HEIGHTS COMMUNITY CENTER  
3939 REISTERSTOWN ROAD  
BALTIMORE, MARYLAND 21215**

**PREPARED FOR:**

**PENZA BAILEY ARCHITECTS  
A STUDIO OF PRIME AE GROUP, INC.  
5521 RESEARCH PARK DRIVE, SUITE 300  
BALTIMORE, MD 21228**

**PREPARED BY:**

**ARIA ENVIRONMENTAL, INC.  
PO BOX 286  
WOODBINE, MD 21797**

**JULY 26, 2022**

**211316**



**HAZARDOUS MATERIALS SURVEY  
FOR  
LOWER PARK HEIGHTS COMMUNITY CENTER  
3939 REISTERSTOWN ROAD  
BALTIMORE, MARYLAND 21215**

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**Attachments**

- |               |  |
|---------------|--|
| Attachment A: | Inspector’s Credentials                                      |
| Attachment B: | Asbestos Certificates of Analysis and Chain-of-Custody Forms |
| Attachment C  | Lead Paint XRF Sampling Data                                 |
| Attachment D: | Room Assessment Table  |
| Attachment E: | Sample Location Plan – Drawings                              |



**HAZARDOUS MATERIALS SURVEY FOR  
THE LOWER PARK HEIGHTS COMMUNITY CENTER  
3939 REISTERSTOWN ROAD, BALTIMORE, MARYLAND 21218**

**I. EXECUTIVE SUMMARY**

Aria Environmental, Inc. (AE) was contracted by Penza Bailey Architects to perform a limited hazardous materials survey for the Lower Park Heights Community Center building located at 3939 Reisterstown Road in Baltimore, Maryland. The purpose of the project is to identify and characterize hazardous or regulated building materials that require safe handling and disposal prior to planned renovations for the exterior of the building and the lobby interior.

The Lower Park Heights Community Center is a two-story masonry building originally built in the 1970s. Based upon the age of the original construction, hazardous and regulated materials are expected to exist in the building. This report presents our methodologies; results of sampling and analysis activities; and our conclusions and recommendations.

The survey for hazardous materials was conducted on August 17, 2021 by Julie Fafard and Jacob Halstead of AE. The survey for hazardous materials in the Lower Park Heights Community Center indicated the presence of hazardous or regulated materials that will require proper packaging and disposal prior to renovation or demolition. Our recommendations assume the scope of work for renovations is limited to the exterior of the building and the lobby interior:

1. Remove and dispose of asbestos-containing roofing tar, black roof caulk, shingled drain pad on roof, black floor mastic in the lobby, and tan wall caulk in the lobby.
2. Remove and dispose of assumed asbestos-containing fire doors.
3. Materials may be concealed behind solid walls, ceilings or in pipe chases. Demolition activities have the potential to expose additional asbestos-containing materials. Caution should be taken while demolishing solid ceilings and walls.
4. Recover refrigerant, remove and dispose of all refrigerant-containing equipment as ozone depleting substances.
5. Remove and dispose of battery containing lighted exit signs/emergency lights as universal waste.
6. Remove and dispose of oil-containing automatic door closers as oil-containing waste.
7. Remove and dispose halogen lights and LED lights as possible mercury containing waste.
8. Lead based paint was not found to be present in the structure.



**HAZARDOUS MATERIALS SURVEY FOR  
THE LOWER PARK HEIGHTS COMMUNITY CENTER  
3939 REISTERSTOWN ROAD, BALTIMORE, MARYLAND 21215**

**II. INTRODUCTION**

Aria Environmental, Inc. (AE) was contracted by Penza Bailey Architects to perform a limited pre-renovation hazardous materials survey of the building exterior and interior lobby of the Lower Park Heights Community Center. The purpose of the project is to identify and characterize hazardous or regulated building materials that require safe handling and disposal prior to the renovation of the building.

The Lower Park Heights Community Center is a two-story masonry building originally built in the 1970s. Based upon the age of the original construction, hazardous and regulated materials are expected to exist in the building. This report presents our methodologies; results of sampling and analysis activities; and our conclusions and recommendations for abatement.

Observed building finish materials included: Masonry exterior, built up asphalt roofing, brick interior walls, several styles of 12"x12" floor tiles with mastic, aluminum windows, metal and glass doors, 2'x4' ceiling tiles and several types of mastics, seam sealants and caulks.

**III. METHODOLOGY**

**A. Asbestos**

Representatives of AE conducted an asbestos survey of the exterior and interior lobby of the Lower Park Heights Community Center. Work was performed on August 17, 2021 by Julie Fafard (Maryland Asbestos Temporary Inspector No. MD-VAIR09012020-03, exp. 09/29/2021)<sup>1</sup>, and Jacob Halstead (Maryland Asbestos Inspector Certification Number A106142021-7). A visual inspection for suspected asbestos-containing materials was performed followed by asbestos sample collection and laboratory analysis. Copies of the inspector's credentials are located in Attachment A.

Bulk samples of each suspect asbestos-containing material encountered by the inspector were collected in randomly located areas. A clean sampling tool was used to obtain a "thumbnail" sized bulk sample. This sample was placed in a single-use 4-mil plastic bag, sealed and labeled. The sampling tool was cleaned with an amended water solution before and between uses. Samples were submitted to Asbestos Testing Laboratories (iATL) of Mt. Laurel, New Jersey (NIST-NVLAP Accreditation No. 101143-0) for analysis by Polarized Light Microscopy (PLM) using EPA method 600/R-93/116. A material is considered to be asbestos containing, if it contains one percent (1%) or more asbestos by PLM.

The survey was limited to the building exterior (envelope) and the interior lobby. Suspect asbestos-containing materials were not sampled if they were located behind solid walls and ceilings, or in enclosed pipe chases that would have to be damaged to access the suspect building materials. Suspect asbestos-containing materials were also not sampled if there had been previous sampling to confirm a positive or negative result. AE endeavored to access hatches, crawlspaces, attic spaces, pipe chases and duct chases by opening small holes and

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<sup>1</sup> Due to the COVID-19 pandemic, all MDE certifications and license dates are extended until 30 days after the state of emergency ends. The emergency was in effect on the date the report was prepared. Temporary licenses have been granted by MDE to all members of the survey team after passing a third-party exam.



access ways to perform exploration through direct visual observation. Asbestos-containing pipe insulation, duct insulation, mudded elbows, fittings and valves are expected on all concealed plumbing and mechanical systems, including those in chases and behind solid ceilings and walls or located underground.

## **B. Lead**

Julie Fafard (Maryland Lead Inspector Technician) with AE performed an X-Ray Fluorescence Analysis (XRF) lead-based paint survey, on August 17, 2021. The information contained within this report is intended to address the presence of lead-based paint or lead-containing paints to ensure that worker protection requirements are met under the Occupational Safety and Health Administration's (OSHA) "Lead Exposure in Construction Rule (29 CFR 1926.62)." The presence of lead-containing substances is presumed in any residential building construction before 1978 and in all commercial, industrial, and public structures unless it is determined that all painted surfaces are lead-free.

XRF readings were taken and recorded using a spectrum analyzer following operational protocols set forth in HUD's *Guidelines for the Evaluation and Control of Lead-Based Paint Hazard in Housing (2012)*. The NITON XRF was calibrated prior to and after each use and at least every four (4) hours. Three (3) calibration readings are collected at each interval to monitor the quality and performance of the XRF. Once an XRF scan of a surface was performed, the measurement was compared with the appropriate regulatory value for lead-based paint. The NITON XRF does not require substrate correction readings. However, the instrument cannot be used for collecting readings on severely curved surfaces, such as molding or small diameter pipes. In these situations, a paint chip sample was collected and submitted to a laboratory for analysis.

MDE defines "Lead-containing substance" as "any paint, plaster or other surface coating material containing more than 0.50 percent lead by weight calculated as lead metal in the dried solid, or more than 0.7 milligrams per square centimeter by the X-ray fluorescence analyzer." [COMAR 26.02.07.02]. EPA states "Lead-based paint is present:(i) On any surface that is tested and found to contain lead equal to or in excess of 1.0 milligrams per square centimeter or equal to or in excess of 0.5% by weight; and (ii) On any surface like a surface tested in the same room equivalent that has a similar painting history and that is found to be lead-based paint." [Title 40 CFR 745.227(h)].

## **C. Polychlorinated Biphenyls**

Polychlorinated biphenyls (PCB's) are a class of chemicals that were used in a wide variety of applications. PCBs are often found in dielectric fluids, cooling fluids, transformers, capacitors and caulks. PCB-containing equipment must often be disposed of as part of renovation and demolition projects. The EPA definition of PCB-containing materials is 50 part per million (ppm) or milligrams per kilogram (mg/kg). A representative number of fluorescent light ballasts were inspected for the presence or absence of the "No PCBs" label. If the "No PCBs" label is absent, then the ballast is considered to contain PCBs. The number of ballasts was estimated based upon the type of light fixture observed in the building. Light ballasts were counted as follows: one ballast for every two four-foot fluorescent light tube observed in a multi-tube fixture and one ballast for every one four-foot or eight-foot fluorescent light tube observed in a single fluorescent light tube fixture that is not joined to a second light fixture with a shared ballast.



**D. Mercury**

Mercury within fluorescent lamps, thermostats and other mechanical equipment often must be disposed of during renovation and demolition activities. Each area was surveyed for the presence of thermostats and/or equipment that may contain liquid mercury. Fluorescent light tubes may contain small amounts of mercury vapor and lead. Because disposal of fluorescent light tubes is regulated under the EPA Universal Waste rule, a count of fluorescent lamps is presented in this report.

**E. Refrigerants**

Refrigerant-containing equipment including refrigerators, freezers, and air conditioning units were identified for the purpose of recycling chlorofluorocarbon (CFC) and hydrochlorofluorocarbon (HCFC) refrigerants that are known to deplete ozone. Under EPA's Refrigerant Recycling Rule, equipment that is typically dismantled on-site before disposal (e.g., retail food refrigeration, central residential air conditioning, chillers, and industrial process refrigeration) require refrigerant recovery.

**IV. RESULTS**

**A. Asbestos**

Representatives of AE conducted an asbestos survey of the interior and exterior of the building. Bulk samples of suspect asbestos-containing materials were collected by AE during the asbestos survey activities. Forty-five (45) samples were collected during survey activities. Seven samples were split into distinct layers resulting in fifty-two (52) analysis. Seven (7) samples were positive for asbestos at levels greater than 1%. Table 1 presents these samples and their results. The chains of custody and certificates of analysis are located in attachment B.

**Table 1: Asbestos Bulk Sampling Results for the Lower Park Heights Community Center, Baltimore, Maryland, August 17, 2021**

Sample Number	Material	Functional Area	Result
01	Brown Window Caulk	Exterior- South Wall	NAD
02	Clear Ledge Caulk	Exterior- South Wall	NAD
03	White Ledge Caulk	Exterior- South Wall	NAD
04	White Expansion Joint	Exterior- South Wall	NAD
04 -L2	Clear Caulk	Exterior- South Wall	NAD
05	Pink Expansion Joint	Exterior- South Wall	NAD
06	Gray Door Caulk	Exterior- South Wall	NAD
07	Gray Door Caulk	Exterior – Rear Entry	NAD
08	Black Door Caulk	Exterior – Rear Entry	NAD



<b>Sample Number</b>	<b>Material</b>	<b>Functional Area</b>	<b>Result</b>
09	Black Tar	Roof	NAD
10	Gray Tar	Roof	NAD
11	Shingle Flashing and Tar	Roof	NAD
12	Gray Window Caulk	Roof	NAD
<b>13</b>	<b>Black Tar</b>	<b>Roof (Tin Roof over Entry)</b>	<b>10% Chrysotile</b>
14	White Caulk	Roof (Tin Roof over Entry)	NAD
<b>14-L2</b>	<b>Black Tar</b>	<b>Roof (Tin Roof over Entry)</b>	<b>2.4% Chrysotile</b>
15	Black Tar	Roof	NAD
16	Black Bubble Tar	Roof	NAD
<b>17</b>	<b>Drain Pad</b>	<b>Roof-Skylight</b>	<b>5.0% Chrysotile</b>
17-L2	Black Tar	Roof-Skylight	NAD
18	Orange Shingle	Roof	NAD
19	Teflon Tape	Roof	NAD
20	Brown Window Caulk	Exterior – East Side	NAD
21	White Ledge Caulk	Exterior – East Side	NAD
22	Red Penetration Sealant	Exterior – East Side	NAD
23	White Caulk	Exterior – East Side	NAD
24	Gray Door Caulk	Exterior – East Side	NAD
25	Black Sidewalk Caulk	Exterior-North Entrance	NAD
26	Rubber White Caulk at Edge of Building	Exterior-North Entrance	NAD
27	Black Fiberboard	Exterior-North Entrance	NAD
28	Black Caulk	Exterior-North Entrance	NAD
29	White Caulk	Exterior-North Entrance	NAD
30	Brown Caulk	Exterior-North Entrance	NAD



Sample Number	Material	Functional Area	Result
31	Door Caulk	Exterior-North Courtyard	NAD
32	Window Caulk	Exterior-North Courtyard	NAD
33	Black Vapor Barrier	Exterior-North Courtyard	NAD
34	12"x12" Brown Mottled Floor Tile	Lobby-Interior	NAD
<b>34-L2</b>	<b>Black Mastic</b>	<b>Lobby-Interior</b>	<b>1.3% Chrysotile</b>
35	12"x12" Beige w/ White Floor Tile and Mastic	Lobby-Interior	NAD
<b>35-L2</b>	<b>Black Mastic</b>	<b>Lobby-Interior</b>	<b>1.2% Chrysotile</b>
36	12"x12" White with Brown Floor Tile and Mastic	Lobby-Interior	NAD
<b>36-L2</b>	<b>Black Mastic</b>	<b>Lobby-Interior</b>	<b>1.4% Chrysotile</b>
37	12"x12" Gray Floor Tile and Mastic	Lobby-Interior	NAD
<b>37-L2</b>	<b>Black Mastic</b>	<b>Lobby-Interior</b>	<b>1.2% Chrysotile</b>
38	2'x4' Divot and Dot Ceiling Tile	Lobby-Interior	NAD
39	2'x4' Fissure and Dot Ceiling Tile	Lobby-Interior	NAD
<b>40</b>	<b>Wall Seam Caulk</b>	<b>Lobby-Interior</b>	<b>1.2% Chrysotile</b>
41	Non-Skid Floor	Vestibule	NAD
41-L2	Tan Glue	Vestibule	NAD
42	Leveling Compound	Vestibule	NAD
43	Door Caulk	Vestibule	NAD
44	Concrete Coating	Vestibule	NAD
45	Brown Cove Base Mastic	Lobby-Interior	NAD

\* NAD – No Asbestos Detected. Bold type indicates an asbestos-containing material. Split samples are reported as NAD unless there is a separate result.

Testing for asbestos confirmed the presence of asbestos-containing materials including: roofing tar and shingle, black roofing caulk, black floor tile mastic, and tan wall caulk. Furthermore, the following materials are **assumed** to contain asbestos until sampling and analysis proves otherwise:

- Fire doors
- Any concealed or inaccessible materials





Limitations: Suspect asbestos-containing materials were not sampled if they were located behind solid walls and ceilings, or in enclosed pipe chases that would have to be damaged to access the suspect building materials. AE endeavored to access hatches, crawlspaces, attic spaces, pipe chases and duct chases by opening small holes and access ways to perform exploration through direct visual observation. Asbestos-containing pipe insulation, duct insulation, mudded elbows, fittings and valves are expected on all concealed plumbing and mechanical systems, including those in chases and behind solid ceilings and walls or located underground. All accessible spaces within the scope of work of the building were surveyed.

**B. Lead**

Thirty-seven (37) XRF readings were made throughout the exterior and interior lobby of the Lower Park Heights Community Center. None of the thirty-seven (37) surfaces tested were above the Maryland residential Lead-Based Paint definition of 0.7 mg/cm<sup>2</sup>. The lead-based paint survey and report is located in Attachment C.

**C. Polychlorinated Biphenyls**

No fluorescent light ballasts were observed within the scope of work.

**D. Mercury**

Sixteen halogen lights and over twelve (12) canister lamps that may be CFLs, LEDs or incandescent lamps identified on the exterior, that may be fluorescent but could not be identified during the survey and LED pendulum lights identified within the lobby.

**E. Refrigerants**

TRANE HVAC equipment containing refrigerants, was identified on the upper and lower roofs of the Lower Park Heights Community Center. Table 2 presents an inventory of refrigerant-containing equipment by location in the building. The refrigerant type and factory charge are presented in the description if known.

**Table 2 – Refrigerant Containing Equipment at the Lower Park Heights Community Center, Baltimore, Maryland August 17, 2021**

Room Description	Description	Quantity	Units
Roof - Upper	TRANE Roof top Unit HVAC	6	EA
Roof - Lower	TRANE Roof top Unit HVAC	1	EA

**F. Other Universal and Regulated Waste**

The survey for hazardous materials indicated the presence of hazardous or regulated materials that will require proper packaging and disposal prior to any demolition activities on the building. Those materials include:

- One (1) combination emergency light and exit sign which contain a battery,
- Six (6) automatic door closers.



**V. CONCLUSIONS**

The survey for hazardous materials in the Lower Park Heights Community Center indicated the presence of hazardous or regulated materials that will require proper packaging and disposal prior to proposed renovation. The survey for hazardous materials included all accessible spaces of the building. Our conclusions are presented below.

**Asbestos:** Asbestos-containing materials identified as a result of the historical records review, confirmed through sampling and analysis, and those materials that are presumed without testing to contain asbestos are presented in Table 3 below.

**Table 3 – Asbestos-Containing and Assumed Asbestos-Containing Materials and Quantities for The Lower Park Heights Community Center**

Material Description	Quantity	
Black Tar on roof overhang at lobby	150	LF
Drainage pad on roof	50	SF
Non-asbestos 12"x12" Floor Tile w/ asbestos-containing Mastic	768	SF
Wall Seam Caulk	100	LF
Fire Doors - Assumed	11	EA

\*Pipe insulation and fittings are assumed to be in concealed locations. NE = not estimated

According to the Maryland and USEPA National Emission Standard for Hazardous Air Pollutants (NESHAP) regulations, all friable asbestos-containing materials and those materials likely to become friable during renovation or demolition must be removed by a Maryland licensed asbestos abatement contractor. The NESHAP regulation expressly prohibits cutting, sanding or sawing asbestos-containing materials.

**Lead:** Thirty-seven (37) XRF readings were made throughout the exterior and interior lobby of the Lower Park Heights Community Center. None of the thirty-eight (38) surfaces tested were above the Maryland residential Lead-Based Paint definition of 0.7 mg/cm<sup>2</sup>. The lead-based paint survey and report is located in Attachment C.

The information contained within this report is intended to address the presence of lead-based paint or lead-containing paints to ensure worker protection requirements are met under the Occupational Safety and Health Administration's (OSHA) "Lead in Construction Rule (29 CFR 1926.62)." The presence of lead-containing substances is presumed in any residential building construction before 1978 and in all commercial, industrial, and public structures unless it is determined that all painted surfaces are lead-free. According to the OSHA Lead in Construction regulation, lead may still be present and hazardous lead exposures might result from the disturbance of painted surfaces that have below the definition of lead-based paint (i.e., <0.7 mg/cm<sup>2</sup> or 0.5% lead by weight) for lead-based paint. Furthermore, lead may be present in waste materials at concentrations that would cause the waste to be considered hazardous per the Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA).

This facility may meet the definition of a child occupied facility under the USEPA Lead Renovation Repair and Painting Rule (RRP Rule) based on occupancy and use of the center. The RRP Rule requires that firms performing renovation, repair, and painting projects that disturb lead-based paint in homes, childcare facilities and pre-schools built before 1978 have their firm certified by EPA (or an EPA authorized state), use certified renovators who are trained by EPA-approved training providers and follow lead-safe work practices.



**Polychlorinated Biphenyls:** No fluorescent light ballasts were observed within the scope of work.

**Mercury:** Sixteen halogen lights and over twelve (12) cannister lamps that may be CFLs, LEDs or incandescent lamps identified on the exterior, that may be fluorescent but could not be identified during the survey and LED pendulum lights identified within the lobby. Disposal of lights and batteries are regulated under the EPA Universal Hazardous Waste Rule because they may contain mercury and/or small quantities of lead. Light tubes should be packaged and disposed of in accordance with 40 CFR 273.9 and COMAR 26.13.

**Refrigerants:** Seven (7) TRANE HVAC equipment units containing refrigerants, were identified on the upper and lower roofs the Lower Park Heights Community Center.

Under EPA's Refrigerant Recycling Rule, equipment that is typically dismantled on-site before disposal (e.g., retail food refrigeration, central residential air conditioning, chillers, and industrial process refrigeration) has to have the refrigerant recovered in accordance with EPA's requirements for servicing. However, equipment that typically enters the waste stream with the charge intact (e.g., motor vehicle air conditioners, household refrigerators and freezers, and room air conditioners) is subject to special safe disposal requirements.

Under EPA requirements, the final person in the disposal chain (e.g., a scrap metal recycler or landfill owner) is responsible for ensuring that refrigerant is recovered from equipment before the final disposal of the equipment. However, persons "upstream" can remove the refrigerant and provide documentation of its removal to the final person if this is more cost-effective. If the final person in the disposal chain (e.g., a scrap metal recycler or landfill owner) accepts appliances that no longer hold a refrigerant charge, that person is responsible for maintaining a signed statement from whom the appliances is being accepted. The signed statement must include the name and address of the person who recovered the refrigerant, and the date that the refrigerant was recovered, or a copy of a contract stating that the refrigerant will be removed prior to delivery. The EPA does not mandate a sticker as a form of verification that the refrigerant has been removed prior to disposal of the appliance. Such stickers do not relieve the final disposer of their responsibility to recover any remaining refrigerant in the appliance, unless the sticker contains a signed statement that includes the name and address of the person who recovered the refrigerant, and the date that the refrigerant was recovered.

**Other:** One (1) combination emergency light and exit sign was observed. Batteries are considered universal hazardous waste. Disposal of batteries is regulated under the EPA Universal Hazardous Waste Rule because they may contain mercury and/or small quantities of lead. Batteries should be packaged and disposed of in accordance with 40 CFR 273.9 and COMAR 26.13.

Six (6) oil containing automatic door closers were observed in the building. Door closers can be removed and packaged as oil-containing devices.

**Recommendations:** The survey for hazardous materials in the Lower Park Heights Community Center indicated the presence of hazardous or regulated materials that will require proper packaging and disposal prior to. A room-by-room assessment table of hazardous materials is provided in Attachment D. Our recommendations assume the scope of work for renovations is limited to the exterior of the building and the lobby interior:

1. Remove and dispose of asbestos-containing roofing tar, black roof caulk, shingled drain pad on roof, black floor mastic in the lobby, and tan wall caulk in the lobby.
2. Remove and dispose of assumed asbestos-containing fire doors.



3. Materials may be concealed behind solid walls, ceilings or in pipe chases. Demolition activities have the potential to expose additional asbestos-containing materials. Caution should be taken while demolishing solid ceilings and walls.
4. Recover refrigerant, remove and dispose of all refrigerant-containing equipment as ozone depleting substances.
5. Remove and dispose of battery containing lighted exit signs/emergency lights as universal waste.
6. Remove and dispose of oil-containing automatic door closers as oil-containing waste.
7. Remove and dispose of halogen lights and LED lights as possible mercury containing waste.
8. Lead based paint was not found to be present in the structure.

## **VI. LIMITATIONS**

This report has been prepared for the exclusive use of Penza Bailey Architects, a Studio of Prime AE and/or their agents. This service has been performed in accordance with generally accepted environmental practices. No other warranty, expressed or implied, is made. Our conclusions and recommendations are based, in part, upon information provided to us by others and our site observations. We have not verified the completeness or accuracy of the information provided to us by others, unless otherwise noted. Our observations and recommendations are based upon conditions readily visible at the site at the time of our site visit, and upon current industry standards. Destructive sampling was not performed as part of this survey. No observations were made behind solid walls, ceilings or in pipe chases. The report presents assumptions for the existence of hazardous materials in these locations.

By virtue of providing the services described in this report, the preparer does not assume the responsibility of the person(s) in charge of the site, or otherwise undertake responsibility for reporting to any local, state, or federal public agencies any conditions at the site that may present a potential danger to public health, safety, or the environment. It is the Client's responsibility to notify the appropriate local, state, or federal public agencies as required by law, or otherwise to disclose, in a timely manner, any information that may be necessary to prevent any danger to public health, safety, or the environment. Under this scope of services, the preparer assumes no responsibility regarding response actions (e.g. O&M plan, encapsulation, abatement, removal, etc.) initiated as a result of these findings. Response actions are the sole responsibility of the Client and should be conducted in accordance with local, state, and/or federal requirements, and should be performed by appropriately licensed personnel as warranted.



**Attachment A:**  
**Inspector's Credentials**

# Results

Maryland Asbestos Accreditation Exam

---

**Certificate Number:** 20-785

**First Name:** Julie

**Last Name:** Fafard

**Address:** 5921 White Rock Road

**City:** Sykesville

**State:** MD

**Zip:** 21784



---

According to our records this test was completed on: **10/5/2020**

We administered the following asbestos certification exam: **Inspector**

## Your Results

**Score:** **94%**

Congratulations you have passed your Maryland asbestos accreditation exam. This document and your training certificate will serve as a temporary license until you receive your official license in the mail. Prior to issuing a license, MDE will verify all necessary information and submitted documents.  
necessary information and submitted documents.

Thank you for taking the Maryland asbestos accreditation exam. If you have any concerns or questions about the exam, including how to collect your photo ID, please direct them to the Maryland Department of the environment at (410) 537-3200.

Issued By \_\_\_\_\_

Date **10/5/2020**



# Maryland

## Department of the Environment

Larry Hogan, Governor  
Boyd K. Rutherford, Lt. Governor

Ben Grumbles, Secretary  
Horacio Tablada, Deputy Secretary

July 15, 2021

Jake Halstead  
7407 Village RD  
Syksville, MD 21784

Dear Jake Halstead,

Thank you for taking the asbestos exam for Inspector in Maryland on 6/23/2021. Congratulations, you passed the exam. This letter will serve as your accreditation. Your accreditation will expire on 6/16/2022.

Sincerely yours,

A handwritten signature in cursive script that reads "Lorraine Anderson".

Lorraine Anderson  
Chief, Asbestos Division  
Air & Radiation Administration  
Maryland Department of the Environment

Certification Number: AI06142021-7

Score: 74

Email: [jake7502@gmail.com](mailto:jake7502@gmail.com)

**Attachment B:**

**Asbestos Certificates of Analysis and Chain-of-Custody Forms**



CERTIFICATE OF ANALYSIS

Client: Aria Environmental  
PO Box 286  
Woodbine MD 21797

Report Date: 8/27/2021  
Report No.: 642949 - PLM Rev #2, 9/30/2021  
Project: Lower Park Heights Community  
Project No.: 21-1316

Client: ARI436

PLM BULK SAMPLE ANALYSIS SUMMARY

**Lab No.:** 7275768      **Analyst Observation:** Black Caulk      **Location:** South Wall Exterior  
**Client No.:** 01      **Client Description:** Brown Window Caulk      **Facility:**  
Percent Asbestos:      Percent Non-Asbestos Fibrous Material:      Percent Non-Fibrous Material:  
*None Detected*      10 Talc      90

**Lab No.:** 7275769      **Analyst Observation:** Clear Caulk      **Location:** South Wall Exterior  
**Client No.:** 02      **Client Description:** Clear Ledge Caulk      **Facility:**  
Percent Asbestos:      Percent Non-Asbestos Fibrous Material:      Percent Non-Fibrous Material:  
*None Detected*      None Detected      100


**Lab No.:** 7275770      **Analyst Observation:** White Caulk      **Location:** South Wall Exterior  
**Client No.:** 03      **Client Description:** White Ledge Caulk      **Facility:**  
Percent Asbestos:      Percent Non-Asbestos Fibrous Material:      Percent Non-Fibrous Material:  
*None Detected*      None Detected      100

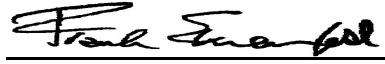
**Lab No.:** 7275771      **Analyst Observation:** White Caulk      **Location:** South Wall Exterior  
**Client No.:** 04      **Client Description:** White Expansion Joint Caulk      **Facility:**  
Percent Asbestos:      Percent Non-Asbestos Fibrous Material:      Percent Non-Fibrous Material:  
*None Detected*      None Detected      100

**Lab No.:** 7275771(L2)      **Analyst Observation:** Clear Caulk      **Location:** South Wall Exterior  
**Client No.:** 04      **Client Description:** White Expansion Joint Caulk      **Facility:**  
Percent Asbestos:      Percent Non-Asbestos Fibrous Material:      Percent Non-Fibrous Material:  
*None Detected*      None Detected      100

**Lab No.:** 7275772      **Analyst Observation:** Tan Caulk      **Location:** South Wall Exterior  
**Client No.:** 05      **Client Description:** Pink Expansion Joint Caulk      **Facility:**  
Percent Asbestos:      Percent Non-Asbestos Fibrous Material:      Percent Non-Fibrous Material:  
*None Detected*      None Detected      100

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/18/2021  
Date Analyzed: 08/26/2021  
Signature:   
Analyst: Michael Moore

Approved By:   
Frank E. Ehrenfeld, III  
Laboratory Director

CERTIFICATE OF ANALYSIS

Client: Aria Environmental  
PO Box 286  
Woodbine MD 21797

Report Date: 8/27/2021  
Report No.: 642949 - PLM Rev #2, 9/30/2021  
Project: Lower Park Heights Community  
Project No.: 21-1316

Client: ARI436

PLM BULK SAMPLE ANALYSIS SUMMARY

**Lab No.:** 7275773      **Analyst Observation:** Grey Caulk      **Location:** South Wall Exterior  
**Client No.:** 06      **Client Description:** Gray Door Caulk      **Facility:**  
Percent Asbestos:      Percent Non-Asbestos Fibrous Material:      Percent Non-Fibrous Material:  
*None Detected*      None Detected      100

**Lab No.:** 7275774      **Analyst Observation:** Tan Caulk      **Location:** Exterior Real Entry  
**Client No.:** 07      **Client Description:** Beige Door Caulk      **Facility:**  
Percent Asbestos:      Percent Non-Asbestos Fibrous Material:      Percent Non-Fibrous Material:  
*None Detected*      None Detected      100

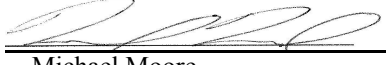
**Lab No.:** 7275775      **Analyst Observation:** Black Caulk      **Location:** Exterior Rear Entry  
**Client No.:** 08      **Client Description:** Black Door Caulk      **Facility:**  
Percent Asbestos:      Percent Non-Asbestos Fibrous Material:      Percent Non-Fibrous Material:  
*None Detected*      None Detected      100

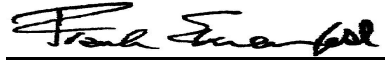
**Lab No.:** 7275776      **Analyst Observation:** Black Tar      **Location:** Roof  
**Client No.:** 09      **Client Description:** Black Tar      **Facility:**  
Percent Asbestos:      Percent Non-Asbestos Fibrous Material:      Percent Non-Fibrous Material:  
*None Detected*      None Detected      100

**Lab No.:** 7275777      **Analyst Observation:** Black Tar      **Location:** Roof  
**Client No.:** 10      **Client Description:** Gray Tar      **Facility:**  
Percent Asbestos:      Percent Non-Asbestos Fibrous Material:      Percent Non-Fibrous Material:  
*None Detected*      3 Cellulose      97

**Lab No.:** 7275778      **Analyst Observation:** Black Shingle      **Location:** Roof  
**Client No.:** 11      **Client Description:** Shingle Flashing And Tar      **Facility:**  
Percent Asbestos:      Percent Non-Asbestos Fibrous Material:      Percent Non-Fibrous Material:  
*None Detected*      5 Synthetic      94  
1 Fibrous Glass

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/18/2021  
Date Analyzed: 08/26/2021  
Signature:   
Analyst: Michael Moore

Approved By:   
Frank E. Ehrenfeld, III  
Laboratory Director

CERTIFICATE OF ANALYSIS

Client: Aria Environmental PO Box 286 Woodbine MD 21797	Report Date: 8/27/2021 Report No.: 642949 - PLM Project: Lower Park Heights Community Project No.: 21-1316	Rev #2, 9/30/2021
Client: ARI436		

PLM BULK SAMPLE ANALYSIS SUMMARY

<b>Lab No.:</b> 7275778(L2) <b>Client No.:</b> 11	<b>Analyst Observation:</b> Black Tar <b>Client Description:</b> Shingle Flashing And Tar	<b>Location:</b> Roof <b>Facility:</b>
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 7275779 <b>Client No.:</b> 12	<b>Analyst Observation:</b> Clear Caulk <b>Client Description:</b> Gray Window Caulk	<b>Location:</b> Roof <b>Facility:</b>
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 7275780 <b>Client No.:</b> 13	<b>Analyst Observation:</b> Black Caulk <b>Client Description:</b> Black Caulk	<b>Location:</b> Roof Over Entry <b>Facility:</b>
<u>Percent Asbestos:</u> <b>10 Chrysotile</b>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 90
<b>Lab No.:</b> 7275781 <b>Client No.:</b> 14	<b>Analyst Observation:</b> White Caulk <b>Client Description:</b> White Caulk	<b>Location:</b> Roof Over Entry <b>Facility:</b>
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 7275781(L2) <b>Client No.:</b> 14	<b>Analyst Observation:</b> Black Tar <b>Client Description:</b> White Caulk	<b>Location:</b> Roof Over Entry <b>Facility:</b>
<u>Percent Asbestos:</u> <b>PC 2.4 Chrysotile</b>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 97.6
<b>Lab No.:</b> 7275782 <b>Client No.:</b> 15	<b>Analyst Observation:</b> Clear Caulk <b>Client Description:</b> Black Tar	<b>Location:</b> Roof Over Entry <b>Facility:</b>
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/18/2021  
Date Analyzed: 08/26/2021  
Signature:   
Analyst: Michael Moore

Approved By:   
Frank E. Ehrenfeld, III  
Laboratory Director

CERTIFICATE OF ANALYSIS

Client: Aria Environmental PO Box 286 Woodbine MD 21797	Report Date: 8/27/2021 Report No.: 642949 - PLM Project: Lower Park Heights Community Project No.: 21-1316	Rev #2, 9/30/2021
Client: ARI436		

PLM BULK SAMPLE ANALYSIS SUMMARY

<b>Lab No.:</b> 7275783 <b>Client No.:</b> 16	<b>Analyst Observation:</b> Black Tar <b>Client Description:</b> Black Bubble Tar	<b>Location:</b> Roof <b>Facility:</b>
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

<b>Lab No.:</b> 7275784 <b>Client No.:</b> 17	<b>Analyst Observation:</b> Black Pad <b>Client Description:</b> Drain Pad At Skylight/Black Tar	<b>Location:</b> Roof <b>Facility:</b>
<u>Percent Asbestos:</u> <b>PC 5.0 Chrysotile</b>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 95

<b>Lab No.:</b> 7275784(L2) <b>Client No.:</b> 17	<b>Analyst Observation:</b> Black Tar <b>Client Description:</b> Drain Pad At Skylight/Black Tar	<b>Location:</b> Roof <b>Facility:</b>
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/18/2021  
Date Analyzed: 08/26/2021  
Signature:   
Analyst: Michael Moore

Approved By:   
Frank E. Ehrenfeld, III  
Laboratory Director


CERTIFICATE OF ANALYSIS

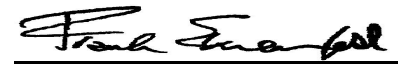
Client: Aria Environmental PO Box 286 Woodbine MD 21797	Report Date: 8/27/2021 Report No.: 642949 - PLM Project: Lower Park Heights Community Project No.: 21-1316	Rev #2, 9/30/2021
Client: ARI436		

PLM BULK SAMPLE ANALYSIS SUMMARY

<b>Lab No.:</b> 7275785 <b>Client No.:</b> 18 <u>Percent Asbestos:</u> <i>None Detected</i>	<b>Analyst Observation:</b> Black Shingle <b>Client Description:</b> Drain Pad At Skylight/Orange Shingle <u>Percent Non-Asbestos Fibrous Material:</u> 10 Fibrous Glass	<b>Location:</b> Roof <b>Facility:</b> <u>Percent Non-Fibrous Material:</u> 90
<b>Lab No.:</b> 7275786 <b>Client No.:</b> 19 <u>Percent Asbestos:</u> <i>None Detected</i>	<b>Analyst Observation:</b> Off-White Tape <b>Client Description:</b> Access Hatch/White Tape <u>Percent Non-Asbestos Fibrous Material:</u> 95 Cellulose	<b>Location:</b> Roof <b>Facility:</b> <u>Percent Non-Fibrous Material:</u> 5
<b>Lab No.:</b> 7275787 <b>Client No.:</b> 20 <u>Percent Asbestos:</u> <i>None Detected</i>	<b>Analyst Observation:</b> Brown Caulk <b>Client Description:</b> Brown Window Caulk <u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<b>Location:</b> Exterior East Side <b>Facility:</b> <u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 7275788 <b>Client No.:</b> 21 <u>Percent Asbestos:</u> <i>None Detected</i>	<b>Analyst Observation:</b> Off-White Caulk <b>Client Description:</b> White Ledge Caulk <u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<b>Location:</b> Exterior East Side <b>Facility:</b> <u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 7275789 <b>Client No.:</b> 22 <u>Percent Asbestos:</u> <i>None Detected</i>	<b>Analyst Observation:</b> Red Caulk <b>Client Description:</b> Red Penetration Sealant <u>Percent Non-Asbestos Fibrous Material:</u> 1 Fibrous Glass	<b>Location:</b> Exterior East Side <b>Facility:</b> <u>Percent Non-Fibrous Material:</u> 99
<b>Lab No.:</b> 7275790 <b>Client No.:</b> 23 <u>Percent Asbestos:</u> <i>None Detected</i>	<b>Analyst Observation:</b> Off-White Caulk <b>Client Description:</b> White Caulk <u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<b>Location:</b> Exterior East Side <b>Facility:</b> <u>Percent Non-Fibrous Material:</u> 100

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/18/2021  
Date Analyzed: 08/27/2021  
Signature:   
Analyst: Ellen Smith

Approved By:   
Frank E. Ehrenfeld, III  
Laboratory Director

CERTIFICATE OF ANALYSIS

Client: Aria Environmental  
PO Box 286  
Woodbine MD 21797

Report Date: 8/27/2021  
Report No.: 642949 - PLM Rev #2, 9/30/2021  
Project: Lower Park Heights Community  
Project No.: 21-1316

Client: ARI436

PLM BULK SAMPLE ANALYSIS SUMMARY

**Lab No.:** 7275791      **Analyst Observation:** Lt Tan Caulk      **Location:** Exterior East Side  
**Client No.:** 24      **Client Description:** Gray Door Caulk      **Facility:**  
**Percent Asbestos:**      **Percent Non-Asbestos Fibrous Material:**      **Percent Non-Fibrous Material:**  
*None Detected*      None Detected      100

**Lab No.:** 7275792      **Analyst Observation:** Black Caulk      **Location:** North Entrance  
**Client No.:** 25      **Client Description:** Black Sidewalk Caulk      **Facility:**  
**Percent Asbestos:**      **Percent Non-Asbestos Fibrous Material:**      **Percent Non-Fibrous Material:**  
*None Detected*      2 Cellulose      98


**Lab No.:** 7275793      **Analyst Observation:** Tan Caulk      **Location:** North Entrance  
**Client No.:** 26      **Client Description:** Rubbery White Caulk      **Facility:**  
**Percent Asbestos:**      **Percent Non-Asbestos Fibrous Material:**      **Percent Non-Fibrous Material:**  
*None Detected*      None Detected      100

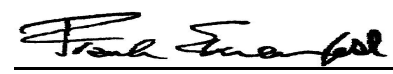
**Lab No.:** 7275794      **Analyst Observation:** Tan Fiberboard      **Location:** North Entrance  
**Client No.:** 27      **Client Description:** Black Fiberboard      **Facility:**  
**Percent Asbestos:**      **Percent Non-Asbestos Fibrous Material:**      **Percent Non-Fibrous Material:**  
*None Detected*      99 Cellulose      1

**Lab No.:** 7275795      **Analyst Observation:** Black Caulk      **Location:** North Entrance  
**Client No.:** 28      **Client Description:** Black Caulk      **Facility:**  
**Percent Asbestos:**      **Percent Non-Asbestos Fibrous Material:**      **Percent Non-Fibrous Material:**  
*None Detected*      None Detected      100

**Lab No.:** 7275796      **Analyst Observation:** Tan Caulk      **Location:** North Entrance  
**Client No.:** 29      **Client Description:** White Door Caulk      **Facility:**  
**Percent Asbestos:**      **Percent Non-Asbestos Fibrous Material:**      **Percent Non-Fibrous Material:**  
*None Detected*      None Detected      100

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/18/2021  
Date Analyzed: 08/27/2021  
Signature:   
Analyst: Ellen Smith

Approved By:   
Frank E. Ehrenfeld, III  
Laboratory Director




CERTIFICATE OF ANALYSIS

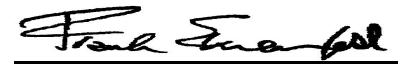
Client: Aria Environmental PO Box 286 Woodbine MD 21797	Report Date: 8/27/2021 Report No.: 642949 - PLM Project: Lower Park Heights Community Project No.: 21-1316	Rev #2, 9/30/2021
Client: ARI436		

PLM BULK SAMPLE ANALYSIS SUMMARY

<b>Lab No.:</b> 7275797 <b>Client No.:</b> 30	<b>Analyst Observation:</b> Black Caulk <b>Client Description:</b> Brown Door Caulk	<b>Location:</b> North Entrance <b>Facility:</b>
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 7275798 <b>Client No.:</b> 31	<b>Analyst Observation:</b> Off-White Caulk <b>Client Description:</b> Door Caulk	<b>Location:</b> Exterior NE <b>Facility:</b>
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 7275799 <b>Client No.:</b> 32	<b>Analyst Observation:</b> Black Caulk <b>Client Description:</b> Window Caulk	<b>Location:</b> Exterior NE <b>Facility:</b>
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 7275800 <b>Client No.:</b> 33	<b>Analyst Observation:</b> Black Vapor Barrier <b>Client Description:</b> Black Vapor Barrier	<b>Location:</b> Exterior NE <b>Facility:</b>
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 7275801 <b>Client No.:</b> 34	<b>Analyst Observation:</b> Lt Tan Floor Tile <b>Client Description:</b> 12x12 Brown Mottled FT And Black Mastic	<b>Location:</b> Interior Lobby <b>Facility:</b>
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 7275801(L2) <b>Client No.:</b> 34	<b>Analyst Observation:</b> Black Mastic <b>Client Description:</b> 12x12 Brown Mottled FT And Black Mastic	<b>Location:</b> Interior Lobby <b>Facility:</b>
<u>Percent Asbestos:</u> <i>PC 1.3 Chrysotile</i>	<u>Percent Non-Asbestos Fibrous Material:</u> 1 Cellulose	<u>Percent Non-Fibrous Material:</u> 97.7

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/18/2021  
Date Analyzed: 08/27/2021  
Signature:   
Analyst: Ellen Smith

Approved By:   
Frank E. Ehrenfeld, III  
Laboratory Director

CERTIFICATE OF ANALYSIS

Client: Aria Environmental PO Box 286 Woodbine MD 21797	Report Date: 8/27/2021 Report No.: 642949 - PLM Project: Lower Park Heights Community Project No.: 21-1316	Rev #2, 9/30/2021
Client: ARI436		

PLM BULK SAMPLE ANALYSIS SUMMARY

<b>Lab No.:</b> 7275802 <b>Client No.:</b> 35	<b>Analyst Observation:</b> Lt Tan Floor Tile <b>Client Description:</b> 12x12 Beige/White FT And Black Mastic	<b>Location:</b> Interior Lobby <b>Facility:</b>
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

<b>Lab No.:</b> 7275802(L2) <b>Client No.:</b> 35	<b>Analyst Observation:</b> Black Mastic <b>Client Description:</b> 12x12 Beige/White FT And Black Mastic	<b>Location:</b> Interior Lobby <b>Facility:</b>
<u>Percent Asbestos:</u> <b>PC 1.2 Chrysotile</b>	<u>Percent Non-Asbestos Fibrous Material:</u> 1 Cellulose	<u>Percent Non-Fibrous Material:</u> 97.8

<b>Lab No.:</b> 7275803 <b>Client No.:</b> 36	<b>Analyst Observation:</b> Lt Tan Floor Tile <b>Client Description:</b> 12x12 White/Brown FT And Black Mastic	<b>Location:</b> Interior Lobby <b>Facility:</b>
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

<b>Lab No.:</b> 7275803(L2) <b>Client No.:</b> 36	<b>Analyst Observation:</b> Black Mastic <b>Client Description:</b> 12x12 White/Brown FT And Black Mastic	<b>Location:</b> Interior Lobby <b>Facility:</b>
<u>Percent Asbestos:</u> <b>PC 1.4 Chrysotile</b>	<u>Percent Non-Asbestos Fibrous Material:</u> 1 Cellulose	<u>Percent Non-Fibrous Material:</u> 97.6

<b>Lab No.:</b> 7275804 <b>Client No.:</b> 37	<b>Analyst Observation:</b> Grey Floor Tile <b>Client Description:</b> 12x12 Gray FT And Black Mastic	<b>Location:</b> Interior Lobby <b>Facility:</b>
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

<b>Lab No.:</b> 7275804(L2) <b>Client No.:</b> 37	<b>Analyst Observation:</b> Black Mastic <b>Client Description:</b> 12x12 Gray FT And Black Mastic	<b>Location:</b> Interior Lobby <b>Facility:</b>
<u>Percent Asbestos:</u> <b>PC 1.2 Chrysotile</b>	<u>Percent Non-Asbestos Fibrous Material:</u> 1 Cellulose	<u>Percent Non-Fibrous Material:</u> 97.8

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/18/2021  
Date Analyzed: 08/27/2021  
Signature:   
Analyst: Ellen Smith

Approved By:   
Frank E. Ehrenfeld, III  
Laboratory Director



CERTIFICATE OF ANALYSIS

Client: Aria Environmental  
PO Box 286  
Woodbine MD 21797

Report Date: 8/27/2021  
Report No.: 642949 - PLM Rev #2, 9/30/2021  
Project: Lower Park Heights Community  
Project No.: 21-1316

Client: ARI436

PLM BULK SAMPLE ANALYSIS SUMMARY

**Lab No.:** 7275805  
**Client No.:** 38  
**Analyst Observation:** Tan Ceiling Tile  
**Client Description:** 2x4 Divot And Dot Ceiling Tile  
**Location:** Interior Lobby  
**Facility:**  
Percent Asbestos: *None Detected*  
Percent Non-Asbestos Fibrous Material: 35 Cellulose  
20 Fibrous Glass  
Percent Non-Fibrous Material: 45

**Lab No.:** 7275806  
**Client No.:** 39  
**Analyst Observation:** Tan Ceiling Tile  
**Client Description:** 2x4 Fissure And Dot Ceiling Tile  
**Location:** Interior Lobby  
**Facility:**  
Percent Asbestos: *None Detected*  
Percent Non-Asbestos Fibrous Material: 35 Cellulose  
15 Fibrous Glass  
Percent Non-Fibrous Material: 50

**Lab No.:** 7275807  
**Client No.:** 40  
**Analyst Observation:** Tan Caulk  
**Client Description:** Wall Caulk  
**Location:** Interior Lobby  
**Facility:**  
Percent Asbestos: *PC 1.2 Chrysotile*  
Percent Non-Asbestos Fibrous Material: None Detected  
Percent Non-Fibrous Material: 98.8

**Lab No.:** 7275808  
**Client No.:** 41  
**Analyst Observation:** Black Flooring  
**Client Description:** Non Skid Floor And Glue  
**Location:** Vestibule  
**Facility:**  
Percent Asbestos: *None Detected*  
Percent Non-Asbestos Fibrous Material: None Detected  
Percent Non-Fibrous Material: 100

**Lab No.:** 7275808(L2)  
**Client No.:** 41  
**Analyst Observation:** Tan Glue  
**Client Description:** Non Skid Floor And Glue  
**Location:** Vestibule  
**Facility:**  
Percent Asbestos: *None Detected*  
Percent Non-Asbestos Fibrous Material: None Detected  
Percent Non-Fibrous Material: 100

**Lab No.:** 7275809  
**Client No.:** 42  
**Analyst Observation:** Grey Leveling Compound  
**Client Description:** Leveling Compound  
**Location:** Vestibule  
**Facility:**  
Percent Asbestos: *None Detected*  
Percent Non-Asbestos Fibrous Material: None Detected  
Percent Non-Fibrous Material: 100

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/18/2021  
Date Analyzed: 08/27/2021  
Signature:   
Analyst: Ellen Smith

Approved By:   
Frank E. Ehrenfeld, III  
Laboratory Director

CERTIFICATE OF ANALYSIS

Client: Aria Environmental PO Box 286 Woodbine MD 21797	Report Date: 8/27/2021 Report No.: 642949 - PLM Project: Lower Park Heights Community Project No.: 21-1316	Rev #2, 9/30/2021
Client: ARI436		


PLM BULK SAMPLE ANALYSIS SUMMARY

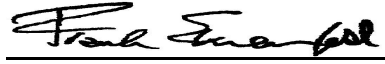
<b>Lab No.:</b> 7275810 <b>Client No.:</b> 43	<b>Analyst Observation:</b> Brown Caulk <b>Client Description:</b> Door Caulk	<b>Location:</b> Vestibule <b>Facility:</b>
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

<b>Lab No.:</b> 7275811 <b>Client No.:</b> 44	<b>Analyst Observation:</b> Tan Concrete <b>Client Description:</b> Concrete Coating	<b>Location:</b> Vestibule <b>Facility:</b>
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

<b>Lab No.:</b> 7275812 <b>Client No.:</b> 45	<b>Analyst Observation:</b> Brown Mastic <b>Client Description:</b> Brown Cove Base Mastic	<b>Location:</b> Interior Lobby <b>Facility:</b>
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/18/2021  
Date Analyzed: 08/27/2021  
Signature:   
Analyst: Ellen Smith

Approved By:   
Frank E. Ehrenfeld, III  
Laboratory Director

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CERTIFICATE OF ANALYSIS

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Client: Aria Environmental  
PO Box 286  
Woodbine MD 21797

Report Date: 8/27/2021  
Report No.: 642949 - PLM  
Project: Lower Park Heights Community  
Project No.: 21-1316

Client: ARI436

## Appendix to Analytical Report

**Customer Contact:** Michele Twilley

**Method:** 40 CFR Appendix E to Subpart E of Part 763, interim method for the Determination of Asbestos in Bulk Insulation Samples, USEPA 600, R93-116 and NYSDOH ELAP 198.1 as needed.

This appendix seeks to promote greater understanding of any observations, exceptions, special instructions, or circumstances that the laboratory needs to communicate to the client concerning the above samples. The information below is used to help promote your ability to make the most informed decisions for you and your customers. Please note the following points of contact for any questions you may have.

**iATL Customer Service:** customerservice@iatl.com

**iATL Office Manager:** wchampion@iatl.com

**iATL Account Representative:** Kelly Klippel

**Sample Login Notes:** See Batch Sheet Attached

**Sample Matrix:** Bulk Building Materials

**Exceptions Noted:** See Following Pages

### General Terms, Warrants, Limits, Qualifiers:

General information about iATL capabilities and client/laboratory relationships and responsibilities are spelled out in iATL policies that are listed at [www.iATL.com](http://www.iATL.com) and in our Quality Assurance Manual per ISO 17025 standard requirements. The information therein is a representation of iATL definitions and policies for turnaround times, sample submittal, collection media, blank definitions, quantification issues and limit of detection, analytical methods and procedures, sub-contracting policies, results reporting options, fees, terms, and discounts, confidentiality, sample archival and disposal, and data interpretation.

iATL warrants the test results to be of a precision normal for the type and methodology employed for each sample submitted. iATL disclaims any other warrants, expressed or implied, including warranty of fitness for a particular purpose and warranty of merchantability. iATL accepts no legal responsibility for the purpose for which the client uses test results. Any analytical work performed must be governed by our Standard Terms and Conditions. Prices, methods and detection limits may be changed without notification. Please contact your Customer Service Representative for the most current information.

This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA LAP LLC, or any agency of local, state or province governments nor of any agency of the U.S. government.

This report shall not be reproduced except in full, without written approval of the laboratory.

### Information Pertinent to this Report:

Analysis by US EPA 600 93-116: Determination of Asbestos in Bulk Building Materials by Polarized Light Microscopy (PLM).

### Certifications:

- NIST-NVLAP No. 101165-0
- NYSDOH-ELAP No. 11021
- AIHA-LAP, LLC No. 100188

Quantification at <0.25% by volume is possible with this method. (PC) Indicates Stratified Point Count Method performed. (PC-Trace) means that asbestos was detected but is not quantifiable under the Point Counting regimen. PC Trace represents a <0.25% amount. Analysis includes all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed (ex. analyze until positive instructions). Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, PLM is not consistently reliable in detecting asbestos in non-friable organically bound (NOB) materials. Quantitative transmission electron microscopy (TEM) is currently the only method that can pronounce materials as non-asbestos containing.

Analytical Methodology Alternatives: Your initial request for analysis may not have accounted for recent advances in regulatory requirements or advances in technology that are routinely used in similar situations for other qualified projects. You may have the option to explore additional analysis for further information. Below are a few options, listed as the matrix followed by the appropriate methodology. Also included are links to more information on our website.

Bulk Building Materials that are Non-Friable Organically Bound (NOB) by Gravimetric Reduction techniques employing PLM and TEM: ELAP 198.6 (PLM-NOB), ELAP 198.4 (TEM-NOB) See additional information at the end of this appendix.

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CERTIFICATE OF ANALYSIS

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Client: Aria Environmental  
PO Box 286  
Woodbine MD 21797

Report Date: 8/27/2021  
Report No.: 642949 - PLM  
Project: Lower Park Heights Community  
Project No.: 21-1316

Client: ARI436

Loose Fill Vermiculite Insulation, Attic Insulation, Zonolite (copyright), etc.: US EPA 600 R-4/004 (multi-tiered analytical process)  
Sprayed On Insulation/Fireproofing with Vermiculite (SOF-V): ELAP 198.8 (PLM-SOF-V)

Soil, sludge, sediment, aggregate, and like materials analyzed for asbestos or other elongated mineral particles (ex. erionite, etc.): ASTM D7521, CARB 435, and other options available

Asbestos in Surface Dust according to one of ASTM's Methods (very dependent on sampling collection technique – by TEM): ASTM D 5755, D5756, or D6480

Various other asbestos matrices (air, water, etc.) and analytical methods are available.

### Disclaimers / Qualifiers:

There may be some samples in this project that have a "NOTE:" associated with a sample result. We use added disclaimers or qualifiers to inform the client about something that requires further explanation. Here is a list with highlighted disclaimers that may be pertinent to this project. For a full explanation of these and other disclaimers, please inquire at [customerservice@iatl.com](mailto:customerservice@iatl.com).

- 1) Note: No mastic provided for analysis.
- 2) Note: Insufficient mastic provided for analysis.
- 3) Note: Insufficient material provided for analysis.
- 4) Note: Insufficient sample provided for QC reanalysis.
- 5) Note: Different material than indicated on Sample Log / Description.
- 6) Note: Sample not submitted.
- 7) Note: Attached to asbestos containing material.
- 8) Note: Received wet.
- 9) Note: Possible surface contamination.
- 10) Note: Not building material. 1% threshold may not apply.
- 11) Note: Recommend TEM-NOB analysis as per EPA recommendations.
- 12) Note: Asbestos detected but not quantifiable.
- 13) Note: Multiple identical samples submitted, only one analyzed.
- 14) Note: Analyzed by EPA 600/R-93/116. Point Counting detection limit at 0.080%.
- 15) Note: Analyzed by EPA 600/R-93/116. Point Counting detection limit at 0.125%.
- 16) Note: This sample contains >10% vermiculite mineral. See Appendix for Recommendations for Vermiculite Analysis.

### Recommendations for Vermiculite Analysis:

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gänge, homogeneous exfoliated books of mica, or mixed mineral composites). Please contact your client representative for pricing and turnaround time options available.

iATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004).

For New York State customers, NYSDOH requires disclaimers and qualifiers for various vermiculite containing samples that direct analysis via ELAP198.6 and ELAP198.8 for samples that contain >10% vermiculite mineral where ELAP198.6 may be used to evaluate the asbestos content of the material. However, any test result using ELAP198.6 will be reported with the following disclaimer: "ELAP198.6 method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing >10% vermiculite."

Further information on this method and other vermiculite and asbestos issues can be found at the following: Agency for Toxic Substances and Disease Registry (ATSDR) [www.atsdr.cdc.gov](http://www.atsdr.cdc.gov), United States Geological Survey (USGS) [www.minerals.usgs.gov/minerals/](http://www.minerals.usgs.gov/minerals/), US EPA [www.epa.gov/asbestos](http://www.epa.gov/asbestos). The USEPA also has an informative brochure "Current Best Practices for Vermiculite Attic Insulation" EPA 747F03001 May 2003, that may assist the health and remediation professional. NYS customers please follow current NYSDOH ELAP requirements per policy on subject of surfacing and vermiculite, May 6, 2016, Testing Requirements for Surfacing Material Containing Vermiculite ([https://www.wadsworth.org/sites/default/files/WebDoc/I198\\_8\\_02\\_2.pdf](https://www.wadsworth.org/sites/default/files/WebDoc/I198_8_02_2.pdf))

The following is a summary of the analytical process outlines in the EPA 600/R-04/004 Method:

- 1) **Analytical Step/Method:** Initial Screening by PLM, EPA 600R-93/116  
**Requirements/Comments:** Minimum of 0.1 g of sample. ~0.25% for most samples.

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CERTIFICATE OF ANALYSIS

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Client: Aria Environmental  
PO Box 286  
Woodbine MD 21797

Report Date: 8/27/2021  
Report No.: 642949 - PLM  
Project: Lower Park Heights Community  
Project No.: 21-1316

Client: ARI436

2)**Analytical Step/Method:** Wet Separation by PLM Gravimetric Technique, EPA R-04/004  
**Requirements/Comments:** Minimum 50g\*\* of dry sample. Analysis of "Sinks" only.

3)**Analytical Step/Method:** Wet Separation by PLM Gravimetric Technique, EPA R-04/004  
**Requirements/Comments:** Minimum 50g\*\* of dry sample. Analysis of "Floats" only.

4)**Analytical Step/Method:** Wet Separation by TEM Gravimetric Technique, EPA R-04/004  
**Requirements/Comments:** Minimum 50g\*\* of dry sample. Analysis of "Sinks" only.

5)**Analytical Step/Method:** Wet Separation by TEM Gravimetric Technique, EPA R-04/004  
**Requirements/Comments:** Minimum 50g\*\* of dry sample. Analysis of "Suspension" only.

\*With advance notice and confirmation by the laboratory.

\*\*Approximately 1 Liter of sample in double-bagged container (~9x6 inch bag of sample).

New York State Department of Health requires that samples originating from NYS that they categorize as Non-friable Organically Bound materials can only be confirmed as None Detected for asbestos by method 198.4. See the table below for a list of those materials. (ENVIRONMENTAL LABORATORY APPROVAL PROGRAM CERTIFICATION MANUAL - ITEM No. 198.1, Revision Date 5/6/16)

\*Asphalt Shingles, Caulking, Ceiling Tiles with Cellulose, Duct Wrap, Glazing, Mastic, Paint Chips, Resilient Floor Tiles, Rubberized Asbestos Gaskets, Siding Shingles, Vinyl Asbestos Tile, NOB materials (other than SM-V) with <10% vermiculite, Any material (Friable or NOB other than SM-V) with >10% vermiculite.

Statistically derived uncertainty with any measure should be taken into consideration when reviewing and interpreting all reported data and results. A more comprehensive listing of accuracy, precision, and uncertainty as it impacts this method is available upon request.



## Chain of Custody

–Bulk Asbestos –

<b>Contact Information</b>	
<b>Client Company:</b> <u>Aria Environmental</u>	<b>Project Number:</b> <u>21-1316</u>
<b>Office Address:</b> <u>5292 Enterprise Street</u>	<b>Project Name:</b> <u>Lower Park Heights Community</u>
<b>City, State, Zip:</b> <u>Sykesville, MD 21784</u>	<b>Primary Contact:</b> <u>Julie Fafard</u>
<b>Fax Number:</b> _____	<b>Office Phone:</b> <u>410-549-5774</u>
<b>Email Address:</b> <u>jfafard@ariaenviro.com</u>	<b>Cell Phone:</b> <u>410-262-4920</u>

<b>PLM Instructions:</b>	
<input checked="" type="checkbox"/> PLM: Bulk Asbestos Building Materials EPA 600 R-93/116, 1993	
<input type="checkbox"/> PLM: Bulk Asbestos Building Materials EPA 600 M-4/82-020, 1982	
<input type="checkbox"/> PLM: Bulk Asbestos Building Materials NIOSH 9002, 1985	
<input type="checkbox"/> PLM: Bulk Asbestos Building Materials NYSDOH-ELAP 198.1, 2002	
<input type="checkbox"/> PLM: Bulk Asbestos Building Materials NYSDOH-ELAP 198.6, 2010	
<input type="checkbox"/> TEM: Bulk Asbestos Building Materials NYSDOH-ELAP 198.4, 2009	
<input type="checkbox"/> PLM: Point Counting	<input type="checkbox"/> PLM: Analyze Until Positive (Positive Stop)
<input type="checkbox"/> PC: via ELAP 198.1	<input type="checkbox"/> AUP: by Homogenous Area as Noted
<input type="checkbox"/> PC: 400 Points	<input type="checkbox"/> AUP: by Material Type as Noted
<input type="checkbox"/> PC: 800 Points *	<input type="checkbox"/> PLM: NOB via 198.6
<input type="checkbox"/> PC: 1600 Points *	<input type="checkbox"/> PLM: Friable via EPA 600 2.3
<input type="checkbox"/> PLM: Instructions for Multi-Layered Samples	<input type="checkbox"/> If <1% by PLM, to TEM via 198.4 *
<input checked="" type="checkbox"/> Analyze and Report All Separable Layers per EPA 600	<input type="checkbox"/> If <1% by PLM, Hold for Instructions
<input type="checkbox"/> Report Composite for Drywall Systems per NESHAP	<input type="checkbox"/> PLM: Non-Building Material*** (Dust, Wipe, Tape)
<input type="checkbox"/> Report All Layers and Composite Where Applicable	<input type="checkbox"/> Soil or Vermiculite Analysis*
<input type="checkbox"/> Only Analyze and Report Specifically Noted Layer	<input type="checkbox"/> CARB 435
<b>Special Instructions:</b> _____	
* Additional charge and turnaround may be required    ** Alternative Method (ex: EPA 600/R-04/004) may be recommended by Laboratory	

<b>Turnaround Time</b>	
Preliminary Results Requested Date: _____	<input type="checkbox"/> Verbal <input checked="" type="checkbox"/> Email <input type="checkbox"/> Fax
Specific date / time	
<input type="checkbox"/> 10 Day <input checked="" type="checkbox"/> 5 Day <input type="checkbox"/> 3 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> 1 Day* <input type="checkbox"/> 12 Hour** <input type="checkbox"/> 6 Hour** <input type="checkbox"/> RUSH**	
* End of next business day unless otherwise specified. ** Matrix Dependent. ***Please notify the lab before shipping***	

<b>Chain of Custody</b>		
Relinquished (Name/Organization): <u>Julie Fafard/Aria Environmental</u>	Date: <u>08/17/21</u>	Time: <u>3:30 PM</u>
Received (Name / iATL): _____	Date: _____	Time: _____
Sample Login (Name / iATL): _____	Date: _____	Time: _____
Analysis(Name(s) / iATL): _____	Date: _____	Time: _____
QA/QC Review (Name / iATL): _____	Date: _____	Time: _____
Archived / Released: _____	QA/QC InterLAB Use: _____	Date: _____

# Sample Log

## -Bulk Asbestos -

Client: Aria Environmental Project: Lower Park Heights Community Center Pg 1

Sampling Date/Time: 8/17/21/10:00 am

Bulk Asbestos Sample Log			
Client Sample #	iATL #	Location/Description	Notes
01		South Wall Exterior/Brown Window Caulk	
02		South Wall Exterior/Clear Ledge Caulk	
03		South Wall Exterior/White Ledge Caulk	
04		South Wall Exterior/White Expansion Joint Caulk	
05		South Wall Exterior/Pink Expansion Joint Caulk	
06		South Wall Exterior/Gray Door Caulk	
07		Exterior Real Entry/Beige Door Caulk	
08		Exterior Rear Entry/Black Door Caulk	
09		Roof/Black Tar	
10		Roof/Gray Tar	
11		Roof/Shingle Flashing and Tar	
12		Roof/Gray Window Caulk	
13		Roof over entry/Black Caulk	
14		Roof over Entry/White Caulk	
15		Roof ove entry/Black Tar	
16		Roof/Black Bubble Tar	



# Sample Log

## -Bulk Asbestos -

Client: Aria Environmental Project: Park Heights Community Center PG 2

Sampling Date/Time: 8/17/21/10:00AM

Bulk Asbestos Sample Log			
Client Sample #	iATL #	Location/Description	Notes
17		Roof/Drain Pad at Skylight/Black Tar	
18		Roof/Drain Pad at Skylight/Orange Shingle	
19		Roof/Access Hatch/White Tape	
20		Exterior East Side/Brown Window Caulk	
21		Exterior East Side/White Ledge Caulk	
22		Exterior East Side/Red Penetration Sealant	
23		Exterior East Side/White Caulk	
24		Exterior East Side/Gray Door Caulk	
25		North Entrance/Black Sidewalk Caulk	
26		North Entrance/Rubbery White Caulk	
27		North Entrance/Black Fiberboard	
28		North Entrance/Black Caulk	
29		North Entrance/White Door Caulk	
30		North Entrance/Brown Door Caulk	
31		Exterior NE/Door Caulk	
32		Exterior NE/Window Caulk	



# Sample Log

## -Bulk Asbestos -

Client: Aria Environmental Project: Park Heights Community Center PG 3

Sampling Date/Time: \_\_\_\_\_

Bulk Asbestos Sample Log			
Client Sample #	iATL #	Location/Description	Notes
33		Exterior NE/Black Vapor Barrier	
34		Interior Lobby/12x12 Brown Mottled FT and Black Mastic	
35		Interior Lobby/12x12 Beige/White FT and Black Mastic	
36		Interior Lobby/12x12 White/Brown FT and Black Mastic	
37		Interior Lobby/12x12 gray FT and Black Mastic	
38		Interior Lobby/2x4 Divot and Dot Ceiling Tile	
39		Interior Lobby.2x4 Fissure and Dot Ceiling Tile	
40		Interior Lobby/Wall Caulk	
41		Vestibule/Non Skid Floor and Glue	
42		Vestibule/Leveling Compound	
43		Vestibule/Door Caulk	
44		Vestibule/Concrete Coating	
45		Interior Lobby/Brown Cove Base Mastic	

**Attachment C:**  
**Lead-Based Paint Survey Data**



Lower Park Height Community Center  
 3901 Reisterstown Road  
 Baltimore, Maryland 21215

PROJECT: 21-1316 INSPECTOR: J. Fafard  
 DATE: 08/17/2021  
 EQMNT: NITON XLP300A - Positive Lead is >0.7 mg/cm<sup>2</sup>

Reading No	Component	Substrate	Side	Color	Room	Results	PbC	PbC Error
1							1.84	0
2	Calibration					Positive	1.2	0.4
3	Calibration					Positive	1.1	0.4
4	Calibration					Positive	1	0.1
5	WALL	CONCRETE	C	TAN	ROOF	Negative	< LOD	0.03
6	DOOR	METAL	B	BROWN	ROOF	Negative	< LOD	0.04
7	HVAC	METAL	CENTER	GRAY	ROOF	Negative	< LOD	0.03
8	BEAM	METAL	CENTER	GRAY	ROOF	Negative	< LOD	0.33
9	TRANE	METAL	CENTER	GREEN	ROOF	Negative	< LOD	0.25
10	BEAM	METAL	CENTER	GRAY	ROOF	Negative	< LOD	0.03
11	BEAM	METAL	CENTER	BLACK	ROOF	Negative	< LOD	0.44
12	DOOR	METAL	A	GRAY	EXTERIOR	Negative	< LOD	0.03
13	DOOR	METAL	A	GRAY	EXTERIOR	Negative	< LOD	0.04
14	DOOR	METAL	A	GRAY	EXTERIOR	Negative	< LOD	0.03
15	DOOR FRAME	METAL	A	GRAY	EXTERIOR	Negative	< LOD	0.03
16	DOOR FRAME	METAL	A	GRAY	EXTERIOR	Negative	< LOD	0.03
17	DOOR	METAL	D	GRAY	EXTERIOR	Negative	< LOD	0.12
18	DOOR FRAME	METAL	D	GRAY	EXTERIOR	Negative	< LOD	0.05
19	DOOR ROLL UP	METAL	D/A	BROWN	EXTERIOR	Negative	< LOD	0.06
20	DOOR FRAME	METAL	D/A	BROWN	EXTERIOR	Negative	< LOD	0.03
21	VENT	METAL	D/A	BROWN	EXTERIOR	Negative	< LOD	0.24
22	DOOR	METAL	B	GRAY	EXTERIOR	Negative	< LOD	0.03
23	DOOR FRAME	METAL	B	GRAY	EXTERIOR	Negative	< LOD	0.03
24	DOOR FRAME	METAL	C	BROWN	EXTERIOR	Negative	< LOD	0.03
25	WALL	METAL	C	BROWN	EXTERIOR	Negative	< LOD	0.03
26	DOOR	METAL	C/D	GRAY	EXTERIOR	Negative	< LOD	0.12
27	DOOR FRAME	METAL	C/D	GRAY	EXTERIOR	Negative	< LOD	0.48
28	DOOR	METAL	C	GRAY	EXTERIOR	Negative	< LOD	0.03
29	WINDOW FRAME	METAL	C	BROWN	EXTERIOR	Negative	< LOD	0.03
30	DOOR	METAL	B	BEIGE	VESTIBLE	Negative	< LOD	0.13
31	DOOR FRAME	METAL	B	BEIGE	VESTIBLE	Negative	< LOD	0.03
32	WALL VENT	METAL	B	SILVER	VESTIBLE	Negative	< LOD	0.03
33	FLOOR	CONCRETE		BLACK	VESTIBLE	Negative	< LOD	0.03
34	DOOR	METAL	D	BEIGE	VESTIBLE	Negative	< LOD	0.03
35	DOOR FRAME	METAL	D	BEIGE	VESTIBLE	Negative	< LOD	0.03
36	DOOR FRAME	METAL	C	BLACK	VESTIBLE	Negative	< LOD	0.03
37	WALL	DRYWALL	B	BEIGE	LOBBY	Negative	< LOD	0.03
38	WINDOW FRAME	METAL	B	ORANGE	LOBBY	Negative	< LOD	0.33
39	ELEVATOR DOOR FRAME	METAL	A	ORANGE	LOBBY	Negative	< LOD	0.03
40	ELEVATOR DOOR	METAL	A	ORANGE	LOBBY	Negative	< LOD	0.03
41	WALL	DRYWALL	A	TAN	LOBBY	Negative	< LOD	0.03
42	Calibration					Positive	1	0.3



Lower Park Height Community Center  
3901 Reisterstown Road  
Baltimore, Maryland 21215

PROJECT: 21-1316 INSPECTOR: J. Fafard  
DATE: 07/17/2021  
EQMNT: NITON XLP300A - Positive Lead is  $>0.7 \text{ mg/cm}^2$

Reading No	Component	Substrate	Side	Color	Room	Results	PbC	PbC Error
43	Calibration					Positive	1.1	0.4
44	Calibration					Positive	1.2	0.4

**Attachment D:**  
**Room Assessment Table**



Lower Park Height Community Center  
 3901 Reisterstown Road  
 Baltimore, Maryland 21215

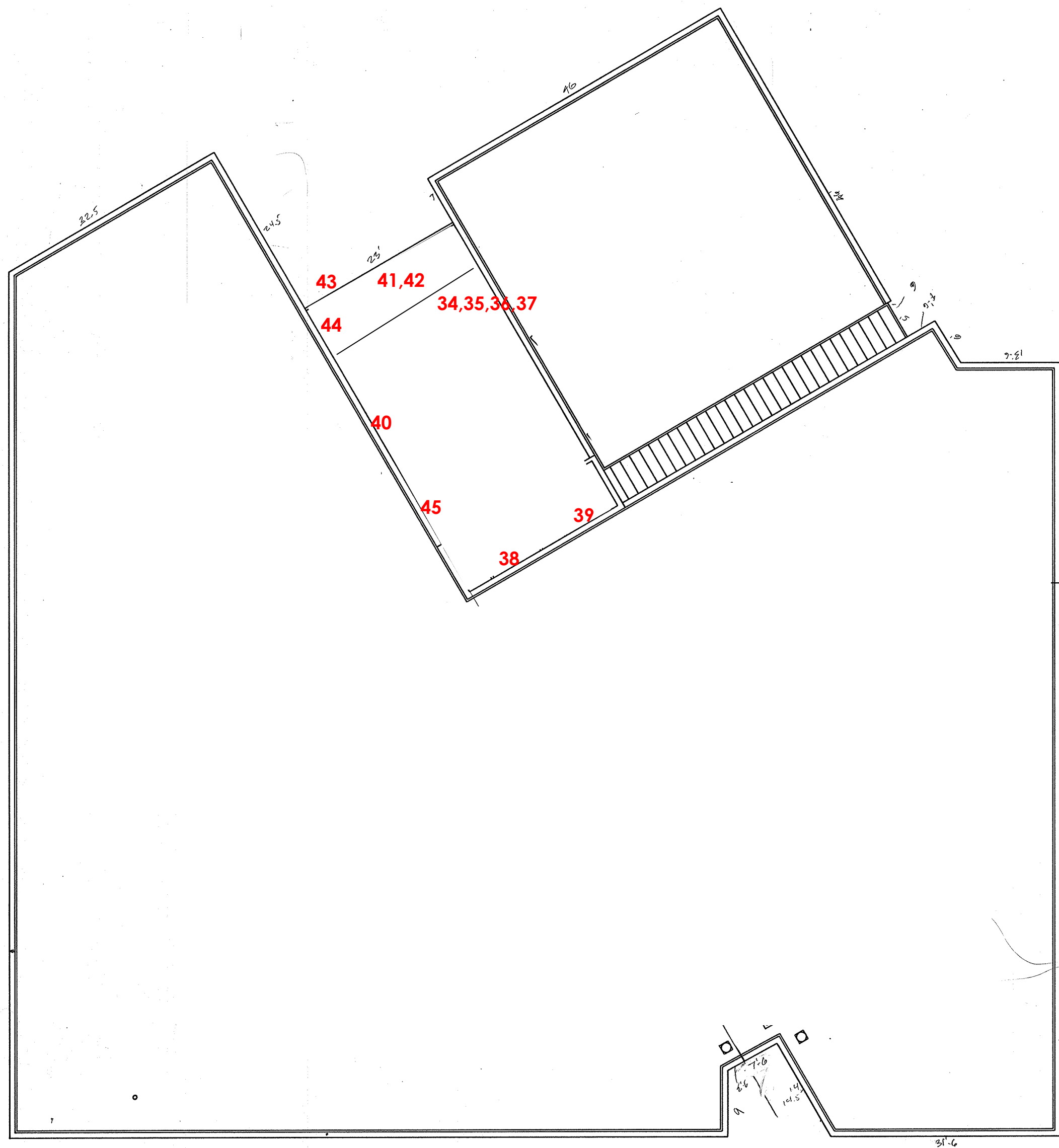
PROJECT: 21-1316 INSPECTOR: J. Fafard & J Halstead  
 DATE: 07/17/2021

Room	Description	Hazard	Qty	Units
Exterior South Wall	Exterior Fire Door	Regulated Waste: Asbestos	1	EA
	Incandescent Lights	Universal Waste	5	
	Flood Lights	Universal Waste	4	
Exterior South Side Entry	Exterior Fire Doors	Regulated Waste: Asbestos	2.5	EA
East Side Exterior	Flood Lights	Universal Waste	3	EA
West Side Exterior	Exterior Fire Door	Regulated Waste: Asbestos	1	EA
North Side Exterior	Exterior Fire Door	Regulated Waste: Asbestos	1	EA
	White caulkwith black tar	Regulated Waste: Asbestos		
	Black Tar	Regulated Waste: Asbestos	150	
	Halogen Lights	Universal Waste	6	EA
Northeast Front Courtyard	Exterior Fire Doors	Regulated Waste: Asbestos	3	EA
	Halogen Lights	Universal Waste	1	EA
	Old Fixture	Universal Waste	1	EA
Roof	Fire Door	Regulated Waste: Asbestos	1	EA
	Trane HVAC w/ Vibration Damp	Ozone Depleting Substance	6	EA
	Black Tar at Skylight	Regulated Waste: Asbestos		
Lower Roof	Trane HVAC	Ozone Depleting Substance		
Entry Vestibule	Single Fire Door to Stairs	Regulated Waste: Asbestos	1	EA
	Exit/Emergency Lights	Universal Waste: Batteries	1	EA
	Automatic door closers	Regulated Waste: Oil	4	EA
Entry Lobby	12x12 Brown Mottled FT and Black Mastic	Regulated Waste: Asbestos	670	SF
	12x12 Beige w/ white FT and Black Mastic	Regulated Waste: Asbestos	88	SF
	12x12 Gray FT and Mastic	Regulated Waste: Asbestos	3	SF
	12x12 White w/Brown FT and Black Mastic	Regulated Waste: Asbestos	7	SF
	Wall Caulk	Regulated Waste: Asbestos	100	LF
	Automatic door closers	Regulated Waste: Oil	2	EA
	LED Pendulum Lights	Universal Waste	6	EA

**Attachment E:**  
**Asbestos Sample Location Plan**

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**LEGEND**  
 ## - ASBESTOS SAMPLE LOCATION



GEORGE G. BALOG  
 DIRECTOR, DEPARTMENT OF PUBLIC WORKS

DAVE L. MONTGOMERY  
 HEAD, BUREAU OF CONSTRUCTION MANAGEMENT

GEORGE H. BALL  
 HEAD, BUREAU OF GENERAL SERVICES

**APPROVED**

DIRECTOR, DEPARTMENT OF PUBLIC WORKS  
*George G. Balog*  
 HEAD, BUREAU OF CONSTRUCTION MANAGEMENT

HEAD, BUREAU OF GENERAL SERVICES

Department of Public Works

Bureau of Construction Management

Division of Public Building Construction

**LOWER PARK HEIGHTS MULTI-PURPOSE CENTER**  
 3901 REISTERSTOWN ROAD BALTIMORE, MARYLAND 21215

For the Mayor and the City Council of Baltimore  
 Kurt L. Schmoke, Mayor

**FIRST FLOOR**

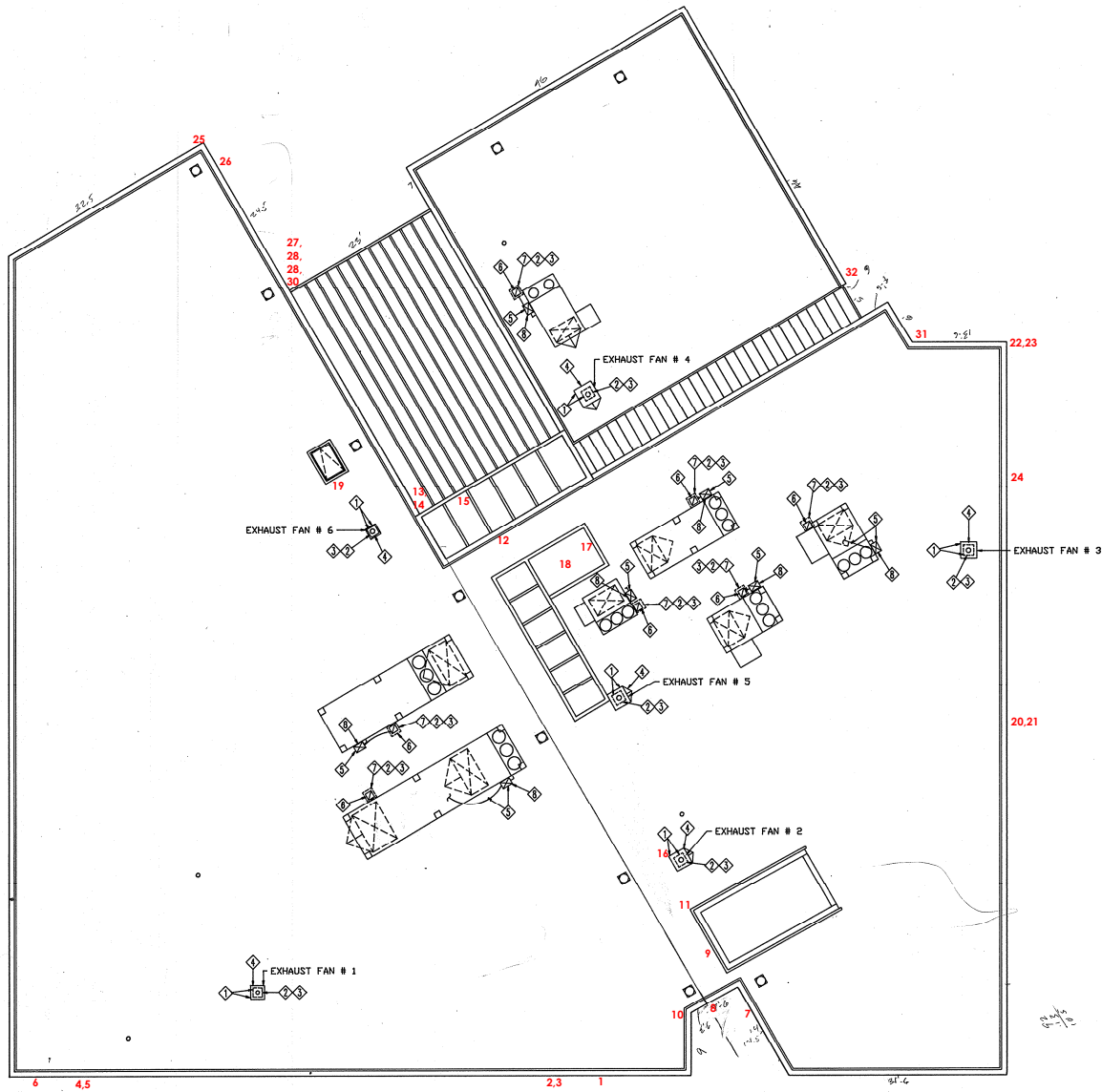
Marshall Craft Associates, Inc.  
 6112 York Road Baltimore, Maryland 21212 (301)532-3131

Bhargava International, Inc.  
 2132 Mt. Hebron Dr. Ellicott City, Maryland 21043  
 (301)461-6329

Sheet E1

Date 08/15/89

MCA JOB NO. 89021.01



**LEGEND**  
## - ASBESTOS SAMPLE LOCATION



GEORGE G. BALOG  
DIRECTOR, DEPARTMENT OF PUBLIC WORKS  
DAVE L. MONTGOMERY  
HEAD, BUREAU OF CONSTRUCTION MANAGEMENT  
GEORGE H. BALL  
HEAD, BUREAU OF GENERAL SERVICES

**APPROVED**  
DIRECTOR, DEPARTMENT OF PUBLIC WORKS  
*George H. Ball*  
HEAD, BUREAU OF CONSTRUCTION MANAGEMENT  
HEAD, BUREAU OF GENERAL SERVICES

Department of Public Works  
Bureau of Construction Management  
Division of Public Building Construction  
**LOWER PARK HEIGHTS MULTI-PURPOSE CENTER**  
3901 REISTERSTOWN ROAD BALTIMORE, MARYLAND 21215  
For the Mayor and the City Council of Baltimore  
Kurt L. Schmoke, Mayor

**ROOF PLAN AND NOTES**  
MARSHAL CRAFT ASSOCIATES, INC.  
6112 YORK ROAD BALTIMORE, MARYLAND 21212 (301) 632-3131  
BHARGAVA INTERNATIONAL, INC.  
2133 M. HOLBROOK DR. ELICOTT CITY, MARYLAND 21043 (301) 221-6229  
Sheet E1  
Date 08/15/09

MCA JOB NO. 080109

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
  - 1. Project information.
  - 2. Work covered by Contract Documents.
  - 3. Contractor's use of site and premises.
  - 4. Coordination with occupants.
  - 5. Work restrictions.
  - 6. Specification and Drawing conventions.

1.3 PROJECT INFORMATION

- A. Project Identification:

Lower Park Heights Community Center MPC Renovations  
3939 Reisterstown Road  
Baltimore, Maryland 21215
- B. Owner: The City of Baltimore, Maryland
  - 1. Owner's Representative: Mr. Husam Albattrawi
- C. Architect:

PRIME AE Group, Inc.  
5521 Research Park Drive, Suite 300  
Baltimore, Maryland 21228  
Contact: Mr. Doug Hays, P.E.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and includes, but is not limited to, the following:
  - 1. Roof Replacement
    - a. Removal of the existing roof system (which includes the most recent being installed over the original roof and the areas of the most recent repairs using a modified bitumen system)

- b. Installation of a 60 MIL PVC membrane system over cover board and tapered insulation, including all flashings, walkway pads and parapet caps - roofing installation will include the roof access stairway and elevator cap.
  - c. Replacement of all equipment curbs (raising equipment where necessary to accommodate code compliant roof insulation thickness)
  - d. Preparation and painting of all existing mechanical equipment steel supports
  - e. Removal and replacement of all roof drains and scuppers. Enlarge scuppers at Terrace Roof.
  - f. Probe/scoping of all existing roof drain conductors from roof drains to the connection with the collection system at grade to confirm conduction capability.
  - g. Install new service line housings at each RTU to accommodate all cabling to each unit (BOD: Medium size vault by Roof Penetration Housing, LLC)
  - h. Install new gas piping supports for existing LNG line.
  - i. Prepare, prime, and re-paint existing gas piping. Re-label gas piping.
  - j. Install new condensate piping supports from units to nearest roof drain
2. Building Envelope:
- a. Removal of the existing EIFS system on the Main Roof stair tower and replacement with new EIFS finish system after the new roof flashings have been installed at the base of the enclosure walls
  - b. Removal and reinstallation of the existing fence around the Terrace roof. Fence shall be re-installed at the same height as the current condition
  - c. Removal and replacement of a portion of the concrete walk at the Main Entry
  - d. Removal and replacement of the storefront vestibule system, including both wall assemblies and the framed and glazed ceiling component
  - e. Removal of plexiglass panels over the existing windows to allow repair work. Panels shall be reinstalled after window repair work is completed
  - f. Removal and replacement of all window perimeter backer rods and sealants
  - g. Removal and replacement of all storefront system backer rods and sealants
  - h. Removal and replacement of all sealants on the existing skylights
  - i. Removal and replacement of all window assembly glazing beads
  - j. Cleaning of all exterior wall masonry, including all windowsills.
  - k. Application of water repellent to all exterior masonry surfaces

- l. Removal and replacement of all existing backer rods and sealant from masonry control joints (full height)
  - m. Removal and replacement of existing steel lintels above doors where indicated on Drawings.
  - n. Masonry repairs and cleaning.
3. Hazardous Waste Removal
- a. Removal and disposal of asbestos-containing roofing tar, black roof caulk, shingled drain pad on roof, black floor mastic in the lobby, and tan wall caulk in the lobby
  - b. Removal and disposal of assumed asbestos-containing fire doors
  - c. Removal and disposal of battery containing lighted exit signs / emergency lights as universal waste
  - d. Removal and disposal of all oil-containing automatic door closers as oil containing waste
  - e. Removal and disposal of halogen lights and LED lights and possible mercury containing waste.
4. Electrical work.

#### 1.5 CONTRACTOR'S USE OF SITE AND PREMISES

- A. Restricted Use of Site: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.
- B. Limits on Use of Site: Limit use of Project site to Work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
  1. Limits on Use of Site: Confine construction operations to areas indicated on the Drawings.
  2. Driveways, Walkways and Entrances: Keep driveways, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or for storage of materials.
    - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
    - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

- C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.
- D. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by construction operations.

#### 1.6 COORDINATION WITH OCCUPANTS

- A. Partial Owner Occupancy: Owner will occupy the premises during entire construction period, with the exception of areas under construction. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations. Maintain existing exits unless otherwise indicated.
  - 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.
  - 2. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.

#### 1.7 WORK RESTRICTIONS

- A. Comply with restrictions on construction operations.
  - 1. Comply with limitations on use of public streets, work on public streets, rights of way, and other requirements of authorities having jurisdiction.
- B. On-Site Work Hours:
  - 1. Day Time Hours: Ordinary working hours.
  - 2. Weekend Hours and Nights: Permitted. Coordinate with the Owner's Representative. Indicate weekend hours and nights to be worked on the Construction Progress Schedule.
  - 3. Hours for Utility Shutdowns: Weekends or nights when Owner's operations are not affected.
  - 4. Hours for Noisy Operations: Weekends or nights when Owner's operations are not affected.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging for temporary utility services according to requirements indicated:
  - 1. Notify Architect and Owner's Representative not less than seven (7) days in advance of proposed utility interruptions.
  - 2. Obtain Owner's written permission before proceeding with utility interruptions.
- D. Noise, Vibration, Dust, and Odors: Coordinate operations that may result in high levels of noise and vibration, dust, odors, or other disruption to Owner occupancy with Owner. Perform these operations on weekends or nights as arranged in advance.

- E. Smoking and Controlled Substance Restrictions: Use of tobacco products, alcoholic beverages, and other controlled substances on Owner's property is not permitted.

#### 1.8 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
  - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
  - 2. Text Color: Text used in the Specifications, including units of measure, manufacturer and product names, and other text may appear in multiple colors or underlined as part of a hyperlink; no emphasis is implied by text with these characteristics.
  - 3. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 00 Contracting Requirements: General provisions of the Contract, including General and Supplementary Conditions, apply to all Sections of the Specifications.
- C. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- D. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
  - 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
  - 2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

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## SECTION 012500 – SUBSTITUTION PROCEDURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
  - 1. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

#### 1.3 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents.
  - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
  - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required to meet other Project requirements but may offer advantage to Contractor or Owner.

#### 1.4 ACTION SUBMITTALS

- A. Substitution Requests: Submit documentation identifying product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
  - 1. Substitution Request Form: Use form acceptable to Architect.
  - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
    - a. Statement indicating why specified product or fabrication or installation method cannot be provided, if applicable.
    - b. Coordination of information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.

- c. Detailed comparison of significant qualities of proposed substitutions with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes, such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
  - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
  - e. Samples, where applicable or requested.
  - f. Certificates and qualification data, where applicable or requested.
  - g. List of similar installations for completed projects, with project names and addresses as well as names and addresses of architects and owners.
  - h. Material test reports from a qualified testing agency, indicating and interpreting test results for compliance with requirements indicated.
  - i. Research reports evidencing compliance with building code in effect for Project..
  - j. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
  - k. Cost information, including a proposal of change, if any, in the Contract Sum.
  - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, except as indicated in substitution request, is compatible with related materials and is appropriate for applications indicated.
  - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within **seven** days of receipt of a request for substitution. Architect will notify Contractor through Construction Manager of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
  - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

## 1.5 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

- A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

1.7 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

- a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
- b. Substitution request is fully documented and properly submitted.
- c. Requested substitution will not adversely affect Contractor's construction schedule.
- d. Requested substitution has received necessary approvals of authorities having jurisdiction.
- e. Requested substitution is compatible with other portions of the Work.
- f. Requested substitution has been coordinated with other portions of the Work.
- g. Requested substitution provides specified warranty.
- h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

- B. Substitutions for Convenience: Requires Architect's and Owner's approval.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

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SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. The City of Baltimore, Department of Public Works, *Specifications for Material, Highways, Bridges, Utilities and Incidental Structures*, 2006 ("Green Book").

1.02 SUMMARY

A. Section Includes:

- 1. Contract Modification Procedures:
  - a. Submittals
  - b. Documentation of Change in Contract Sum and Contract Time
- 2. Contract Modification Pricing Guidelines
- 3. Requests for Information and Supplemental Instructions
- 4. Change of Contract Procedures
- 5. Allowances
- 6. Construction Change Directive
- 7. Change of Contract:
  - a. Stipulated Price Change Order
  - b. Unit Price Change Order
  - c. Time and Material Change Order
  - d. Execution of Change of Contract written orders
- 8. Correlation of Contractor Submittals

B. Related Sections:

- 1. Section 013300 - Submittal Procedures: Construction Progress Schedules and miscellaneous submittals.

2. Section 016000 - Product Requirements: Product options and substitutions.
3. Section 017700 - Closeout Procedures: Project Record Documents.

### 1.03 SUBMITTALS

- A. Submit name of the individual authorized to receive change documents, and be responsible for informing others in Contractor's employ and Subcontractors of changes to the Work.
- B. Change of Contract Forms: AIA Documents

### 1.04 DOCUMENTATION OF CHANGE IN CONTRACT SUM AND CONTRACT TIME

- A. Maintain detailed records of work performed on a time and material basis. Provide full information required for evaluation of proposed changes, and to substantiate costs of changes in the Work.
- B. Document each quotation for a change in Cost or Time with sufficient data to allow evaluation of the quotation.
- C. Provide additional data to support computations as follows:
  1. Quantities of products, labor, and equipment.
  2. Taxes, insurance, and bonds.
  3. Overhead and profit.
  4. Justification for change in Contract Time.
  5. Credit for deletions from Contract, similarly documented.
- D. Support each claim for additional costs, and for work done, with additional information:
  1. Origin and date of claim.
  2. Dates and times work was performed, and by whom.
  3. Time records and wage rates paid.
  4. Invoices and receipts for products, equipment, and subcontracts, similarly documented.

1.05 MINOR CHANGES IN THE WORK

- A. The Architect will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or Contract Time, on AIA Form G710, Architect's Supplemental Instructions.

1.06 REQUESTS FOR INFORMATION AND SUPPLEMENTAL INSTRUCTIONS

- A. Definition: Requests for Information (RFI), is a formal process used during bidding and during construction to facilitate communication between the Contractor and the Architect with regard to requests for information and clarification of the intent of the Contract Documents.
  - 1. Request for Information form may be used during bidding phase. Refer to Invitation to Bid and Instructions to Bidders.
- B. Procedure:
  - 1. Conditions Requiring Clarification of the Contract Documents: Submit a Request for Information to the Architect.
    - a. Submit Requests for Information from Contractor's office or field office only. Requests for Information submitted directly from subcontractors or suppliers will not be accepted.
    - b. Generate Requests for Information by one source per Project and number accordingly.
    - c. Submit one request for information per form.
  - 2. The Architect will review formal requests from the Contractor with reasonable promptness and the Contractor will be notified in writing of decisions made, via the RFI form.
    - a. The Architect's response shall not be considered as a Change Order or Change Directive, nor does it authorize changes in the Contract Sum or Contract Time.
  - 3. Maintain log of Requests for Information sent to, and responses from the Architect.
  - 4. Scheduling, Costing, and Owner Furnished Products/Work Coordination: Direct to the Architect.
- C. RFI Form: Submit requests for information on attached Request for Information form, attached at end of this Section. The Architect will not respond to requests for information unless this format is utilized.
  - 1. Where submittal form does not provide space needed for complete information, additional sheets may be attached.

1.07 CHANGE PROCEDURES

- A. The Architect will advise of minor changes in the Work not involving an adjustment to Contract Sum or Contract Time as authorized by the Owner/Architect Agreement, and by issuing supplemental instructions on RFI form attached.
- B. The Architect may issue a Proposal Request, Notice of Change which includes a detailed description of a proposed change with supplementary or revised Drawings and specifications. Contractor will prepare and submit an estimate within 10 days.
- C. The Contractor may propose a change by submitting a request for change to the Architect, describing the proposed change and its full effect on the Work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation and a statement describing the effect on Work by separate or other contractors. Document requested substitutions in accordance with Section 013300.

1.08 CONTRACT MODIFICATION PRICING GUIDELINES

- A. For each change, the Contractor shall furnish a detailed, written proposal itemized according to the City of Baltimore, Department of Public Works, *Specifications for Material, Highways, Bridges, Utilities and Incidental Structures*, 2006 ("Green Book") Section 012646-Construction Change Orders and Directive, in regards to Contract Modification pricing Guidelines.

1.09 CORRELATION OF CONTRACTOR SUBMITTALS

- A. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change of Contract as a separate line item and adjust the Contract Sum.
- B. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
- C. Promptly enter changes in Project Record Documents.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION 012600



CONTRACTOR'S REQUEST FOR INFORMATION -  
RFI

AND ARCHITECT'S SUPPLEMENTAL  
INSTRUCTIONS - ASI

Date	# of Pages
To	From
Co.	Co.
Phone #	Phone #
Fax #	Fax #

Project: \_\_\_\_\_ RFI No.: \_\_\_\_\_

Owner: \_\_\_\_\_ Date of Request: \_\_\_\_\_

To: \_\_\_\_\_ Contractor: \_\_\_\_\_  
(Architect's Representative)

Project No.: \_\_\_\_\_ Contractor's Representative: \_\_\_\_\_

Architect's Fax No.: \_\_\_\_\_ Fax No.: \_\_\_\_\_

---

Information Requested: (Re: Specification Section/Drawing/Detail Number)

Requested by: \_\_\_\_\_

---

Architect's Supplemental  
Instructions:

---

Attachments:

Reply By: \_\_\_\_\_

The Work shall be carried out in accordance with these supplemental instructions issued in accordance with the Contract Documents without change in Contract Sum or Contract Time. Prior to proceeding with these instructions, indicate acceptance of these instructions below Work as consistent with the Contract Documents and return a copy to the Architect.

---

Supplemental Instructions Issued:

Supplemental Instructions Accepted:

By: \_\_\_\_\_

By: \_\_\_\_\_

Architect

Date

Contractor

Date

Cc:  Owner  Architect  Consultant  Contractor  Field  Other: \_\_\_\_\_

---

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.3 DEFINITIONS

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
  - 1. Coordinate line items in the schedule of values with items required to be indicated as separate activities in Contractor's construction schedule.
  - 2. Submit the schedule of values to Architect at earliest possible date, but no later than seven calendar days before the date scheduled for submittal of initial Applications for Payment.
- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
  - 1. Identification: Include the following Project identification on the schedule of values:
    - a. Project name and location.
    - b. Name of Architect.
    - c. Architect's Project number.
    - d. Contractor's name and address.
    - e. Date of submittal.
  - 2. Arrange schedule of values consistent with format of AIA Document G703.
  - 3. Arrange the schedule of values in tabular form, with separate columns to indicate the following for each item listed:
    - a. Related Specification Section or Division.

- b. Description of the Work.
  - c. Name of subcontractor.
  - d. Name of manufacturer or fabricator.
  - e. Name of supplier.
  - f. Change Orders (numbers) that affect value.
  - g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent. Round dollar amounts to whole dollars, with total equal to Contract Sum.
    - 1) Labor.
    - 2) Materials.
    - 3) Equipment.
4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
  5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
    - a. Differentiate between items stored on-site and items stored off-site.
  6. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
  7. Purchase Contracts: Provide a separate line item in the schedule of values for each purchase contract. Show line-item value of purchase contract. Indicate Owner payments or deposits, if any, and balance to be paid by Contractor.
  8. Overhead Costs: Include total cost and proportionate share of general overhead and profit for each line item.
  9. Overhead Costs: Show cost of temporary facilities and other major cost items that are not direct cost of actual work-in-place as separate line items.
  10. Closeout Costs. Include separate line items under Contractor and principal subcontracts for Project closeout requirements in an amount totaling five percent of the Contract Sum and subcontract amount.
  11. Schedule of Values Revisions: Revise the schedule of values when Change Orders or Construction Change Directives result in a change in the Contract Sum. Include at least one separate line item for each Change Order and Construction Change Directive.

#### 1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

- C. Payment Application Times: Submit Application for Payment to Architect by the last of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.
1. Submit draft copy of Application for Payment seven days prior to due date for review by Architect.
- D. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as forms for Applications for Payment.
1. Other Application for Payment forms proposed by the Contractor shall be acceptable to Architect and Owner. Submit forms for approval with initial submittal of schedule of values.
- E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
  2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
  3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
  4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.
- F. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.
1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment for stored materials.
  2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
  3. Provide summary documentation for stored materials indicating the following:
    - a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
    - b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
    - c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.
- G. Transmittal: Submit three signed and notarized original copies of each Application for Payment to the Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- H. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
  2. When an application shows completion of an item, submit conditional final or full waivers.
  3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
  4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
  5. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.
- I. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
  2. Schedule of values.
  3. Contractor's construction schedule (preliminary if not final).
  4. Combined Contractor's construction schedule (preliminary if not final) incorporating Work of multiple contracts, with indication of acceptance of schedule by each Contractor.
  5. Products list (preliminary if not final).
  6. Sustainable design action plans, including preliminary project materials cost data.
  7. Schedule of unit prices.
  8. Submittal schedule (preliminary if not final).
  9. List of Contractor's staff assignments.
  10. List of Contractor's principal consultants.
  11. Copies of building permits.
  12. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
  13. Initial progress report.
  14. Report of preconstruction conference.
  15. Certificates of insurance and insurance policies.
  16. Performance and payment bonds.
  17. Data needed to acquire Owner's insurance.
- J. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
  2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

- K. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
  2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
  3. Updated final statement, accounting for final changes to the Contract Sum.
  4. AIA Document G706.
  5. AIA Document G706A.
  6. AIA Document G707.
  7. Evidence that claims have been settled.
  8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
  9. Final liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

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## SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

### PART 1 GENERAL

#### 1.01 RELATED DOCUMENTS

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

#### 1.02 SUMMARY

- A. Section Includes:
  - 1. Coordination
  - 2. Administrative Procedures
  - 3. Communications
  - 4. Meetings:
    - a. Pre-construction Meetings
    - b. Progress Meetings
    - c. Preinstallation Meetings
  - 5. Daily Work Report
  - 6. Coordination Drawings
  - 7. General Installation Provisions
  - 8. Cleaning and Protection

#### 1.03 COORDINATION

- A. Coordinate construction activities included in various Sections of these Specifications to assure efficient and orderly installation of each component. Coordinate construction operations included under different Sections that depend on each other for proper installation, connection, and operation.
  - 1. Where installation of one component depends on installation of other components before or after its own installation, schedule activities in the sequence required to obtain the best results.
  - 2. Coordinate installation of different components to assure maximum accessibility for maintenance, service and repair.
  - 3. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
  - 4. Coordinate space requirements and installation of mechanical and electrical work which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with line of building. Utilize spaces

efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

5. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
  6. Coordinate completion and cleanup of Work of separate Sections in preparation for Substantial Completion and for portions of Work designated for Owner's Partial Occupancy.
  7. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.
  8. Make provisions to accommodate items scheduled for later installation.
- B. Prepare memoranda for distribution to each party involved outlining required coordination procedures. Include required notices, reports, and attendance at meetings.
1. Prepare similar memoranda for the Owner and separate Contractors where coordination of their Work is required.

#### 1.04 ADMINISTRATIVE PROCEDURES

- A. Coordinate scheduling and timing of administrative procedures with other activities to avoid conflicts and ensure orderly progress of the Work. Such activities include; but are not limited to, the following:
1. Preparation of Contractor's Construction Schedules
  2. Preparation of the Schedule of Values
  3. Installation and Removal of Temporary Facilities and Controls
  4. Delivery and Processing of Submittals
  5. Progress Meetings
  6. Project Closeout Activities
- B. Staff Names: Within 15 days of Notice to Proceed, submit a list of Contractor's staff assignments, including Superintendent and personnel at the site; identify individuals, their duties and responsibilities, addresses and telephone numbers.

#### 1.05 COMMUNICATIONS

- A. Project Identification:
1. All correspondence pertaining to this Project shall contain the Project Name and the date written or prepared.
  2. All written communication including transmittals, submittals, Requests for Information (RFI), electronic / e-mail correspondence shall identify the Project with the Architect's Project Number in the subject, title or reference line or elsewhere in the text where appropriate. The Project Number can be found on the Drawing Title Block (below the Sheet No.) or in the first line of Specification footer.
- B. The General Contractor shall forward all communications to the Owner through the Architect.
- C. Request for Information (RFI) and Supplemental Instructions:

1. It shall be the Contractor's obligation to check the Contract Documents and to request of the Architect any clarification necessary and in time so as not to delay the progress of the work.
2. Refer to Section 01 26 00 Contract Modification Procedures for sample RFI form.

#### 1.06 MEETINGS

##### A. General:

1. Before any work is started, responsible representatives for the General Contractor, and subcontractors, including the designated job superintendent for the Project, shall meet at the site with the Architect and the Owner's Representative to review the requirements and conditions under which the Project will be performed.
2. In addition to progress meetings, meetings for review of the materials to be used, procedures to be followed, and an inspection of conditions by the Owner's Representative and the Architect will be required prior to cutting any existing concrete or masonry, placing any concrete, and applying any paint materials. Coordinate with the Architect to schedule such meetings at least forty-eight (48) hours in advance of the proposed time for the meeting to ensure that both parties will be available or to reschedule if they are not. The Contractor shall, in addition, notify the Architect at least forty-eight (48) hours in advance as to the exact time when such operations will be started.

##### B. Pre-Construction Meeting:

1. The General Contractor shall schedule a meeting no later than 15 days after Notice of Award to be held at the Project site or another convenient location to review responsibilities and personnel assignments.
2. Attendance Required: Owner, Owner's Representative, Architect and their Consultants and the Contractor and its Superintendent.
  - a. Major subcontractors, manufacturers and suppliers as may be relevant.
  - b. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the work.
3. Agenda: Discuss items of significance that could affect progress, including the following Execution of Owner-Contractor Agreement.
  - a. Submission of executed bonds and insurance certificates.
  - b. Distribution of Contract Documents.
  - c. Submission of lists of Subcontractors, Products, Schedule of Values, and Progress Schedule.
  - d. Designation of personnel representing the parties in Contract.
  - e. Use of premises, parking, office, storage areas, deliveries and security
  - f. Progress cleaning.
  - g. Working hours.
  - h. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract Closeout procedures.
  - i. Tentative construction schedule.

- 1) Critical work sequencing and long-lead items.
  - 2) Phasing, including scaffolding work.
  - j. Construction waste management and recycling.
  4. Record minutes and distribute copies within one day after meeting faxed to participants, with one copy to Architect, Owner, participants, and those affected by decisions made.
- C. Progress Meetings:
1. Progress meetings shall be held at the site under the direction of the Architect. The General Contractor and other major subcontractors shall attend or be represented by someone fully empowered to speak for and commit them to any agreement reached.
  2. The General Contractor shall schedule and administer meetings throughout progress of the Work at weekly intervals. The General Contractor shall make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
    - a. Attendance Required: Representatives of Owner and Architect, the General Contractor's Job Superintendent, major subcontractors and suppliers as appropriate to agenda topics for each meeting.
  3. Agenda:
    - a. Review minutes of previous meetings.
    - b. Review of Work progress.
    - c. Field observations, problems, and decisions.
    - d. Identification of problems which impede planned progress.
    - e. Review of submittals schedule and status of submittals.
    - f. Review of off-site fabrication and delivery schedules.
    - g. Maintenance of progress schedule.
    - h. Corrective measures to regain projected schedules.
    - i. Planned progress during succeeding work period.
    - j. Coordination of projected progress.
    - k. Maintenance of quality and work standards.
    - l. Effect of proposed changes on progress schedule and coordination.
    - m. Progress cleaning.
    - n. Other business relating to Work.
- D. Pre-Installation Meetings:
1. When required in individual specification sections, convene a pre-installation meeting at work site prior to commencing work of the section.
  2. Require attendance of parties directly affecting, or affected by, work of the specific section.
  3. Notify Architect four days in advance of meeting date.
  4. Prepare agenda and preside at meeting:

- a. Review conditions of installation, preparation and installation procedures.
  - b. Review coordination with related work.
5. Record minutes and distribute copies within one day after meeting faxed to participants, with one copy to Architect, Owner, participants, and those affected by decisions made.

#### 1.07 DAILY WORK REPORT

- A. If requested by the Architect, the General Contractor shall submit to the Architect by Friday of each week, a weekly construction report on a form approved by the Architect. The report must include the number of men working on the job for that day, a brief description of the work accomplished and the areas in which the Contractor is working.

#### 1.08 COORDINATION DRAWINGS

- A. Prepare Coordination Drawings where close coordination is required for installation of products and materials fabricated off-site by separate entities, and where limited space necessitates maximum utilization of space for efficient installation of different components.
1. Show relationship of components shown on separate Shop Drawings.
  2. Indicate required installation sequences.
  3. Refer to the Drawings for mechanical and electrical installation requirements.
- B. Contractor agrees to work with the Architect to resolve all conflicts or interferences and agree that the judgments made by the Architect to resolve any such conflicts or interferences are for the best advantage of the Project and will not be cause for additional compensation by the Owner.

#### PART 2 PRODUCTS

Not Used

#### PART 3 EXECUTION

##### 3.01 INSPECTION OF CONDITIONS

- A. The installer of each component shall inspect the substrate and conditions under which work is performed. Do not proceed until unsatisfactory conditions have been corrected.
- B. Verification of Conditions:
1. Verify that existing conditions, surfaces, and substrates are acceptable for subsequent Work.
  2. Verify that field measurements, are as required to receive subsequent Work.
  3. Verify that existing substrate is capable of structural attachment of new Work being applied or attached.
  4. Examine and verify specific conditions described in individual specification sections.
  5. Verify that utility services are available, of the correct characteristics, and in the correct location.
- C. Report in writing to the Architect prevailing conditions that will adversely affect satisfactory execution of the Work of this Section. Do not proceed with Work until unsatisfactory conditions have been corrected.

- D. By beginning Work, Contractor accepts conditions and assumes responsibility for correcting unsuitable conditions encountered at no additional cost to Owner.
- E. Recheck measurements and dimensions before starting each installation.

3.02 PREPARATION – GENERAL

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply any manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 MANUFACTURER'S INSTRUCTIONS – GENERAL

- A. Comply with the manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.
- B. Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items.
- C. Provide attachment and connection devices and methods necessary for securing work. Secure work true to line and level. Allow for expansion and building movement.

3.04 INSTALLATION – GENERAL

- A. Provide uniform joint widths in exposed work. Arrange joints in exposed work to obtain the best visual effect. Refer questionable choices to the Architect for final decision.
- B. Install each component during weather conditions and project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.
- C. Enclosure of the Work: Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.
- D. Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated or recommended by the manufacturer. Refer questionable mounting height decisions to the Architect for final decision.

3.05 CLEANING AND PROTECTION – GENERAL

- A. During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- B. Clean and maintain completed construction as often as necessary through the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- C. Limiting Exposures: Supervise operations to ensure that no part of construction, completed or in progress, is subject to harmful or deleterious exposure. Such exposures include, but are not necessarily limited to, the following:
  - 1. Excessive Weathering
  - 2. Excessively High or Low Temperatures or Humidity

3. Water or Ice
4. Chemicals or Solvents
5. Heavy Traffic, Soiling, Staining and Corrosion
6. Contact Between Incompatible Materials
7. Theft or Vandalism
8. Excessive Static or Dynamic Loading
9. Thermal Shock
10. Combustion

END OF SECTION 01 31 00

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SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Section Includes:

- 1. Schedule of Submittals
- 2. Reports
- 3. Photographic Documentation
  - a. Pre-Construction photographs
  - b. Periodic construction photographs.

B. Related Sections:

- 1. Section 01 31 00 - Project Management and Coordination
- 2. Section 01 33 00 - Submittal Procedures

1.03 SUBMITTALS

- A. Construction Progress Schedule: Refer to Section 013300 "Submittal Procedures" for submittal procedure requirements.
- B. Schedule of Submittals: Refer to Section 013300 "Submittal Procedures" for submittal procedure requirements.
  - 1. Coordinate the Schedule of Submittals with list of subcontracts, the Schedule of Values, and Contractor's Construction Project Schedule.
- C. Reports: Refer to Section 013300 "Submittal Procedures" for submittal procedure requirements.
- D. Digital Photographs:
  - 1. Digital Camera: Minimum sensor resolution of 8 megapixels.

2. Format: Minimum 3200 by 2400 pixels, in unaltered original files, with same aspect ratio as the sensor, uncropped, date and time stamped, in folder named by date of photograph, accompanied by key plan file.
3. Identification: Provide the following information with each image description in file metadata tag:
  - a. Name of Project.
  - b. Name and contact information for photographer.
  - c. Name of Architect.
  - d. Name of Contractor.
  - e. Date photograph was taken.
  - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
  - g. Unique sequential identifier keyed to accompanying key plan.

## PART 2 PRODUCTS

### 2.01 SCHEDULE OF SUBMITTALS:

- A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
- B. Arrange the following information in a tabular format:
  1. Scheduled date for first submittal.
  2. Specification Section number and title.
  3. Submittal category (action or informational).
  4. Subcontractor/Vendor company name, contact person, address and telephone number.
  5. Description of the Work covered.
  6. Length of time required for fabrication.
  7. Date item required on the Project.
  8. Scheduled date for the Architect's final release or approval.

## 2.02 REPORTS

- A. Contractor shall prepare and submit to the Architect at the end of each week a summary of work progress in a form satisfactory to the Architect. Reports shall include the following:
1. Weather and temperature, including any adverse effect of same on job progress.
  2. The number and trades of all workers on the Project for which the Contractor is responsible, including a breakdown for each Subcontractor and Sub-subcontractor.
  3. Major equipment on the Project site for which Contractor and their Subcontractors and Sub-subcontractors are responsible, and an indication as to whether the equipment is in use or idle and at what location.
  4. General description of the Work being performed by Contractor and each Subcontractor and Sub-subcontractor, the location of the Work and the quantity of the Work actually accomplished for the day.
  5. A statement by Contractor as to whether or not the Work is progressing as scheduled and if not, the reason why it is not.
  6. Contractors name, name of person preparing report, date, time, deliveries received and materials ordered and visitors to the site.
  7. The daily reports are for information purposes only and do not constitute any form of written notification.
- B. Special Reports: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information.

## PART 3 EXECUTION

### 3.01 CONSTRUCTION PHOTOGRAPHS

- A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
- C. Pre-Construction Photographs: Before starting construction take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points to accurately record physical conditions at start of construction, and as required to record settlement or cracking of adjacent structures, pavements, and improvements.

1. Photographs are to be used to ensure repair of site to original condition if damaged as a result of construction.
2. Copies of photos shall be turned over to the Architect.

END OF SECTION 013200

## SECTION 013300 - SUBMITTAL PROCEDURES

### PART 1 GENERAL

#### 1.01 RELATED DOCUMENTS

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

#### 1.02 SUMMARY

- A. This Section specifies administrative and procedural requirements for submittals.
- B. Related Sections:
  - 1. Section 014200 - Quality Requirements
  - 2. Section 017700 - Closeout Procedures
  - 3. Section 017839 - Project Record Documents
  - 4. Subsequent Sections of these Specifications.

#### 1.03 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that requires the Architect's responsive action.
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements.
- C. Product Data: Current published information such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams and performance curves.
- D. Samples: Partial sections of manufactured or fabricated components, cuts or containers of materials, full color-range sets, and swatches showing color, texture, and pattern.
- E. Shop Drawings: Fabrication and installation drawings, setting diagrams, schedules, patterns, templates, and similar drawings prepared specifically for the Project.

#### 1.04 SUBMITTALS, GENERAL

- A. Deliver Submittals to the General Contractor, who will process them and forward them to the Architect.

#### 1.05 FORMAT AND PREPARATION

- A. Electronic Submittals: All Electronic Submittals shall be in Portable Document Format (PDF).

1. Use CSI MasterFormat Numbers and tiles in file names to identify subject matter.
  2. Assemble complete submittal packages into single files incorporating submittal requirements of a single Specification Section and transmittal form.
  3. Submit electronic submittals via email.
- B. Use of Architect's Electronic Files: General Contractor and subcontractors may purchase on request for purposes of base plan information only electronic files at a cost of \$125.00 per file, contingent upon the signing a CAD File Use Agreement, provided by the Architect or their Consultant. A sample of this document is included at the end of this section as a reference.
1. Electronic Digital Data CAD Files are available in AutoCAD Version 2013 DWG format only.
  2. Architect makes no representations as to the accuracy or completeness of digital data drawing CAD files as they relate to the Contract Drawings.
- C. Submittal Preparation: Place a permanent label or title block on each Submittal for identification. Indicate the name of the entity that prepared each Submittal on the label or title block.
1. Provide adequate space on Shop Drawings to record review and approval markings and the actions taken by each responsible party.
- D. Identify all deviations from Contract Document requirements, including minor variations and limitations. Include General Contractor's certification that information complies with Contract Document requirements.
- E. Transmittal Form:
1. Form: General Contractor's standard submittal form with each submittal made.
  2. Identify Project, pertinent drawing and detail number, and specification section number, as appropriate.
  3. Distribute copies of reviewed Submittals to concerned persons. Instruct recipients to promptly report any inability to comply with provisions.
  4. All Submittals shall bear the General Contractor's review stamp and signature indicating that the represented products comply with the Contract.
- F. Do not permit shop drawing copies, without an appropriate final "Action" marking by the Architect, to be used in connection with the work.
- G. Distribution: Furnish copies of final approved submittals to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities.
- H. Maintain final approved copies of submittals at the Project site throughout the course of construction.

#### 1.06 COORDINATION

- A. Coordinate preparation and processing of Submittals with scheduling of construction activities to maintain the progress of the Work. Transmit each Submittal sufficiently in advance of performance of related construction activities to allow adequate review time and to avoid delay.
  - 1. Coordinate transmittal of different types of Submittals for related elements of the work so processing will not be delayed by the need to review Submittals concurrently for coordination.
- B. Make all Submittals sufficiently in advance of scheduled dates for installation to allow for reviews for securing necessary approvals, for possible revision and Resubmittals, and for placing orders and securing delivery.
- C. The Contractor shall prepare and submit a prioritized tabulation by date of Submittals required for the Project.
  - 1. Identify and schedule items requiring long lead times for delivery.
  - 2. Show critical submittal dates on the Construction Project Schedule.

#### 1.07 SHOP DRAWINGS

- A. Include the following information:
  - 1. Dimensions and field measurements
  - 2. Identification of Products and Materials Included
  - 3. Isolation and fastening methods and devices; and mechanical and electrical connections.
  - 4. The relationships to adjacent materials and equipment.
  - 5. Special coordination requirements.
- B. Shop Drawings shall be Project-specific information drawn to accurate scale.
  - 1. Identify all deviations from the Contract Documents.
  - 2. Do not reproduce Contract Documents or copy standard published information as the basis of shop drawings. Standard published information prepared without specific reference to the Project will not be accepted.

#### 1.08 PRODUCT DATA

- A. Submit product data as a single submittal for each element of construction or system.
- B. Mark each copy to show applicable choices and options. Include the following information:
  - 1. Type and Model Numbers
  - 2. Compliance with specified standards
  - 3. Field Measurements
  - 4. Special Coordination Requirements

5. Manufacturer's Printed Recommendations

1.09 SAMPLES

- A. When specified, submit full-size, fully-fabricated samples, cured and finished as specified and physically identical with the material or product proposed.
1. Mount, display, or package samples in the manner specified to facilitate review of qualities indicated. Include the following:
    - a. Generic Description
    - b. Sample Source
    - c. Product Name or Name of Manufacturer
    - d. Compliance with Recognized Standards
    - e. Availability and Delivery Time
  2. Colors: Unless the precise color and pattern is specifically described in the Contract Documents, submit color charts and pattern charts to the Architect for their review and selection.
  3. Submit samples for review of kind, color, pattern, and texture for a final check of these characteristics with other elements and for a comparison of these characteristics between the final Submittal and the actual component as delivered and installed.
    - a. Where variation in color, pattern, texture, or other characteristics are inherent in the material or product represented, submit multiple units (not less than 3) that show approximate limits of the variations.
    - b. Refer to other Specification Sections for requirements for samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.
    - c. Refer to other Sections for samples to be returned to the General Contractor for incorporation in the work. Such samples must be undamaged at time of use. On the transmittal, indicate special requests regarding disposition of samples Submittals.
  4. Samples for Initial Selection: Where samples are for selection of color, pattern, texture, or similar characteristics from a range of standard choices, submit a full set of choices for the material or product.
    - a. Submitted items will be reviewed and returned with the Architect's mark indicating selection and other action.
  5. Maintain sets of samples, as returned, at the Project site for quality comparisons throughout the course of construction.
    - a. Unless noncompliance with Contract Document provisions is observed, the Submittal may serve as the final Submittal.



- b. Sample sets may be used to obtain final acceptance of the construction associated with each set.
- B. Distribution of Samples: Prepare and distribute additional sets to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the work.

#### 1.10 INFORMATIONAL SUBMITTALS

- A. Certificates: Manufacturer's written statements attesting to compliance with specified requirements.
  - 1. Certificates may be recent or previous test results on material or Product, but must be acceptable to Architect.
- B. Manufacturer Installation Instructions:
  - 1. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing to Architect. Include name of product and name, address, and telephone number of manufacturer.
  - 2. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
- C. Manufacturer's Field Reports:
  - 1. Prepare written information documenting factory-authorized service representative's tests and inspections.
- D. Test Reports
  - 1. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.
  - 2. Pre-construction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements.
  - 3. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
  - 4. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements.

5. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

#### 1.11 MISCELLANEOUS SUBMITTALS

- A. Application for Payment and Schedule of Values: Comply with General and Supplementary Conditions.
- B. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

#### 1.12 GENERAL CONTRACTOR'S REVIEW

- A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions.
- B. Mark with General Contractor's approval stamp before submitting. Architect will not review submittals that do not bear General Contractor's approval stamps.

#### 1.13 ARCHITECT'S REVIEW AND ACTION

- A. The Architect will review each Action Submittal, mark to indicate action taken, and return to the General Contractor.
  1. The Architect will review submittals for general conformance with the Contract Documents.
  2. Compliance with specified characteristics is General Contractor's responsibility.
- B. Action Stamp: The Architect will stamp each Submittal with a uniform, action stamp. The stamp will be appropriately marked, as follows, to indicate the action taken:
  1. Where Submittals are marked "CONFORMS AS SUBMITTED", that part of the work covered by the Submittal may proceed, provided it complies with requirements of the Contract Documents. Final payment will depend upon that compliance.
  2. When Submittals are marked "CONFORMS AS NOTED", that part of the work covered by the Submittal may proceed, provided it complies with notations or corrections on the Submittal and requirements of the Contract Documents. Final payment will depend on that compliance.
  3. Returned for Resubmittal: When Submittal is marked "REVISE AND RESUBMIT", do not proceed with that part of the work covered by the Submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new Submittal in accordance with the notations. Resubmit without delay. Repeat, if necessary, to obtain a different action mark.

- a. Do not permit submittals marked "REVISE AND RESUBMIT" to be used at the Project site or elsewhere where work is in progress.
4. Other Action: Where a Submittal is primarily for information or record purposes, special processing or other activity, the Submittal will be returned marked "ACTION NOT REQUIRED".
5. After Architect's review, revise and resubmit as requested, identifying corrections made.
6. When resubmittal is required for any reason, transmit under new letter of transmittal, indicating by reference to a previous Submittal that this is a Resubmittal.
  - a. Identify on submittal all changes made since previous submission.
- B. Generally allow seven to ten calendar days for the Architect's review. The Architect will notify the General Contractor if additional review time is required.
  1. Allow additional time as requested by the Architect if coordination with other Submittals is required.
  2. The Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until all related Submittals are received.
  3. If an Intermediate Submittal is necessary, process the same as the initial Submittal. Allow seven to ten calendar days for reprocessing each Submittal.
  4. The Architect may reject incomplete submittals without reviewing them.
  5. The Architect reserves the right to reject a submittal that has clearly not been reviewed first by the General Contractor.
  6. No extension of Contract Time will be authorized because of failure to transmit Submittals to the Architect sufficiently in advance of the work to permit processing.
- C. If it is determined that a Contractor's failure to make complete and correct submittals results in excessive reviews and delays, the Owner will be entitled to make corrective actions according to the provisions of the Contract Documents.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION 013300

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SECTION 01 35 23 - SAFETY, HEALTH, AND ENVIRONMENT

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Special Conditions and other Division 01 and 02 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. References: In addition to publications referenced in the Construction Contract Clauses, the following Code of Federal Regulations (CFR) and other publications designate and define hazardous materials and conditions and establish procedures for handling these materials and conditions. Omission of any publication in this section does not remove any obligation or legal requirement on the part of the contractor to comply with all legal requirements for the location of the work.
  - 1. 29 CFR, Part 1910: Occupational Safety and Health Administration (OSHA) General Industry and Health Standards
  - 2. 29 CFR, Part 1926: OSHA Construction Industry Standards.
  - 3. 40 CFR, Part 61: National Emission Standards for Hazardous Air Pollutants.
  - 4. 40 CFR, Part 261: Environmental Protection Agency (EPA) Characteristics of Hazardous Waste.
  - 5. 40 CFR, Part 761: EPA Polychlorinated Biphenyls (PCBs), Manufacturing, Processing, Distribution in Commerce and Use Prohibitions
  - 6. 40 CFR, Part 763: EPA Asbestos.
  - 7. Federal Standards 313A: Safety Data Sheets, Preparation and the Submission of.
  - 8. NIH DCAB publication “Standards for Temporary Construction,” March 1988.
- B. Related Sections: This specification section is related to any and all specification sections with explicit or implicit reference to cutting and patching. Specific submittal requirements of these related specification sections are not included in this section. Related sections include but are not limited to the following specification sections:
  - 1. Section 011100 “Summary”
  - 2. Section 013100 “Project Management and Coordination”
  - 3. Section 015000 “Temporary Facilities and Controls”
  - 4. Section 024119 “Selective Demolition”
  - 5. Section 028220 “Hazardous Material Abatement”

- C. Hazardous Materials: Some hazardous and toxic materials and substances are included in 29 CFR Part 1910, subparts H and Z, and in 29 CFR Part 1926 and others additionally defined in Federal Standard 313A. Commonly encountered hazardous materials include but are not limited to asbestos, poly-chlorinated biphenyls (PCBs), mercury, lead sheeting, explosives and radioactive material.
6. Asbestos may be found in spray-on fireproofing, insulation, boiler lagging, pipe coverings, duct insulation, plaster, drywall joint compound, ceiling tile, flooring materials, roofing, and other materials. See Division 02 Section "Asbestos Abatement" for removal requirements.
  7. PCBs may be contained in ballasts, transformers, capacitors, voltage regulators, oil switches, mechanical insulation, caulks/sealants, and other materials.
  8. Mercury can be contained within fluorescent light bulbs, thermometers, thermostats, and other materials.
  9. Lead sheeting can be contained within wall cavities, wall systems, doors and associated components, and other materials.
- D. Acquisition of Publications: Referenced CFR publications may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

#### 1.03 SUBMITTALS

- C. Contractor's Safety and Health Program: The contractor shall submit a written copy of the Company Safety and Health Program as well as the site specific safety and health plan for the project to the Owner within 14 calendar days of the Notice to Proceed or before work commences on the project site, whichever is earlier.
- D. Accident Reports: The Contractor must submit to the Owner a written report within three calendar days of any accident, fire, emergency, theft or incident in which any personal or property damage took place, regardless of any other notifications performed. Include a copy of each accident report that is submitted by the Contractor or Subcontractors to their insurance carriers, within seven calendar days after the date of the accident.
- E. Safety Data Sheets (SDS): The contractor shall provide the Safety Data Sheets (SDS's) for all products containing hazardous chemicals to the Owner within 14 calendar days of the Notice to Proceed or before work commences on the site. The MSDS's shall be maintained at the project site for workers and the Owner. MSDS's for new products shall similarly be submitted to the Owner and be retained at the project site until completion of the project.

#### 1.04 PRECONSTRUCTION SAFETY MEETING

- F. A. Prior to commencing construction, representatives of the Contractor, including the general superintendent and one or more safety representatives, shall meet with the Owner for the purpose of reviewing Contract safety and health requirements.
1. The Contractor's Safety and Health Program and Site Specific Safety and Health Plan shall be reviewed, and implementation of safety and health provisions pertinent to the Work shall be discussed.

2. The Contractor shall be prepared to discuss, in detail, the Contractor's Site Specific Safety and Health Plan including measures intended to control any unsafe or unhealthy conditions associated with the work to be performed under the contract.
3. This meeting may be held in conjunction with the preconstruction conference, if so directed by the Owner. The conduct of this meeting is not contingent upon a general preconstruction meeting.
4. The level of detail for the safety meeting is dependent upon the nature of the work and the potential inherent hazards

#### 1.05 COMPLIANCE WITH REGULATIONS

- G. The work, including contact with or handling of hazardous materials, disturbance or dismantling of surfaces containing hazardous materials, and disposal of hazardous materials, shall comply with the applicable requirements of 29 CFR Parts 1910 and 1926, and 40 CFR Parts 61, 261, 761 and 763.
- H. Work involving disturbance or dismantling of asbestos or asbestos containing materials, demolition of structures containing asbestos and removal of asbestos, shall comply with 40 CFR Part 61, Subparts A and M, and 40 CFR Part 763.
- I. Work shall additionally comply with all applicable state and local safety and health regulations.
- J. In case of a conflict between applicable regulations, the more stringent requirements shall apply.
- K. Contractor Responsibility: The Contractor shall assume full responsibility and liability for compliance with all applicable codes, standards and regulations pertaining to the health and safety of personnel during execution of the Work, and shall hold the Owner harmless for any action on the Contractor's part, or that of the Contractor's employees or subcontractors, that result in illness, injury or death.
  1. The Contractor shall have written safety and health programs in compliance with 29 CFR Parts 1910 and 1926.
  2. Inspections, Tests, and Reports: The required inspections, tests and reports made by the Contractor, subcontractors, specially trained technicians, equipment manufacturers, and others as required, shall be at the Contractor's expense.

#### 1.06 USE OF POWER ACTUATED FASTENER TOOLS

- L. Use of explosives shall be prohibited.

- M. Power actuated fastener tools are often used on construction sites due to the unique manner in which objects can be accurately and positively secured to a substrate. Also, these tools tend to allow for work to proceed more rapidly and efficiently with desirable results. However, these tools also present potential problems to the work area relative to damaged base material and fasteners. Also, the fastener tools present health and safety hazards to untrained users of fastener equipment, unprotected workers in the immediate work area, as well as building occupants that might be present. Based upon these circumstances, there is a need for safe work practice requirements to be followed whenever such equipment is used. It should be noted that fasteners can be powered or driven primarily by powder charges, gas, or pneumatic means.
- N. Power actuated fastener tools (ex. nail guns, etc.) including pneumatic, powder actuated and gas actuated tools shall not be used or brought to the project site without the permission of the Owner. Any permission request will include documentation of appropriate training, on-site demonstration, and written standard operating procedures and safety plan for the use of this equipment in the particular application requested.
- O. The contractor must comply with the following in order for the Owner to grant permission to use the power actuated fastener equipment. The contractor will be fully responsible to every effort to appropriately protect the safety of people and equipment when utilizing this tool. These include, but are not limited to, the following:
1. The contractor shall inspect the substrate and the fastening material to determine if this proposed fastening method is appropriate. This determination should include a description of the type of material to be fastened and the method of fastening. The base material should be inspected to determine whether it is too hard, soft, or brittle that it may cause spalling, cause the fastener to shatter or not hold, or cause the fastener to free flight.
  2. The contractor shall develop a written description of the work to be performed for the specific project for which permission has been requested. The contractor shall develop written instructions or procedures on the use of the fastener tool. The standard operating procedures should include the type of surfaces (i.e., metal studs to floor, hangers to the deck, etc.) to be fastened to minimize damage to the building and injury to the user, other employees, and the public and safety precautions. These documents need to be submitted for approval to the Owner prior to being accepted for use.  
  
NOTE: Concrete or other surfaces that are damaged shall not be fastened. When fastening into concrete, never fasten closer than two inches from the edge since this may reduce fastener strength or damage to this material.
  3. Trained, competent, and credentialed individuals shall be the only persons allowed to utilize such fastener tools.
  4. Individuals will be expected to demonstrate their competency with the Owner approved fastener equipment prior to being authorized usage on the specific project. This demonstration should be performed in the presence of the Owner.
  5. A "Competent Person" shall be present to ensure that the fastener tool is being used properly and workers not involved with the fastener task are clear of the immediate work area. This would include non-construction workers or building occupants above and below where the fastener tool is being used.



6. Fastener tool operators shall report immediately any problems associated with the device or fastener work to the "Competent Person" or immediate supervisor and not proceed until the problem has been resolved and authorization given to proceed.
7. Only the Owner approved fastener tool shall be used for the specific requested fastening application
8. The contractor shall specify information about the fastener tool(s) to be used on the job. This should include the name of the manufacturer and model number. No other fastener tool can be used without the permission of the Owner.
9. The fastener tool shall be operated at the lowest power or charge setting, as well as using the shortest fasteners to ensure a sufficient fastening, as well as to minimize personal injury and/or property damage.
10. The fastener equipment should be inspected for proper operation before use to ensure the proper discharge and a solid fastener attachment.
11. The fastener equipment should be unloaded before inspecting, servicing, cleaning or storing.
12. The fastener equipment and charging equipment shall be stored in a tamper resistant container that can be locked when not in use.
13. The fastener equipment shall be used in accordance with the owner's manual and manufacturer's directions.
14. The appropriate personal protective equipment (i.e., safety glasses, hard hats, hearing protection, etc.) shall be worn by the operator of the fastener equipment.

#### 1.07 WORK UNDERGROUND OR IN CONFINED SPACES

- A. Work shall comply with appropriate OSHA regulations; including but not limited to, 29 CFR1910.146
- P. The Contractor shall remove water and debris and properly vent manholes before commencement and during execution of work in manholes.
- Q. The Contractor shall have a competent person on site during the project as per the OSHA construction standard.

#### 1.08 ELECTRICAL

- R. Electrical arc welding equipment shall not be connected to the building power supply.

#### 1.09 MATERIAL DELIVERIES

- S. Whenever practicable, deliveries shall be made during regular working hours and only when the Contractor's representative is available to receive them.
  1. Deliver material in approved containers and with properly licensed vehicles and operators.

2. Open delivery vehicles are not permitted. Deliver materials in fully closed vehicles or tarp-covered vehicles.
3. All dump trucks shall be fully covered while in transport to and from the unloading site. All loads shall be securely fastened until unloading.
4. Engines shall not be left running while vehicles are loading, unloading, waiting or parked.
5. Do not block roads, walks, building entrances/exits, fire hydrants and standpipes, exterior tanks or building gas connections.
6. Exercise caution regarding all pedestrians and when backing the vehicle.

#### 1.10 HAZARDOUS MATERIAL

- T. The Contractor shall bring to the attention of the Architect/Engineer (A/E) and the Owner, any material encountered during execution of the Work that the Contractor suspects is hazardous. Work shall be stopped as it relates only to the questioned hazardous material so that the Owner can recommend testing to an accredited third party laboratory, to determine if the material is hazardous before work can be authorized to proceed.
- U. If the tested material is found to be hazardous, and/or if additional protective measures are required, a change to the Contract price may be provided, subject to the applicable provisions of the Contract.

#### 1.11 ADDITIONAL SAFETY REQUIREMENTS

- V. No work shall be performed in any area occupied by the public unless approved by the owner.
  1. Accident Treatment and Records: The Contractor shall post emergency first aid information.
  2. No person, regardless of position or authority, shall operate any switch, valve, or equipment that has an official lockout/ tagout tag attached to it, nor shall such tag be removed except as provided in this section.
  3. When work is to be performed on electrical circuits, the work shall be performed only by qualified personnel following the required safety procedures.
  4. Identification markings on building light and power distribution circuit breakers shall not be relied on for establishing safe work conditions.
  5. Before clearance will be given on any equipment other than electrical (generally referred to as mechanical apparatus), the apparatus, valves, or systems shall be secured in a passive condition with the appropriate vents, pins, and locks.
  6. Pressurized or vacuum systems shall be vented to relieve differential pressure completely.
  7. Vent valves shall be lockout/tagout tagged open during the course of the work.

8. Where dangerous gas or fluid systems are involved, or in areas where the environment may be oxygen deficient, systems or areas shall be purged, ventilated, or otherwise made safe prior to entry.
9. Hot Work: If any welding, cutting, or spark generating activity is to be performed, the contractor shall comply with all aspects of OSHA Standard Subpart Q Welding, Cutting and Brazing 29 CFR 1910.252 relating to fire prevention associated with hot work.
10. If a roof replacement is to be performed, consideration should be given for the location of the kettles (if any) for the new asphalt roof materials, so as to minimize the potential air contamination problem in adjacent occupied buildings.
11. Crane Safety
  - a. Safety watches shall be used to assess any safety concerns within the swing path of the crane during both the removal /lowering of equipment and also during the lifting /installation of new equipment. A dedicated, full-time safety watch shall be used anytime the crane is in use.
  - b. Particular attention is needed to ensure that spectators and/or other pedestrians are kept clear of the construction site while the crane is in use. Allowable locations for siting the crane are shown on the drawings.
  - c. Daily inspections are required of crane and associated components.
  - d. Comply with all OSHA requirements related to crane operation.

### 1.03 PERSONNEL PROTECTIVE EQUIPMENT

- A. Special facilities, devices, equipment and similar items used by the Contractor in execution of the work shall comply with 29 CFR, Part 1910, Subpart I and other applicable regulations.

## PART 2 PRODUCTS

### 2.01 SAFETY AND HEALTH PROGRAM

- A. The Contractor shall submit copies of the written site specific project safety and health plan and emergency action procedures, as applicable to the work scope, as required as a result of the safety meeting, or as required by OSHA 29 CFR, Part 1926 including but not necessarily limited to the procedures and programs that support the requirements of the following:
  1. Designation of Safety Competent Person
  2. Occupational Noise Exposure
  3. Fall Protection
  4. Personnel Protective Equipment
  5. Control of Hazardous Energy
  6. Hazardous Materials Waste Management Plan (draft if final plan has not been accepted)
  7. Electrical Safety Related Work Practices
  8. Lead

9. Asbestos
10. Refrigerants
11. Respirator Protection
12. Confined spaces
13. Emergency evacuation and reporting
14. Hot Work
15. Crystalline Silica Rule

#### 2.02 CONTRACTOR'S SAFETY AND HEALTH PLAN:

- A. In addition to specific safety and health programs applicable to the project, Contractor shall submit to the Owner a copy of the firms' general Safety and Health Plan listing emergency procedures and contact persons with home addresses and telephone numbers.

#### 2.03 PERMITS:

- A. If hazardous materials are disposed of off-site, submit copies of shipping manifests and permits from applicable federal, state or local authorities and disposal facilities, and submit certificates that the material has been disposed of in accordance with regulations.

#### 2.04 LOCKOUT/TAGOUT EQUIPMENT

- A. Appropriate lockout/tagout equipment will be provided by the contractor. When required contractor will provide device to allow multiple locks.

### PART 3 - EXECUTION

#### 3.01 EMERGENCY SUSPENSION OF WORK

- A. When the Contractor is notified by the A/E or the Owner, of non-compliance with the safety or health provisions of the Contract, the Contractor shall immediately, unless otherwise instructed, correct the unsafe or unhealthy condition.
  1. If the Contractor fails to comply promptly, all or part of the work will be stopped by notice from the A/E.
  2. When, in the opinion of and by notice given by the A/E and or the Owner, satisfactory corrective action has been taken by the Contractor, work shall resume.
  3. The Contractor shall not be allowed any extension of time or compensation for damages in connection with a work stoppage for an unsafe or unhealthy condition.

#### 3.02 PROTECTION OF PERSONNEL

- A. The Contractor shall take all necessary precautions to prevent injury to the public, occupants, or damage to property of others. The public and occupants includes all persons not employed by the Contractor or a subcontractor.

- B. Wherever practical, the work area shall be fenced, barricaded or otherwise blocked off from the public or occupants to prevent unauthorized entry into the work area.
  - 1. Provide traffic barricades and traffic control signage where construction activities occur in vehicular areas.
  - 2. Corridors, aisles, stairways, doors and exit ways shall not be obstructed or used in a manner to encroach upon routes of ingress or egress utilized by the public or occupants, or to present an unsafe or unhealthy condition to the public or occupants.
  - 3. Store, position and use equipment, tools, materials, scraps and trash in a manner that does not present a hazard to the public or occupants by accidental shifting, ignition or other hazardous activity.
  - 4. Store and transport refuse and debris in a manner to prevent unsafe and unhealthy conditions for the public and occupants. Cover refuse containers, and remove refuse on a frequent regular basis acceptable to the Owner. Use tarpaulins or other means to prevent loose transported materials from dropping from trucks.
- C. Construction Dust: Provide measures to prevent the discharge of airborne dust to adjacent properties. Dust potentially will be generated by activities such as site preparation, excavation, trenching, saw cutting or drilling of brick, concrete, or stone, as well as road surface dust from vehicles. Use water spray, temporary enclosures, vacuum collection, sweeping and any other methods necessary to minimize or eliminate dust and dirt migration. Comply with governing environmental protection requirements and the requirements of the Owner (i.e. no visible dust shall be seen leaving the site). If the level of dust or dirt produced is unacceptable to the Owner all work will be stopped until the situation is corrected. Refer to specification section "Temporary Controls".
- D. Alternate Precautions: When the nature of the work prevents isolation of the work area and the public or building occupants may be in or pass through, under or over the work area, alternate precautions such as the posting of signs, the use of signal persons, the erection of barricades or similar protection around particularly hazardous operations shall be used as appropriate.
- E. Public Thoroughfare: When work is to be performed over a public thoroughfare such as a sidewalk, roadway or other site access way, the thoroughfare shall be closed, if possible, or other precautions taken such as the installation of screens or barricades. When the exposure to heavy falling objects exists, as during the erection of building walls or during demolition, special protection of the type detailed in 29 CFR, Parts 1910 and 1926 shall be provided.

### 3.03 ENVIRONMENTAL PROTECTION

- A. General Requirements
  - 1. Dispose of solid, liquid and gaseous contaminants in accordance with local codes, laws, ordinances and regulations.
  - 2. Comply with applicable federal, state and local noise control laws, ordinances and regulations, including but not limited to 29 CFR, Part 1910.95 and 29 CFR, Part 1926.52.

3.04 SPECIFIC REQUIREMENTS

- A. On any project where fluorescent light bulbs are removed, unless the fluorescent light bulbs are going to be re-used, these items need to be carefully removed and stored for proper disposal as “Universal Waste” as required by the EPA. This would include all other types of light bulbs such as incandescent, sodium, mercury, etc., as well as contained liquid mercury components retrieved from thermostats and thermometers. These materials cannot be disposed as demolition waste.
1. If any transformers are to be disposed the presence or absence of PCBs shall be verified, by testing if necessary.
  2. During removal or renovation of any system containing chemicals, gases or refrigerants, the appropriate equipment shall be used to capture these substances and prevent their release to the atmosphere. This equipment must be certified as required and be used by properly trained and certified technicians as required by applicable federal, state and local laws and regulations. Proper recordkeeping procedures shall be followed.
  3. Containers of volatile sealers, paints, solvents, roofing coatings and other materials should be covered when not in use to prevent the release of volatile organic compounds into the atmosphere. This requirement also applies to the disposal of such products.

SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
  - 1. Specific quality-assurance and quality-control requirements for individual work results are specified in their respective Specification Sections. Requirements in individual Sections may also cover production of standard products.
  - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
  - 3. Requirements for Contractor to provide quality-assurance and quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.3 DEFINITIONS

- A. Experienced: When used with an entity or individual, "experienced," unless otherwise further described, means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.
- B. Field Quality-Control Tests and Inspections: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- C. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, subcontractor, or sub-subcontractor, to perform a particular construction operation, including installation, erection, application, assembly, and similar operations.
  - 1. Use of trade-specific terminology in referring to a Work result does not require that certain construction activities specified apply exclusively to specific trade(s).
- D. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) according to 29 CFR 1910.7, by a testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

- E. Source Quality-Control Tests and Inspections: Tests and inspections that are performed at the source (e.g., plant, mill, factory, or shop).
- F. Testing Agency: An entity engaged to perform specific tests, inspections, or both. The term "testing laboratory" has the same meaning as the term "testing agency."
- G. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work, to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- H. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work, to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Contractor's quality-control services do not include contract administration activities performed by Architect.

#### 1.4 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
  - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

#### 1.5 CONFLICTING REQUIREMENTS

- A. Conflicting Standards and Other Requirements: If compliance with two or more standards or requirements is specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, inform the Owner regarding the conflict and obtain clarification prior to proceeding with the Work. Refer conflicting requirements that are different, but apparently equal, to Owner for clarification before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified is the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Owner for a decision before proceeding.

#### 1.6 INFORMATIONAL SUBMITTALS

- A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.
- B. Qualification Data: For Contractor's quality-control personnel.
- C. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility submitted to authorities having jurisdiction before starting work on the following systems:



1. Primary wind-force-resisting system or a wind-resisting component listed in the Statement of Special Inspections.
  - D. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
  - E. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
    1. Specification Section number and title.
    2. Entity responsible for performing tests and inspections.
    3. Description of test and inspection.
    4. Identification of applicable standards.
    5. Identification of test and inspection methods.
    6. Number of tests and inspections required.
    7. Time schedule or time span for tests and inspections.
    8. Requirements for obtaining samples.
    9. Unique characteristics of each quality-control service.
  - F. Reports: Prepare and submit certified written reports and documents as specified.
  - G. Permits, Licenses, and Certificates: For Owner's record, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents established for compliance with standards and regulations bearing on performance of the Work.
- 1.7 CONTRACTOR'S QUALITY-CONTROL PLAN.
- A. Quality-Control Plan, General: Submit quality-control plan within 10 days of Notice to Proceed, and not less than five days prior to preconstruction conference. Submit in format acceptable to Owner. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities and to coordinate Owner's quality-assurance and quality-control activities. Coordinate with Contractor's Construction Schedule.
  - B. Quality-Control Personnel Qualifications: Engage qualified personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.
    1. Project quality-control manager may also serve as Project superintendent.
    2. Qualification to include a minimum of 10 years professional work experience with membrane roofing installation.
  - C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.
  - D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:
    1. Contractor-performed tests and inspections, including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections. Distinguish source quality-control tests and inspections from field quality-control tests and inspections.

- E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring the Work into compliance with standards of workmanship established by Contract requirements and approved mockups.
- F. Monitoring and Documentation: Maintain testing and inspection reports, including log of approved and rejected results. Include Work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming Work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

#### 1.8 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
  - 1. Date of issue.
  - 2. Project title and number.
  - 3. Name, address, telephone number, and email address of testing agency.
  - 4. Dates and locations of samples and tests or inspections.
  - 5. Names of individuals making tests and inspections.
  - 6. Description of the Work and test and inspection method.
  - 7. Identification of product and Specification Section.
  - 8. Complete test or inspection data.
  - 9. Test and inspection results and an interpretation of test results.
  - 10. Record of temperature and weather conditions at time of sample-taking and testing and inspection.
  - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  - 12. Name and signature of laboratory inspector.
  - 13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
  - 1. Name, address, telephone number, and email address of technical representative making report.
  - 2. Statement on condition of substrates and their acceptability for installation of product.
  - 3. Statement that products at Project site comply with requirements.
  - 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
  - 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  - 6. Statement of whether conditions, products, and installation will affect warranty.
  - 7. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
  - 1. Name, address, telephone number, and email address of factory-authorized service representative making report.
  - 2. Statement that equipment complies with requirements.
  - 3. Results of operational and other tests and a statement of whether observed performance complies with requirements.

4. Statement of whether conditions, products, and installation will affect warranty.
5. Other required items indicated in individual Specification Sections.

#### 1.9 QUALITY ASSURANCE

- A. Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. **Manufacturer Qualifications:** A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory-authorized service representative requirements.
- C. **Fabricator Qualifications:** A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. **Installer Qualifications:** A firm or individual experienced in installing, erecting, applying, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
  1. Installer shall be certified by manufacturer as qualified to install the specified products/systems.
- E. **Professional Engineer Qualifications:** A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. **Testing and Inspecting Agency Qualifications:** An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented in accordance with ASTM E329, and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
- G. **Manufacturer's Technical Representative Qualifications:** An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- H. **Factory-Authorized Service Representative Qualifications:** An authorized representative of manufacturer who is trained and approved by manufacturer to inspect, demonstrate, repair, and perform service on installations of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

#### 1.10 QUALITY CONTROL

- A. **Inspector Responsibilities:** Where quality-control services are indicated as a third party responsibility, Owner has engaged the Architect to provide these services.
  1. Payment for these services will be made from under separate contract.
  2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.

- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to others are Contractor's responsibility. Perform additional quality-control activities, whether specified or not, to verify and document that the Work complies with requirements.
1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
  2. Engage a qualified testing agency to perform quality-control services.
    - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
  3. Notify testing agencies at least 48 hours in advance of time when Work that requires testing or inspection will be performed.
  4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
  5. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
  6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
  - 7.
- C. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- D. Testing Agency Responsibilities: Cooperate with Owner and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Owner and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
  2. Determine the locations from which test samples will be taken and in which in-situ tests are conducted.
  3. Conduct and interpret tests and inspections, and state in each report whether tested and inspected Work complies with or deviates from requirements.
  4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
  5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
  6. Do not perform duties of Contractor.
- E. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."
- F. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- G. Contractor's Associated Requirements and Services: Cooperate with agencies and representatives performing required tests, inspections, and similar quality-control services, and provide reasonable

auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
  2. Incidental labor and facilities necessary to facilitate tests and inspections.
  3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
  4. Facilities for storage and field curing of test samples.
  5. Delivery of samples to testing agencies.
  6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
  7. Security and protection for samples and for testing and inspection equipment at Project site.
- H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents as a component of Contractor's quality-control plan. Coordinate and submit concurrently with Contractor's Construction Schedule. Update as the Work progresses.
1. Distribution: Distribute schedule to Owner, Architect, Commissioning Authority, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

### 3.1 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
1. Date test or inspection was conducted.
  2. Description of the Work tested or inspected.
  3. Date test or inspection results were transmitted to Owner.
  4. Identification of testing agency conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's, Owner's, and authorities' having jurisdiction reference during normal working hours.
1. Submit log at Project closeout as part of Project Record Documents.

### 3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspection, sample-taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

3.3 SCHEDULE OF SPECIAL INSPECTIONS

<b>SCHEDULE OF SPECIAL INSPECTION</b>														
Per IBC Section 1704 of the 2018 International Building Code and Section C408 of the 2018 IECC the following items require Special Inspections. <b>Special inspectors must be employed by the Owner or registered design professional in responsible charge acting as the owner's agent.</b>														
PROJECT ADDRESS			PERMIT NO.											
MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT												
		Y/N	EXTENT	AGENT*										
<b>1705.11.3 Wind-resisting Components</b>														
1. Roof cladding	Shop (3) and field inspection	Y	Periodic											
<p>A final special inspection report, from the special inspector(s), documenting the required special inspections were performed, correction of discrepancies, and compliance with construction documents shall be submitted before a Certificate of Occupancy is issued.</p> <p><b>INSPECTION AGENTS</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 70%;">FIRM</th> <th style="width: 30%;">ADDRESS</th> </tr> </thead> <tbody> <tr><td>1. _____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td></tr> <tr><td>3. _____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td></tr> </tbody> </table> <p><b>TO BE POSTED ON THE JOB</b></p> <p><b>Notes:</b></p> <ol style="list-style-type: none"> <li>1. The inspection and testing agent(s) shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official prior to commencing work. The qualifications of the Special Inspector(s) and/or testing agencies may be subject to the approval of the Building Official and/or the Design Professional.</li> <li>2. The list of Special Inspectors may be submitted as a separate document, if noted so above.</li> <li>3. Special Inspections as required by Section 1704.2.5 are not required where the fabricator is approved in accordance with IBC Secti4. Observe on a random basis, operations need not be delayed pending these inspections. Perform these tasks for each welded joint, bolted connection, or steel element.</li> <li>4. Observe on a random basis, operations need not be delayed pending these inspections. Perform these tasks for each welded joint, bolted connection, or steel element.</li> <li>5. NDT of welds completed in an approved fabricator's shop may be performed by that fabricator when approved by the AHJ. Refer to AISC 360, N7.</li> </ol> <p>Are Requirements for Seismic Resistance included in the Statement of Special Inspections? <span style="float: right;">Yes No</span></p> <p>Are Requirements for Wind Resistance included in the Statement of Special Inspections? <span style="float: right;">Yes No</span></p> <p>Registered design professional in responsible charge:</p> <p>Name: _____ DATE _____ <span style="float: right;">SEAL</span></p>					FIRM	ADDRESS	1. _____	_____	2. _____	_____	3. _____	_____	4. _____	_____
FIRM	ADDRESS													
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END OF SECTION 01 40 00

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SECTION 015000- TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. This Section specifies temporary services and facilities, including utilities, construction and support facilities, security and protection.
- B. Related Sections:
  - 1. Section 013523 "Safety, Health, and Environment"
  - 2. Section 017700 "Closeout Procedures"

1.03 QUALITY ASSURANCE

- A. Regulations: Comply with industry standards and with applicable laws and regulations of authorities having jurisdiction, including but not limited to:
  - 1. Owner's Requirements
  - 2. Building Code Requirements
  - 3. Health and Safety Regulations
  - 4. Utility Company Regulations
  - 5. Police, Fire Department, and Rescue Squad Rules
  - 6. Environmental Protection Regulations
- B. Standards:
  - 1. NFPA Code 241, "Building Construction and Demolition Operations"
  - 2. AGC and ASC "Guidelines for Bid Conditions for Temporary Job Utilities and Services"
  - 3. ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition",
  - 4. Electrical Service:
    - a. NECA Electrical Design Library "Temporary Electrical Facilities."

- b. NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with National Electric Code (NFPA 70).
- C. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with the normal application of trade regulations and union jurisdictions.
- D. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

#### 1.04 PROJECT/SITE CONDITIONS

- A. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner.

#### 1.05 USE CHARGES

- A. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- B. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering but will require payment. See Allowances section 012100.

#### 1.06 INFORMATION SUBMITTALS

- 1. Dust- and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust- and HVAC-control measures proposed for use, proposed locations, and proposed time frame for their operation. Include the following:
  - a. Locations of dust-control partitions at each phase of work.
  - b. HVAC system isolation schematic drawing.
  - c. Location of proposed air-filtration system discharge.
  - d. Waste-handling procedures.
- 2. Noise and Vibration Control Plan: Identify construction activities that may impact the occupancy and use of existing spaces within the building or adjacent existing buildings, whether occupied by others, or occupied by the Owner. Include the following:
  - a. Methods used to meet the goals and requirements of the Owner.
  - b. Show compliance with the use and maintenance of quieted construction devices for the duration of the Project.
  - c. Indicate activities that may disturb building occupants and that are planned to be performed during non-standard working hours as coordinated with the Owner.

## PART 2 PRODUCTS

### 2.01 MATERIALS

- A. General: Provide new materials; if acceptable to the Owner's Representative, undamaged previously used materials in serviceable condition may be used. Provide materials suitable for the use intended.

### 2.02 EQUIPMENT

- A. Electrical Outlets:
  - 1. Properly-configured NEMA polarized outlets to prevent insertion of 110-120 volt plugs into higher voltage outlets.
  - 2. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button and pilot light, for connection of power tools and equipment.
- B. Electrical Power Cords:
  - 1. Provide grounded "hard-service" cords where exposed to abrasion and traffic.
  - 2. Provide waterproof connectors to connect separate lengths of electric cords.
- C. Lamps and Light Fixtures:
  - 1. Provide general service incandescent lamps of wattage required for adequate illumination.
  - 2. Provide guard cages or tempered glass enclosures, where exposed to breakage.
  - 3. Provide exterior fixtures where exposed to moisture.

### 2.03 TEMPORARY FACILITIES

- A. Provide, pay for, and maintain temporary facilities as needed for proper administration of the Project, including but not limited to
  - 1. Field office (Contractor's Option).
  - 2. Storage and protection of materials and equipment.
  - 3. Storage and protection of samples.
  - 4. Temporary toilets, wash facilities and drinking water.
  - 5. Covered waste containers.
  - 6. First Aid Supplies: Comply with governing regulations.
  - 7. Fire Extinguishers: Comply with NFPA 10 and 241 for classification, extinguishing agent, and size required by location and class of fire exposure.
  - 8. Construction waste management facilities.

9. Staging area protection.

### PART 3 EXECUTION

#### 3.01 INSTALLATION

- A. Provide each facility ready for use when needed to avoid delay.
- B. Use qualified personnel for installation of temporary facilities.
- C. Locate facilities where they serve the project adequately and do not interfere with the Work.
- D. Relocate and modify facilities as required.
- E. Maintain facilities and protections until they are no longer needed.

#### 3.02 TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES INSTALLATION

- A. Locate field offices, storage sheds, sanitary facilities and other temporary construction and support facilities for easy access.
- B. Temporary Heat: Provide temporary heat if required by construction activities, for curing or drying of completed installations or protection of installed construction from adverse effects of low temperatures or high humidity.
- C. Temporary Weather Protection: Provide temporary enclosure for protection of construction from exposure, foul weather, other construction operations, and similar activities.
- D. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily.
  1. Comply with requirements of NFPA 241 for removal of combustible waste material and debris.
  2. Do not hold materials more than seven (7) days during normal weather or 3 days when the temperature is expected to rise above 80 degrees F.

#### 3.03 SECURITY AND PROTECTION FACILITIES INSTALLATION:

- A. Temporary Fire Protection:
  1. Comply with NFPA 10 "Standard for Portable Fire Extinguishers," and NFPA 241 "Standard for Safeguarding Construction, Alterations and Demolition Operations."
  2. Combustible materials shall not be stored in the building.
  3. Temporary structures of combustible material shall be located not less than 30 feet from the building.

4. No smoking or use of tobacco in any form shall be permitted within 20 feet of the building or on the roof surfaces. The Contractor shall comply with the Owner's tobacco use policies elsewhere on Park property.
5. Liquids and adhesives shall be stored in a room having good ventilation and containing no other material, or in metal lockers or metal boxes with self-closing covers. Gasoline and other volatile and flammable liquids shall be stored in metal barrels well away from other structures or other combustible materials.
6. Implement special precautions for welding or cutting work. Maintain suitable fire extinguishing equipment near such operations.

B. Enclosure Fence for Staging Area.

C. Environmental Protection:

1. Comply with environmental regulations to minimize air, waterway, and subsoil contamination.
2. Use of tools and equipment which minimize harmful noise.
3. Restrict use of noise-making tools and equipment to hours that will minimize complaints.

### 3.04 OPERATION

- A. Maintain temporary construction and support facilities until near Substantial Completion.
- B. Enforce strict discipline in use of temporary facilities.
- C. Maintain facilities in good operating condition until removal.
- D. Protect from damage by freezing temperatures and the elements.
  1. Maintain operation of enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour day basis.
  2. Prevent piping from freezing.
- E. Maintain markers for underground lines. Protect from damage during excavation operations.

### 3.05 TERMINATION AND REMOVAL

- A. Remove each facility when the need has ended or replaced by a permanent.
- B. Complete or restore construction delayed because of interference with the facility. Repair damaged work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

END OF SECTION 01 50 00

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## SECTION 016000 - PRODUCT REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for products incorporated into the Project.
  - 1. Unless specifically-approved by the Architect and Owner, provide new products for the Project.
  - 2. Furnish products in standard quantities and dimensions.
  - 3. Products shall originate from sources approved by the original manufacturers.
  - 4. Deliver products in the original manufacturer's packaging with labels detailing contents.
    - a. Exceptions are bulk materials, such as soil and loose aggregate materials, and commodities like steel and lumber products. Such products shall be accompanied by delivery slips and certificates that document their qualitative characteristics.
  - 5. Products shall include all accessories and appurtenances necessary for their complete installation and proper function. Accessories and appurtenances shall be manufactured or approved by the primary product manufacturer.
  - 6. When specified in subsequent Sections, provide extra materials in the quantities specified for the Owner's future use.

#### 1.3 DEFINITIONS

- A. Products: Materials, equipment, systems, and terms of similar intent for constructing the Project.
  - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
  - 2. Comparable Products: Product approved by the Architect through submittal process to have the qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

- B. Basis-of-Design Product Specification: A single product is specified with product attributes and characteristics listed to establish the quality related to type, function, in-service performance and physical properties, and other special features for the Project.

#### 1.4 SUBMITTALS

- A. Comply with Division requirements in Section 013300 "Submittal Procedures."

#### 1.5 QUALITY ASSURANCE

- A. Compatibility: All products, accessories, and related appurtenances shall be compatible with interfacing products. Isolate incompatible materials, such as dissimilar metals, to avoid
- B. Identification of Products: Except for required labels and operating data, do not attach or imprint manufacturer or product names or trademarks on exposed surfaces of products or equipment that will be exposed to view in occupied spaces or on the exterior.
  - 1. Labels: Locate required product labels and stamps on a concealed surface, or, where required for observation following installation, on a visually accessible surface that is not conspicuous.
  - 2. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on a visually accessible but inconspicuous surface. Include information essential for operation, including the following:
    - a. Name of product and manufacturer.
    - b. Model and serial number.
    - c. Capacity.
    - d. Speed.
    - e. Ratings.
  - 3. See individual identification sections in Divisions 21, 22, 23, and 26 for additional identification requirements.

#### 1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
  - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
  - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.



3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.
7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
- B. Special Warranties: Where specified in subsequent Sections, provide the manufacturer's written agreements to repair or replace work that exhibits defects within the specified warranty period(s).
  1. The warranty agreements shall comply with the terms specified in each Section. Submit sample warranties to verify compliance with the specified terms.
  2. All warranties shall confirm that the Work is warrantable under the specified terms "as installed."
  3. All warranty periods shall commence on the date of Substantial Completion unless special terms are approved by the Owner and verified in writing prior to the commencement of the Work.
- C. Detailed Content: Warranties shall provide the following:
  1. Name and address of the Project.
  2. Name, address, and signature of the Trade Contractor

3. Name and address of the Installer/Applicator
4. Warranty Commencement Date (Substantial Completion Date)
5. Warranty End Date.
6. Signature of Manufacturer's Authorized Agent.

D. Submittal Time: Comply with Division 01 requirements.

#### 1.8 SUBSTITUTIONS

- A. Refer to Section 012500 "Substitution Procedures."

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

## SECTION 017300 - EXECUTION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
  - 1. Pre-installation requirements
  - 2. Examination
  - 3. Preparation
  - 4. Installation of the Work.
  - 5. Cutting and patching.
  - 6. Coordination of Owner-installed products.
  - 7. Progress cleaning.
  - 8. Protection of installed construction.

#### 1.3 PREINSTALLATION REQUIREMENTS

- A. Pre-Installation Meetings: Conduct pre-installation meetings according to Division 01 requirements for Project Management and Coordination, and as follows:
  - 1. Pre-installation meetings shall be conducted with all trades whose work requires coordination with other trades and also when specified.
  - 2. Pre-installation meetings shall be scheduled and conducted sufficiently in advance of the work to allow evaluation and correction of existing conditions that would adversely affect the quality of the work as a whole.

#### 1.4 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services; and other utilities.
  2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
  2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
  3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
1. Description of the Work.
  2. List of detrimental conditions, including substrates.
  3. List of unacceptable installation tolerances.
  4. Recommended corrections.
- D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.
- 1.5 PREPARATION
- A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Section 013100 "Project Management and Coordination."

## 1.6 INSTALLATION

- A. Locate the Work and components of the Work accurately, in correct alignment and elevation.
  - 1. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
  - 2. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is affected by damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Select tools or equipment that minimize production of excessive noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
  - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
  - 2. Allow for building movement, including thermal expansion and contraction.
  - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Repair or remove and replace damaged, defective, or nonconforming Work.
  - 1. Comply with Section 017700 "Closeout Procedures".

#### 1.7 CUTTING AND PATCHING

- A. Cutting and Patching Conference: Conduct conference at Project site.
  - 1. Review extent of cutting and patching anticipated and examine procedures for ensuring satisfactory result from cutting and patching work. Require representatives of each entity directly concerned with cutting and patching to attend, including the following:
    - a. Contractor's superintendent.
    - b. Trade supervisor responsible for cutting operations.
    - c. Trade supervisor(s) responsible for patching of each type of substrate.
    - d. Mechanical, electrical, and utilities subcontractors' supervisors, to the extent each trade is affecting by cutting and patching operations.
  - 2. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- B. Cutting and Patching Plan: Submit plan describing procedures at least **10** days prior to the time cutting and patching will be performed. Include the following information:
  - 1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
  - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
  - 3. Products: List products to be used for patching and firms or entities that will perform patching work.
  - 4. Dates: Indicate when cutting and patching will be performed.
  - 5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
    - a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.
- C. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
  - 1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.

2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include but are not limited to the following:
    - a. Primary operational systems and equipment.
    - b. Fire separation assemblies.
    - c. Air or smoke barriers.
    - d. Fire-suppression systems.
    - e. Plumbing piping systems.
    - f. Mechanical systems piping and ducts.
    - g. Control systems.
    - h. Communication systems.
    - i. Fire-detection and -alarm systems.
    - j. Conveying systems.
    - k. Electrical wiring systems.
    - l. Operating systems of special construction.
  3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Elements include but are not limited to the following:
    - a. Water, moisture, or vapor barriers.
    - b. Membranes and flashings.
    - c. Exterior curtain-wall construction.
    - d. Sprayed fire-resistive material.
    - e. Equipment supports.
    - f. Piping, ductwork, vessels, and equipment.
    - g. Noise- and vibration-control elements and systems.
  4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- D. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

- E. Temporary Support: Provide temporary support of work to be cut.
- F. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- G. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 011000 "Summary."
- H. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
- I. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
  - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
  - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
  - 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
    - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
  - 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
  - 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- J. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

#### 1.8 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction personnel.



- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.
  - 1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
  - 2. Preinstallation Conferences: Include Owner's construction personnel at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

#### 1.9 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
  - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  - 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
  - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
    - a. Use containers intended for holding waste materials of type to be stored.
  - 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
  - 1. Remove liquid spills promptly.
  - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls."
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

1.10 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.
- C. Comply with manufacturer's written instructions for temperature and relative humidity.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 017300

## SECTION 017700 - CLOSEOUT PROCEDURES

### PART 1 GENERAL

#### 1.01 RELATED DOCUMENTS

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

#### 1.02 SUMMARY

- A. Section Includes:

- 1. Closeout Procedures
- 2. Inspection Procedures

- B. Related Sections:

- 1. Section 017839 "Project Record Documents."

#### 1.03 PREREQUISITES TO SUBSTANTIAL COMPLETION

- A. General: Prior to requesting Architect's inspection for certification of Substantial Completion (for either entire work or portions thereof), the Contractor shall complete the following and list known exceptions in request:

- 1. In progress payment request, coincident with or first following date claimed, show either 100 percent completion for portion of work claimed as "substantially complete", or list incomplete items, value of incompleteness, and reason for being incomplete.
- 2. Include supporting documentation for completion as indicated in these Contract Documents.
- 3. Submit a statement showing accounting of changes to Contract Sum.
- 4. Prepare, submit, and complete a Punch List in accordance with General Conditions. This must be completed before the Architect will schedule inspection.
- 5. Advise the Owner of pending insurance changeover requirements.
- 6. Submit specific warranties, workmanship/maintenance bonds, maintenance agreements, final certifications, and similar Documents.
- 7. Obtain and submit releases enabling the Owner's full and unrestricted use of the work and access to services and utilities including, where required, Occupancy Permits, Operating Certificates, Waivers of Lien, and similar releases.
- 8. Submit record Drawings, maintenance manuals, and similar final record information.

9. Deliver tools, spare parts, extra stocks of materials, and similar physical items to the Owner.
10. Discontinue (or change over) and remove from Project site, temporary facilities and services, along with construction tools and facilities, mock-ups, and similar elements.
11. Complete final cleaning requirements, including touch-up painting of marred surfaces.
12. Touch-up and otherwise repair and restore marred, exposed finishes.

#### 1.04 INSPECTION PROCEDURES

- A. Upon receipt of Contractor's request, the Architect will either proceed with inspection or advise Contractor of prerequisites not fulfilled. Following initial inspection, the Architect will either prepare certificate of substantial completion, or advise Contractor of work which must be performed prior to issuance of certificate, and repeat inspection when requested and assured that work has been substantially completed. Results of completed inspection will form initial "Punch-List" for final acceptance.
- B. If the Architect accepts the request and subsequently determines that the Work is not in conformity with the Contract Documents, the Architect may request compensation for expenses related to excessive Punch List activities. The Owner may deduct that additional compensation to the Architect from payments then or thereafter due the Contractor. If payments then or thereafter due the Contractor are not sufficient to cover those amounts, the Contractor shall immediately pay the amount of the insufficiency to the Owner.

#### 1.05 REINSPECTION PROCEDURE

- A. Upon receipt of the Contractor's notice that the work has been completed, including Punch-List items resulting from earlier inspections, and excepting incomplete items delayed because of acceptable circumstances, Architect will reinspect the work. Upon completion of reinspection, Architect will either prepare Certificate of Final Acceptance or advise Contractor of work not completed or obligation not fulfilled as required for final acceptance. If necessary, procedure will be repeated.
- B. If multiple inspections of items on the Architect's Punch List are required due to a Subcontractor's failure to properly and timely complete them, the that Subcontractor shall pay any additional costs incurred by the Architect, and the Owner, resulting from any attendant delay. The Owner may deduct those additional costs from payments then or thereafter due the Contractor. If payments then or thereafter due the Contractor are not sufficient to cover those amounts, the Contractor shall immediately pay the amount of the insufficiency to the Owner.
- C. Notwithstanding any other provision of the Contract Documents, the Final Inspection of the Work or the issuance of Final Acceptance constitutes neither an acceptance of any Defective Work, nor a waiver of any rights set forth in the Contract Documents or otherwise provided by Applicable Law.

#### 1.06 PREREQUISITES TO FINAL ACCEPTANCE

- A. General: Prior to requesting Architect's final inspection for certification of final acceptance and final payment, as required by General Conditions, complete the following and list known exceptions (if any) in request:
1. Submit final payment request with final releases, Waivers of Liens, and supporting documentation not previously submitted and accepted. Include Certificates of Insurance for products and completed operations where required.
  2. Submit updated final statement, accounting for additional (final) changes to Contract Sum.
  3. Submit certified copy of Architect's final Punch-List of itemized work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, endorsed, and dated by Architect.
  4. Submit consent of surety to final payment.
  5. Revise and resubmit evidence of final, continuing insurance coverage complying with insurance requirements.

#### 1.07 OPERATION AND MAINTENANCE MANUALS

- A. General: Where Manuals are required to be submitted covering items included in this work, prepare all such Manuals in durable plastic binders approximately 8-1/2 x 11 inches in size with at least the following:
1. Identification on or readable through the front cover stating the general nature of the Manual.
  2. Provide index near the front of the Manual with emergency data regarding the installation.
  3. Complete instructions regarding operating and maintenance of all equipment involved.
  4. Complete nomenclature of all replaceable parts, their part numbers, current cost, and name and address of nearest vendor of parts.
  5. Copy of all guarantees and warranties issued.
  6. Copy of approved shop drawing(s) with all data concerning all changes made during construction.

#### 1.08 RECORD DOCUMENT SUBMITTALS

- A. General: Specific requirements for record documents are indicated in individual Sections of the Specifications. Other requirements are indicated in General Conditions. General submittal requirements are indicated in "Submittals" Sections. Do not use record documents for construction purposes. Protect from deterioration and loss in secure, fire-resistive location. Provide access to record documents for Architect's reference during normal working hours.

- B. Record Drawings: Prepare and submit according to Section 017839 "Project Record Documents."
- C. Record Specifications: Prepare and submit according to Section 017839 "Project Record Documents."
- D. Record Data: Prepare and submit according to Section 017839 "Project Record Documents."

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
  - 1. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
  - 2. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
  - 3. Rake grounds that are not planted, mulched, or paved to a smooth, even-textured surface.
  - 4. Remove tools, construction equipment, machinery, and surplus material from Project site.
  - 5. Remove snow and ice to provide safe access to building.
  - 6. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
  - 7. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
  - 8. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
  - 9. Remove labels that are not permanent.

10. Leave Project clean and ready for occupancy.

END OF SECTION 017700

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## SECTION 017823 - OPERATION AND MAINTENANCE DATA

### PART 1 GENERAL

#### 1.01 RELATED DOCUMENTS

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

#### 1.02 SUMMARY

- A. This Section includes the administrative requirements, procedural obligations, terms and conditions and general requirements related to the preparation and submittal of instruction manuals covering the materials installed, care, preservation and maintenance of products, finishes, equipment and systems.
- B. Related Sections:
  - 1. Special operating and maintenance data requirements for specific equipment or building operating systems are included in the appropriate Specifications Sections of Divisions 02 through 33.
  - 2. Section 013300 "Submittal Procedures".
  - 3. Section 017700 "Closeout Procedures".
  - 4. Section 017839 "Project Record Documents".

#### 1.03 SUBMITTALS

- A. Submittal Schedule: Comply with the following schedule for submittal of operating and maintenance manuals:
  - 1. Submit two (2) copies of the first and subsequent drafts of each manual for review. Include a complete index and table of contents for each volume. One (1) copy will be returned within 45 days of receipt with comments. The first draft shall be at least 95% complete. Provide four (4) copies of FINAL manuals prior to commencement of training; these manuals shall be utilized as instructional text during the building orientation and training processes.
- B. Form of Submittal: Manuals should be prepared in the form of an instructional manual for use by the Owner's operating personnel. The information should be bound as follows:
  - 1. Binders: For each manual, provide heavy-gauge, commercial quality, vinyl hanging VUE presentation binders in 3" capacity sized to receive 8-1/2" by 11" paper. Binder color shall be white.
    - a. Identify each binder on the spine with the typed or printed title "OPERATION AND MAINTENANCE MANUAL", project name and subject matter covered.
    - b. Indicate the volume number for multiple volume sets of manuals.

2. Dividers: Manual contents shall be organized and divided by specification divisions using index maker dividers.
3. Protective Plastic Jackets: Provide protective transparent plastic jackets designed to enclose diagnostic software for computerized electronic equipment.
4. Text Material: Where written material is required as part of the manual, use the manufacturer's standard printed material.
5. Drawings: Where drawings or diagrams are required as part of the manual, provide protective plastic jackets for the drawings and bind in with the text.
  - a. Where oversize drawings are necessary, fold the drawings to the same size as the text pages and use as a foldout.
  - b. If drawings are too large to be used practically as a foldout, place the drawing, neatly folded, in the front or rear pocket of the binder. Insert a typewritten page indicating the drawing title, description of contents and drawing location at the appropriate location in the manual.

#### 1.04 GENERAL MANUAL CONTENT

- A. In each manual, include information specified in the individual Specification Section and the following information for each major component of building equipment and its controls:
  1. General description.
  2. Design factors and assumptions.
  3. Copies of approved shop drawings and product data.
  4. Detailed preventative maintenance procedures.
  5. Precautions against improper use and maintenance.
  6. Copies of warranties, including extended warranty options.
  7. Material safety data sheets.
  8. Copies of inspections and certifications by governing authorities.
- B. Manual Index: Organize each manual into separate Sections for each piece of related equipment. As a minimum each manual shall contain a title page, a table of contents, copies of Product Data, supplemented by drawings and written text, and copies of each warranty, bond and service contract proposal.
- C. Title Page: Provide a title page as the first sheet of each manual. Provide the following information.
  1. Subject matter covered by the manual.
  2. Name and number of the Contract.
  3. Date of submittal.
  4. Name, address, and telephone number of the Contractor and Subcontractor.
  5. Name and address of the Architect/Engineer.

6. Cross reference to related systems in other operating and maintenance manuals.
- D. General Table of Contents: After the Title Page, include a typewritten table of contents for each volume (Divisions 02 through 33 (inclusive), arranged according to the specification format.
- E. General Information: Provide a general information Section immediately following the Table of Contents, listing by Specification Section each major product included in the manual, identified by product name. Under each product, list the name, address, telephone number, and point of contact of the Subcontractor or installer, and the maintenance contractor. Clearly delineate the extent of responsibility of each of these entities. In addition, list a local source for replacement parts and equipment.
- F. Product Data: Where manufacturer's standard printed data is included in the manuals, include only sheets that are pertinent to the part or product installed. Mark each sheet to identify each part or product included in the installation. Where more than one item in a tabular format is included, identify each item, using appropriate references from the Contract Documents. Identify data that is applicable to the installation and delete references to information that is not applicable.
  1. Moisture-Protection and Weather-Exposed Products: Provide complete manufacturer's data with instructions on inspection, maintenance and repair of products exposed to the weather or designed for moisture-protection purposes.
    - a. Manufacturer's Data: Provide manufacturer's data giving detailed information, including the following, as applicable:
      - 1) Applicable standards
      - 2) Chemical composition
      - 3) Installation details
      - 4) Inspection procedures
      - 5) Maintenance information
      - 6) Repair procedures
- G. Written Text: Where manufacturer's standard printed data is not available, and information is necessary for proper operation and maintenance of systems, or it is necessary to provide additional information to supplement data included in the manual, prepare written text to provide necessary information. Organize the text in a consistent format under separate headings for different procedures. Where necessary, provide a logical sequence of instruction for each operating or maintenance procedure.
- H. Drawings: Provide specially prepared drawings where necessary to supplement manufacturer's printed data to illustrate the relationship of component parts of equipment or systems, or to provide control or flow diagrams. Coordinate these drawings with information contained in Project Record Drawings to assure correct illustration of the completed installation. Do not use original Project Record Documents as part of the Operating and Maintenance Manuals.

- I. Warranties, Bonds, and Service Contracts: Provide a photocopy of each warranty, bond, or service contract in the appropriate manual for the information of the Owner's operating personnel. Provide written data outlining procedures to be followed in the event of product failure including the return policies/procedures. List circumstances and conditions that would affect validity of the warranty or bond. Commencement and expiration dates shall be clearly indicated.
- J. Provide complete information in the manual on products specified in Divisions 02 through 33.

#### 1.05 TRAINING OF OPERATING AND MAINTENANCE PERSONNEL

- A. Prior to final inspection, instruct the hotel personnel in operation, adjustment, and maintenance of products, equipment and systems.
  1. Use operation and maintenance manuals for each piece of equipment or system as the basis of instruction. Review contents in detail to explain all aspects of operation and maintenance.

#### 1.06 OPERATING AND MAINTENANCE MANUALS

- A. Submit copies of each manual, in the form specified, for distribution.
  1. Refer to individual Specification Sections and other paragraphs within this Section for additional requirements.

#### 1.07 MAINTENANCE OF DOCUMENTS AND SAMPLES

- A. Store Record Documents and Samples in the field office apart from Contract Documents used for construction. Do not permit Project Record Documents to be used for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition. Make Documents and Samples available at all times for inspection by the Owner's Representative or Architect.

### PART 2 PRODUCTS

Not Used

### PART 3 EXECUTION

Not Used

END OF SECTION 017823

## SECTION 017839 - PROJECT RECORD DOCUMENTS

### PART 1 GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements for Project Record Documents to be prepared and submitted by the General Contractor.
- B. Project Record Documents required include:
  - 1. Record Drawings
  - 2. Record Specifications
  - 3. Record Product Data
  - 4. Miscellaneous Records
- C. Related Sections:
  - 1. Section 013300 "Submittal Procedures."
  - 2. Section 017700 "Closeout Procedures."

#### 1.02 RECORD DRAWINGS

- A. Each Trade Contractor shall maintain in white-print set (blue-line or black-line) Contract Drawings and shop drawings in clean, undamaged condition, with mark-up of actual installations varying substantially from the work as originally shown. Mark whichever Drawing is most capable of showing "field" condition fully and accurately. However, where shop drawings are used for mark-up, record a cross-reference at corresponding location on working Drawings. Mark with red erasable pencil and, where feasible, use other colors to distinguish between variations in separate categories of work. Mark-up new information which is recognized to be of importance to the Owner, but was, for some reason, not shown on either Contract Drawings or Shop Drawings. Give particular attention to concealed work that would be difficult to measure and record at a later date. Note related change order numbers where applicable. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates, and other identification on cover of each set.
- B. Responsibility for Markup: Where feasible, the individual or entity who obtained record data, when the individual or entity is the Trade Contractor, installer, or similar entity, is required to prepare the mark-up on record drawings.

- C. At time of Substantial Completion, submit record drawings to the Architect for Owner's records. Organize into sets, bind and label sets for Owner's continued use.
  - 1. Submit PDF electronic files of scanned record prints.
  - 2. Submit all drawings in set, whether or not changes and additional information were recorded.
- D. General: Refer to Section 017700 "Closeout Procedures" for additional requirements.

### 1.03 RECORD SPECIFICATIONS

- A. Each Trade Contractor shall maintain one copy of Specifications, including addenda, change orders, and similar modifications issued in printed form during construction, and mark-up variations (of substance) in actual work in comparison with text of Specifications and modifications as issued. Give particular attention to substitutions, selection of option, and similar information on work where it is concealed or cannot otherwise be readily discerned at a later date by direct observation. Note related record Drawing information and product data, where applicable. Upon completion of mark-up, submit to Architect for the Owner's records
- B. The General Contractor is responsible for marking-up Sections that contain its own Work.
  - 1. Submit annotated PDF electronic files with comment function enabled of Project's Specifications, including addenda and contract modifications.
- C. General: Refer to Section 017700 "Closeout Procedures" for additional requirements.

### 1.04 RECORD PRODUCT DATA

- A. During the construction period, maintain one copy of each product data submittal for Project record document purposes.
  - 1. Mark product data to indicate the actual product installation where installation varies substantially from that indicated in product data submitted. Include significant changes in the product delivered to the site and changes in manufacturer's instructions and recommendations for installation.
  - 2. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  - 3. Note related Change Orders and mark-up of record drawings, where applicable.
  - 4. Upon completion of mark-up, submit a complete set of record product data to the Architect for the Owner's records.
    - a. Submit annotated PDF electronic files with comment function enabled of product data, including addenda and contract modifications.
  - 5. Where record product data is required as part of maintenance manuals, submit marked-up product data as an insert in the manual instead of submittal as record product data.

1.05 RECORD SAMPLE SUBMITTAL

- A. Retain a specimen of each approved sample used in the Project for the Owner's records.

1.06 MISCELLANEOUS RECORD SUBMITTALS

- A. Refer to other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Immediately prior to Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for use and reference. Submit to the Architect for the Owner's records.
  - 1. Categories of requirements resulting in miscellaneous records include, but are not limited to, the following:
    - a. Authorized Measurements Utilizing Unit Prices or Allowances
    - b. Batch Mixing and Bulk Delivery Records
    - c. Load and Performance Testing
    - d. Inspections and Certifications by Governing Authorities
    - e. Final Inspection and Correction Procedures
  - 2. Submit annotated PDF electronic files Submit annotated PDF electronic files with comment function enabled of miscellaneous records.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 RECORDING

- A. Post changes and modifications to the Documents as they occur. The Architect will periodically review record documents to assure compliance.

END OF SECTION 017839

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SECTION 024119 – SELECTIVE DEMOLITION

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SECTION INCLUDES:

- A. Selective demolition for remodeling.
- B. Temporary protections for work to remain.
- C. Related Requirements:
  - 1. Document 003126 “Existing Hazardous Materials Information.”
  - 2. Section 013523 “Safety, Health, and Environment”
  - 3. Section 014200 “Quality Requirements”
  - 4. Section 015000 “Temporary Facilities and Controls”
- D. Related Work Specified Elsewhere
  - 1. Section 028220 “Hazardous Material Abatement.”
  - 2. Section 028221 "Roofing Abatement."
  - 3. Section 070150.19 “Preparation for Reroofing”

1.03 DEFINITIONS

- A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.
- B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner.
- C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.
- D. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

1.04 MATERIALS OWNERSHIP

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

1.05 PREINSTALLATION MEETINGS

- A. Pre-demolition Conference:

1. Inspect and discuss condition of construction to be selectively demolished.
2. Review structural load limitations of existing structure.
3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
5. Review areas where existing construction is to remain and requires protection.
6. Review requirements for storage of salvaged materials scheduled for re-installation.
7. Conference Location: Project site.

#### 1.06 INFORMATIONAL SUBMITTALS

- A. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control. Indicate proposed locations and construction of barriers.
- B. Schedule of Selective Demolition Activities: Indicate the following:
  1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
  2. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
- C. Pre-demolition Photographs or Video: In a format acceptable to the Owner's Representative, photographically document existing conditions of adjoining construction, including finish surfaces, that might be misconstrued as damage caused by demolition operations. Submit before Work begins.

#### 1.07 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.

#### 1.08 SUBMITTALS

- A. Submit for the Owner's approval a selective demolition plan coordinated with the Owner's continuing operations in the facility and historic removal and dismantling procedures.

#### 1.09 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: Hazardous materials have been identified in the facility. Hazardous material abatement is work of this Contract. Refer to Section 028220 “Hazardous Material Abatement” for requirements.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Services: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
  - 1. Maintain fire-protection facilities in service during selective demolition operations.
- G. Coordinate selective demolition with requirements specified in the following Sections:
  - 1. Section 015000 “Temporary Facilities and Controls”

## PART 2 PRODUCTS

### 2.01 PRODUCTS, GENERAL

- A. Provide all materials and equipment necessary for conducting selective demolition in a manner that does not disrupt the Owner’s continuing operations in the facility, including but not limited to:
  - 1. Dust and noise partitions.
  - 2. Temporary climate control.
  - 3. Fire extinguishers.
  - 4. Other items necessary but not specifically identified.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.
- C. Continuously evaluate the condition of the building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.
  - 1. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.
  - 2. Engage and pay for the services of a qualified structural engineer licensed to practice in the jurisdiction of the Project if professional evaluation of conditions is appropriate.

- D. Survey of Existing Conditions: Record existing conditions by use of measured drawings, preconstruction photographs or video and templates.
  - 1. Comply with Division 01 requirements for photographic documentation.
  - 2. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.
  - 3. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

### 3.02 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
  - 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
  - 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
  - 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
  - 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
  - 5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
  - 1. Strengthen or add new supports when required during progress of selective demolition.
- C. Remove temporary barricades and protections where hazards no longer exist.

### 3.03 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
- B. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.

- C. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
- D. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
- E. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
- F. Maintain fire watch during and for at least two hours after flame-cutting operations.
- G. Maintain adequate ventilation when using cutting torches.
- H. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
- I. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
- J. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
- K. Dispose of demolished items and materials promptly.

#### 3.04 CLEANING

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

END OF SECTION 024119

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## SECTION 028220 - HAZARDOUS MATERIALS ABATEMENT

### PART 1 – GENERAL

#### 1.01 RELATED DOCUMENTS

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

#### 1.02 SUMMARY

- A. This Section includes the following:
  - 1. Removal and disposal of hazardous materials and related work.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
  - 1. Document 003126 “Existing Hazardous Materials Information.”
  - 2. Section 011000 "Summary" for use of the premises and phasing requirements.
  - 3. Section 015000 "Temporary Facilities and Controls" for temporary utilities, temporary construction and support facilities, temporary security and protection facilities, and environmental protection measures for selective demolition operations.
  - 4. Section 013523 "Safety, Health, and Environment.”
- C. Related Work Specified Elsewhere
  - 1. Section 024119 “Selective Demolition.”
  - 2. Section 028221 "Roofing Abatement."
  - 3. Section 070150.19 “Preparation for Reroofing”

#### 1.03 GENERAL REQUIREMENTS

- A. The project consists of removal and disposal of asbestos-containing roof flashing associated with the Lower Park Heights Community Center Roof Replacement, located at 3939 Reisterstown Road, Baltimore MD 21215.
- B. The Environmental Consultant for the project is Aria Environmental , Inc. The Environmental Consultant’s main office is located at 5292B Enterprise Street, Sykesville, MD 21784. All communication, except Abatement Notifications shall go through the Architect. The contractor shall submit all notifications to the Environmental Consultant.
- C. The Hazardous Materials Abatement Contractor must electronically notify the Owner at least five (5) business days prior to commencement of abatement. Failure to notify the Owner result in stoppage of work and project delays. Reference Quality Assurance of this section for additional Hazardous Materials Abatement Contractor requirements and qualifications.
  - \*Hazardous Materials Abatement Contractor must also notify the Owner immediately upon arrival of any regulatory enforcement officer, including, but not limited to the State of Maryland, EPA, or OSHA personnel. Copies of inspection reports must be immediately submitted to the Environmental Consultant.
- D. The roofing abatement work may be performed by a properly trained roofing contractor.Refer

to Quality Assurance article of this section for certification requirements.

1.04 GLOSSARY OF TERMS

AHERA	Asbestos Hazard Emergency Response Act
AIHA	American Industrial Hygiene Association
ACM	Asbestos Containing Material
CAHES	Certified Asbestos Hazard Evaluation Specialist
CFR	Code of Federal Regulations
COMPETEN TPERSON	Person Designated by the Hazardous Material Abatement Contractor as the Responsible Person
DOT	Department of Transportation
EPA	Environmental Protection Agency
F/CC	Fibers per Cubic Centimeter
GFCI	Ground Fault Circuit Interrupters
HEPA	High Efficiency Particulate Air
HMAC	Hazardous Materials Abatement Contractor
HVAC	Heating, Ventilating, and Air Conditioning
LBP	Lead Based Paint
MAG	Magnesia
MSDS	Material Safety Data Sheet
MSHA	Mine Safety and Health Administration
NECA	National Electrical Contractors Association
NEMA	National Electrical Manufacturers Association
NESHAPs	National Emission Standard for Hazardous Air Pollutants
NIH	National Institutes of Health
NIOSH	National Institute for Occupational Safety and Health
NVLAP	National Voluntary Laboratory Accreditation Program
OD	Outer Diameter of Pipe Insulation
OSHA	Occupational Safety and Health Administration
ORM	OSHA Reference Method
PAPR	Powered Air Purifying Respirator
PAT	Proficiency Analytical Testing
PEL	Permissible Exposure Limit
PCB	Polychlorinated Bi-phenyls
PCM	Phase Contrast Microscopy
RACM	Regulated Asbestos Containing Material
SF	Square Foot(Feet)
TEM	Transmission Electron Microscopy
TSI	Thermal System Insulation
UL	Underwriters Laboratories
USEPA	United States Environmental Protection Agency

1.05 DESCRIPTION OF THE WORK

- A. General. Drawings and general provisions of the Contract, including General and Special Conditions and other Division 01 Specification Sections, apply to this Section. The following attachments are included as part of this section:
1. Asbestos Inspection Report – Testing for Hazardous Materials Survey for Lower Park Heights Community Center Roof Replacement, dated July 26, 2022, prepared by Aria Environmental, Inc. is provided in Document 00 31 26. Contractor should not use this report for bidding purposes. A copy of each report must be maintained on-site by the



contractor at all times.

- B. Removal and Disposal. The Hazardous Materials Abatement Contractor (HMAC) shall remove and dispose of the listed friable ACM, non-friable ACM and non-ACM materials associated with the project. The following tables summarize the various asbestos-containing materials and total estimated quantities for each material required for abatement by the HMAC. The HMAC must verify materials and quantities prior to bid and submit any exceptions in writing prior to submission of bid.

**Table 1 – Scope of Work for Hazardous Materials Abatement:**

ACM	Estimated Quantities (1)	Location
Black Tar (asbestos)	150 linear feet	lobby roof overhang
Drainage Pad (asbestos)	50 square feet	roof
Non-asbestos Floor Tile w/ Asbestos containing Mastic	768 square feet	lobby
Wall Seam Caulk	100 linear feet	exterior
Fire Doors (asbestos)	11 each	interior
Halogen Lights / Canister Lamps (to be identified if containing mercury)	28 each	interior
Exit emergency light (universal waste)	1 each	interior
Door closers (containing oil waste)	6 each	interior

Table Specific Notes:

- (1) Remove and dispose of all asbestos-containing roof flashing materials down to clean substrate. Refer to HMAC report for locations.

1.06 GENERAL NOTES

1. ALL QUANTITIES AND LOCATIONS ARE ESTIMATES. ABATEMENT CONTRACTOR IS RESPONSIBLE FOR VERIFYING QUANTITIES AND EXACT LOCATIONS IN PREPARING BIDS AND EXECUTING WORK.
2. SPECIFIC INFORMATION REGARDING METHOD OF INSTALLATION AND COMPONENTS OF CEILINGS, WALL, PLATFORMS, FLOOR SYSTEMS, ETC. ARE NOT PROVIDED WITHIN CONTRACT DOCUMENTS. BIDDERS WILL BE AFFORDED ACCESS TO THE SITE TO REVIEW EXISTING CONDITIONS AT THE PRE-BID MEETING. BIDDERS SHALL FILL ALL HOLES, CLEAN UP, AND RESTORE SITE TO ITS FORMER CONDITION UPON COMPLETION OF ANY EXPLORATIONS PERFORMED. ADDITIONAL SITE VISITS, IF REQUIRED, SHALL BE SCHEDULED THROUGH THE CONTRACT ADMINISTRATION OFFICE AND WILL BE OPEN TO ALL BIDDERS.

3. THE CONTRACTOR SHALL DECONTAMINATE ALL BUILDING MATERIALS, WHICH BECOME CONTAMINATED OR ARE DISTURBED FROM ASBESTOS REMOVAL.
4. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ANY AND ALL SAFETY AND FALL PROTECTION REQUIRED FOR THE PERFORMANCE OF THIS WORK.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND LEGAL DISPOSAL OF ALL ASBESTOS-CONTAINING FLASHING FELTS DOWN TO THE ROOF DECK. PERLITE BOARD OR OTHER INSULATING MATERIALS FROM WHICH ASBESTOS-CONTAINING FLASHING FELTS CANNOT BE COMPLETELY REMOVED SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF AS ASBESTOS-CONTAINING WASTE AT A PRE-APPROVED LANDFILL.
6. ABATEMENT CONTRACTOR SHALL OBTAIN APPROVAL OF ACCEPTANCE OF CATEGORY I ASBESTOS CONTAINING WASTE AS GENERAL CONSTRUCTION AND DEBRIS WASTE PRIOR TO BID.
7. THE OWNER AND ARCHITECT/ENGINEER (A/E) HAVE THE RIGHT TO CONTROL LOCATION OF ALL ABATEMENT CONTRACTOR'S SUPPLIES AND STORAGE.
8. ABATEMENT CONTRACTOR SHALL COORDINATE SHUT DOWN OF HVAC AND ELECTRICAL SYSTEMS AS REQUIRED TO COMPLETE SPECIFIED ABATEMENT WORK WITH THE-OWNER, A/E, AND GENERAL CONTRACTOR.
9. ABATEMENT CONTRACTOR SHALL COORDINATE ON SITE WORK, INCLUDING SPECIFIC WORK AREA LOCATIONS AND SCHEDULING, WITH THE OWNER, A/E, GENERAL AND SUB-CONTRACTORS TO FACILITATE THE PROMPT COMPLETION OF ALL ASPECTS OF THE ABATEMENT PROJECT.
10. THE OWNER IS RESPONSIBLE FOR MOVING THE ANY EQUIPMENT AND OR MATERIALS FROM WORK AREAS. ANY EQUIPMENT AND OR MATERIALS LEFT IN THE WORK AREAS BY THE OWNER SHALL BE MOVED AND/OR PROTECTED BY ABATEMENT CONTRACTOR AS NECESSARY TO COMPLETE ABATEMENT WORK.
11. ABATEMENT CONTRACTOR MUST CONFORM TO REQUIREMENTS IN THE FRONT END DOCUMENTS IN REGARDS TO PARKING REQUIREMENTS AND PRIOR TO INTERRUPTING ANY ROADWAYS AND/OR PARKING LOTS AFFECTED BY THE SCOPE OF WORK.
12. ABATEMENT CONTRACTOR IS TO ADHERE TO THE OSHA STANDARD 29 CFR 1926.62 LEAD EXPOSURE IN CONSTRUCTION WHEN PERFORMING SELECTIVE DEMOLITION WORK PRACTICES, IMPACTING, OR DISTURBING ANY BUILDING MATERIALS. HAZARDOUS MATERIALS ABATEMENT CONTRACTOR MUST CONDUCT DAILY EXPOSURE MONITORING FOR LEAD-IN-THE-AIR AND COMPLY WITH ALL APPLICABLE REGULATIONS.

13. SPECIAL CARE SHOULD BE TAKEN WHEN WORKING NEAR ELECTRIC, WATER, STEAM, AND GAS SUPPLY LINES.
14. ABATEMENT CONTRACTOR IS RESPONSIBLE FOR FOLLOWING AND ADHERING TO ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS INCLUDING, BUT NOT LIMITED TO, THOSE SET FORTH BY THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (USEPA), OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND THE STATE OF MARYLAND.
15. ABATEMENT CONTRACTOR SHALL DECONTAMINATE ALL BUILDING MATERIALS, WHICH BECOME CONTAMINATED OR ARE DISTURBED FROM ASBESTOS AND OTHER HAZARDOUS MATERIAL REMOVAL.
16. ABATEMENT CONTRACTOR MUST NOTIFY THE OWNER AT LEAST FIVE (5) BUSINESS DAYS PRIOR TO THE START OF WORK ON THE REQUIRED ELECTRONIC FORM.

#### 1.07 QUALITY ASSURANCE

- A. General. Perform all asbestos removal work in compliance with applicable requirements of governing agencies having jurisdiction and as specified herein.
- B. Codes and Regulations. This section sets forth governmental regulations and industry standards and are included and incorporated herein by reference and made a part of the specification. This section also sets forth those notices and permits which are known to the Owner and Environmental Consultant and which either must be applied for and received, or which must be given to governmental agencies before start of Work.
  1. General Applicability of Codes, Regulations and Standards. Except to the extent that more explicit or more stringent requirements are written directly into the Contract Documents, all applicable codes, regulations and standards have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies are bound herewith.
    - a. References: In addition to publications referenced in the Construction Contract Clauses, following CFR publications designate and define hazardous materials and conditions, and establish procedures for handling these materials and conditions. Omission of any publication in this section does not remove any obligation or legal requirement on the part of the contractor to comply with all legal requirements for the location of the work.
      1. 29 CFR, Part 1910: OSHA General Industry and Health Standards.
      2. 29 CFR, Part 1926: OSHA Construction Industry Standards.
      3. 40 CFR, Part 61: National Emission Standards for Hazardous Air Pollutants.
      4. 40 CFR, Part 261: EPA Characteristics of Hazardous Waste.
      5. 40 CFR, Part 761: EPA PCBs, Manufacturing, Processing, Distribution in Commerce and Use Prohibitions.
      6. 40 CFR, Part 763: EPA Asbestos.
      7. Federal Standards 313A: MSDS, Preparation and the Submission of.
      8. NIH DCAB publication "Standards for Temporary Construction," March 1988.

- b. Hazardous Materials: Some Hazardous and Toxic materials and substances are included in 29 CFR part 1910, subparts H and Z, and in 29 CFR Part 1926 and others additionally defined in Federal Standard 313A. Commonly encountered hazardous materials include but are not limited to asbestos, PCBs, explosives and radioactive material.
    1. Asbestos may be found in spray-on fireproofing, insulation, boiler lagging, pipe coverings and other materials.
    2. PCBs may be contained in ballasts, transformers, capacitors, voltage regulators, oil switches, mechanical insulation and other materials.
  - c. Acquisition of Publications: Referenced CFR publications may be purchased from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
2. Contractor Responsibility. The HMAC shall assume full responsibility and liability for the compliance with all applicable Federal, state and local regulations pertaining to work practices, hauling, disposal and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. HMAC is also responsible for notifying the proper authorities (fire departments, police departments, etc.) of the proposed work at least 10 days prior to commencing work under this Contract. The HMAC is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, state and local regulations. The HMAC shall hold the Owner, the Architect/Engineer (A/E) and A/E's sub-Environmental Consultants harmless for failure to comply with any applicable work, hauling, disposal, safety, health or other regulation on the part of himself, his employees or his HMACs.
  3. Federal Requirements which govern asbestos hazard abatement work include, but are not limited to, the following:
    - a. U.S. Department of Labor, OSHA including, but not limited to:
      - Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Final Rules; 29 CFR 1910.1001 and 29 CFR 1926.58
      - Respiratory Protection; 29 CFR 1910.134
      - Construction Industry; 29 CFR 1926
      - Access to Employee Exposure and Medical Records; 29 CFR 1910.2
      - Hazard Communication; 29 CFR 1910.1200
      - Specifications for Accident Prevention Signs and Tags; 29 CFR 1910.145
    - b. USEPA including, but not limited to:
      - National Emission Standard for Hazardous Air Pollutants; 40 CFR 61 Subpart A
      - National Emission Standard for Hazardous Air Pollutants: Amendments to Asbestos Standard; 40 CFR 61 Subpart M
      - National Requirements: Reportable Quantity Adjustments; 40 CFR 763.117 and 40 CFR 763 Subpart E
  4. State Requirements which govern asbestos abatement work include, but are not limited to, the following:
    - a. The State of Maryland.
  5. Compliance with Current Building Design Standards

- a. The HMAC shall ensure that a competent person remain outside of the work area during abatement activities. A minimum of one person meeting the qualifications for supervisor shall be present on site at all times during abatement work or activities and be able to communicate effectively with the workers and all governing authorities.
- b. Except in the case of emergency, anyone entering an asbestos abatement work area, which is an OSHA-defined “regulated area,” shall have received a minimum of 2-hour asbestos awareness training consistent with the EPA requirements.
- c. HMAC shall ensure that a 3-stage decontamination (clean room, shower, dirty room) chamber system is established directly adjacent to all full containments or when abatement more than 25 linear or more than 10 square feet of friable regulated asbestos containing material. Three-stage decontamination chamber shall be equipped with air lock chambers, working hot and cold water, and a 5 micron filter system.
- d. HMAC shall ensure that the OSHA required asbestos danger signage in the English language is posted at all entrances at the work area. Areas of abatement work must be clearly demarcated. In all structures, whether partly occupied or not during asbestos removal, maintain clearly identified routes of egress.
- e. HMAC shall ensure that GFCIs are directly connected to all electrical sources in use outside of the work areas.
- f. HMAC shall ensure that street clothes are not worn beneath protective clothing when abatement more than 25 linear feet or more than 10 square feet of friable regulated asbestos containing material. In the event that street clothes are worn beneath protective clothing, the HMAC shall render these clothes as asbestos containing and manage accordingly.
- g. HMAC shall ventilate all air-filtration devices (AFD) to exterior of the building. The preferred procedure is to direct the exhaust out a window. If this is not feasible due to project conditions, submit alternative procedure to the Owner for approval. Exhaust from AFDs shall not be directed into airspace above a dropped ceiling or into existing laboratory hood ventilation.
- h. HMAC shall collect daily OSHA personal PCM air samples and post analytical results on a daily basis. The laboratory the HMAC uses to analyze samples must participate in the AIHA PAT program for fiber counting and analyze air sample via the NIOSH 7400 method. In addition, the microscopist shall have completed the NIOSH 583 Equivalent course training. Records shall be maintained to show air quality levels prior to, during and after asbestos abatement work on projects. These records shall show sample results of environmental and personal air data results.
- i. HMAC shall ensure that all critical barriers are sealed with 6-mil polyethylene within the work area(s), all HVAC and electrical systems are de-energized within the work area, and all HVAC vents are sealed with two layers of 6-mil polyethylene.
- j. HMAC shall ensure that all full containments contain a minimum negative pressure of 0.02 inches of water column.
- k. HMAC shall ensure that all asbestos containing materials are adequately wetted with amended water during removal and disposal.
- l. HMAC shall ensure that all asbestos waste disposal bags are labeled with the OSHA asbestos danger and generator labels.

- m. HMAc Supervisor shall conduct a final visual inspection and ensure all visible suspect and confirmed asbestos debris has been successfully removed and disposed of properly upon completion of the project.
  - n. HMAc shall dispose of ACM waste in a Maryland approved landfill and obtain a copy of the signed disposal receipt as required by the EPA.
  - o. HMAc shall include the following as part of closeout documents: daily logs, sign-in sheets, contractor license, BWC certificate, liability insurance certificate, supervisor and work submittals (certificate, license, medical, fit test), materials safety and data sheets, waste manifests and signed landfill disposal receipts.
6. Compliance with Regulations and Current Building Design Standards
- a. The work, including contact with or handling of hazardous materials, disturbance or dismantling of surfaces containing hazardous materials, and disposal of hazardous materials, shall comply with the applicable requirements of: 29 CFR Parts 1910 and 1926; and 40 CFR Parts 61, 261, 761 and 763.
  - b. Work involving disturbance or dismantling of asbestos or asbestos containing materials, demolition of structures containing asbestos and removal of asbestos, shall comply with 40 CFR Part 61, Subparts A and M, and 40 CFR Part 763.
  - c. Work shall additionally comply with all applicable state and local safety and health regulations.
  - d. In case of a conflict between applicable regulations and Building Design Standards, the more stringent requirements shall apply.
  - e. Contractor Responsibility: The HMAc shall assume full responsibility and liability for compliance with all applicable codes, standards and regulations pertaining to the health and safety of personnel during execution of the Work, and shall hold the Owner harmless for any action on the Contractor's part, or that of the HMAc's employees or subcontractors, that result in illness injury or death.
    - 1. The Contractor shall have written safety and health programs in compliance with 29 CFR Parts 1910 and 1926.
    - 2. Inspections, Tests, and Reports: The required inspections, tests and reports made by the contractor, subcontractor, specially trained technicians, equipment manufacturer, and others as required, shall be at the HMAc's expense.
7. Requirements for the Hazardous Materials Abatement Contractor:
- a. The Contractor must have a minimum of one Asbestos Hazard Abatement Supervisor (AHAS) and workers that have completed the OSHA 8 hour Asbestos Roofing Specific Training specific to Class II Asbestos work activities involving the removal of ACM, which is not TSI or surfacing material. This would include: roofing materials, siding, shingles and mastics.
  - b. The HMAc must not have any Public Health Emergency Violations issued by the state of Maryland within the past two (2) years; as well as no previous unresolved or pending Public Health Emergencies.
  - c. In the event of an accident or injury associated with the project, the HMAc needs to provide a written accident/ injury report within 24 hours of the incident to the Owner, and the Architect/ Engineer.

- d. In the event that any state or federal officials visit the project, the HMAC and/or Architect/ Engineer needs to notify the Owner immediately upon their arrival.
- e. The HMAC must provide the following **mandatory documents** prior to the post-bid review meeting:
  1. References from previous projects:
    - a. Projects are to be of similar size and scope.
    - b. Three to five references specific to the Superintendent scheduled for this project.
    - c. Each reference to include contact information and phone number for the Owner, Architect, Construction Manager, and Subcontractors.
    - d. Provide documentation of the project location, duration, scope of work, and client contact information.
    - e. Verification of years experience in asbestos abatement projects and hazardous materials abatement projects.
  2. Current financial statement
  3. Resume of proposed staff for the project – Superintendent
  4. Current abatement projects. Include contract value and completion dates.
  5. Summary and background of any prevailing wage complaints and/or pending prevailing wage complaints over the past three years (if applicable).
  6. Summary and background of any EEO violations and/or pending EEO violations over the past five years (if applicable).
  7. Summary and background of any EPA violations over the past 7 years; as well as a statement as to how the violations were resolved (if applicable).
  8. Summary and background of any State of Maryland violations over the past 7 years; as well as a statement as to how the violations were resolved (if applicable).
  9. Summary and background of any OSHA violations over the past 7 years; as well as a statement as to how the violations were resolved (if applicable).
  10. A detailed estimate for the bid.
  11. Current Bureau of Worker's Compensation Certificate with Drug Free Workplace Endorsement.
  12. Copy of license to conduct asbestos abatement activities.

C. Certifications

1. The HMAC must be licensed by State of Maryland to perform asbestos abatement activities as is required.
2. The HMAC's Supervisor must be certified by the State of Maryland as an Asbestos Hazard Abatement Specialist.
3. Each of the HMAC's employees, including full-time employees, temporary employees and contract labor, must be certified by the State of Maryland as either an Asbestos Hazard Abatement Worker or as an Asbestos Hazard Abatement Specialist.

4. All of the HMAc's employees performing any work on scaffolds must have general OSHA Scaffold training.
5. All of the HMAc's employees handling potential mercury, PCB or other hazardous chemicals must be HAZWOPER certified.

#### 1.08 SUBMITTALS

- A. General. Submit the following in accordance with Conditions of Contract and Division 1 specification sections.
- B. Submittals.
  1. Worker Qualification Form. The HMAc shall submit completed Worker Qualification Forms to the Owner's Environmental Consultant for each employee who performs asbestos hazard abatement work on the project. This form must document that the employee has attended a Worker Protection Program. With this form, the HMAc shall also submit satisfactory evidence that he has complied with OSHA requirements for employee medical surveillance. No worker shall be permitted to work on this project unless a property documented Worker Qualification Form has been submitted for him.
  2. Asbestos Disposal Form. The HMAc shall complete and submit an Asbestos Disposal Form to the Owner's Environmental Consultant for each disposal of asbestos-containing or contaminated material.
  3. Laboratory Qualifications. The HMAc shall submit the qualifications of the laboratory to be used for the analysis of personnel monitoring. Submittals shall include documentation of successful participation in the AIHA sponsored PAT rounds
  4. Accident Reports: The Contractor must submit to the Owner a written report within three calendar days of any accident, fire, emergency, theft or incident in which any personal or property damage took place, regardless of any other notifications performed. Include a copy of each accident report that is submitted by the Contractor or Subcontractors to their insurance carriers, within seven calendar days after the date of the accident.
  5. The Hazardous Materials Abatement Contractor's application for payment will not be processed until all required submittals have been received by the Owner.
- C. Pre-Abatement Submittals. All documents are to be submitted and approved before the start of work at the site.
  1. Provide copies of notifications to the following:
    - a. Police and Fire Department
  2. Copy of license to conduct asbestos abatement activities.
  3. Copy of current liability insurance certificate.
  4. Copy of current Maryland Workers Compensation certificate.
  5. Name, certification and health records of supervisor.
  6. Name, certification and health records of workers.
  7. Detailed Asbestos Abatement Plan (AAP) which describes procedures to be used to comply with the requirements of these specifications. The AAP shall have detailed written operating procedures describing control and removal techniques to be used as required by the State of Maryland. The AAP must be reviewed by the Owner and approved by the Environmental Consultant prior to commencing the work.



8. Drawings which detail decontamination unit, waste container, water utility, traffic patterns, emergency exits, etc.
  9. Emergency contact list.
  10. Contractor's Site Specific Safety and Health Program: The HMAC shall submit a written copy of the Company Safety and Health Program as well as the site specific safety and health plan for the project to the Owner Representative within 14 calendar days of the Notice to proceed or before work commences on the project site, whichever is earlier. This plan shall include emergency evacuation procedures, respirator protection program, procedures to prevent unauthorized entry into regulated work areas, and measures for accident prevention. This shall also include a negative exposure assessment for Class I work if half-face respirators are to be utilized for such work.
  11. Safety Data Sheets (SDS): The contractor shall provide the SDS's for all products containing hazardous chemicals to the Owner Representative within 14 calendar days of the Notice to Proceed or before work commences on the site. The SDS's shall be maintained at the project site for workers, Owner personnel and government officials. SDS's for new products shall similarly be submitted to the Owner Representative and be retained at the project site until completion of the project.
  12. A copy of the written notification to any rental agencies stating the intended use of rental equipment for an asbestos abatement project, or a statement that no rental equipment will be used on this asbestos abatement project.
- D. Close-Out Documentation. The following documents are to be submitted to the Owner at the completion of the work on site.
1. Provide completed landfill receipts and any waste hauler manifests.
  2. Provide log of all air samples and results.
  3. Provide work area sign-in sheets.
  4. Provide daily project logs.
  5. Provide copies of all supervisor's and worker's required certification documents to perform asbestos abatement for any personnel not submitted in the pre-abatement submittal package.
  6. Provide copies of all EPA inspection reports (if applicable).
  7. Provide copies of all State of Maryland notification revisions (if applicable).
  8. Provide copies of accident reports (if applicable).
- 1.09 PRECONSTRUCTION SAFETY MEETING
- A. Prior to commencing construction, representatives of the Contractor, including the general superintendent and one or more safety representatives shall meet with the Owner Representative for the purpose of reviewing Contract safety and health requirements.
1. The Contractor's Safety and Health Program and Site Specific Safety and Health Plan shall be reviewed and implementation of safety and health provisions pertinent to the Work shall be discussed.
  2. The Contractor shall be prepared to discuss, in detail, the Contractor's Site Specific Safety and Health Plan including measures intended to control any unsafe or unhealthy conditions associated with the work to be performed under the contract.

3. This meeting may be held in conjunction with the pre-construction conference, if so directed by the Owner. The conduct of this meeting is not contingent upon a general pre-construction meeting.

The level of detail for the safety meeting is dependent upon the nature of the work and potential for inherent hazards.

#### 1.10 JOB CONDITIONS

- A. The HMAC shall notify the Owner at least one week before mobilizing or setting up to perform the work.

- B. Documents to be Posted and Maintained on Job Site.

1. To be posted on site:

- a. Copy of EPA notification(s)
- b. Proof of worker training
- c. Emergency contact list
- d. U.S. Department of Labor Job Safety & Health Protection Notice, per 29 CFR 1903.2(a)(1)
- e. Copy of contractor's license for abatement
- f. Equal opportunity notice
- g. Worker's Compensation Certificate
- h. Daily clean-up program
- i. Fire and Police notifications

2. To be maintained on site:

- a. All employee certifications and health records
- b. A copy of all pre-construction submittals
- c. Specifications, drawing and other contract documents
- d. Methods of abatement
- e. Daily Job Inspection Reports
- f. Personnel Air Sampling Results (24 hour per day posting)
- g. All pre and interim environmental air sampling results.
- h. Negative Exposure Assessment.
- i. Asbestos NESHAPs Survey Report

- C. Temporary Facilities

1. Materials and Equipment

- a. Scaffolding - Provide all scaffolding, ladders and/or staging, etc. as necessary to accomplish the Work of this Contract. Erection of scaffolding must conform with OSHA and industry safety standards for scaffold operation.
- b. Water Service - HMAC will provide decontamination facilities. HMAC shall provide hot and cold water for decontamination showers from Owner's water supply. All water hoses

must be suspended in a manner not to create a trip hazard.

- c. Electrical - Electrical service may be obtained at the building. Comply with all applicable NEMA, NECA and UL standards and regulations for materials and layout of temporary electrical service. HMAc shall provide hardwired ground fault circuit interrupters with a minimum 100 amp rating for each work area or floor of a work area. All electrical power used for this project shall be provided via these units.
- d. First Aid - Comply with governing regulations and recognized recommendations within the construction industry. HMAc shall be responsible for providing first aid supplies for employees.
- e. Fire Extinguishers - Provide Type "A" fire extinguishers for temporary offices and similar spaces where there is minimal danger of electrical or grease-oil-flammable liquid fires. In other locations, provide type "ABC" dry chemical extinguishers. One fire extinguisher, sealed in polyethylene, of the "ABC" type shall be placed within the work area for each 2,000 square feet of floor space in a location which would be easily accessible during an emergency.
- f. Decontamination Facilities - HMAc is to provide these facilities as required and approved.
- g. Heat - HMAc shall maintain a temperature in the work area of not less than 50°F and a temperature of not less than 70°F in non-work areas in the building.
- h. Documents - HMAc will maintain and post all required documents on site.
- i. Supply Storage - HMAc will be permitted to store supplies inside of the facility at a location to be determined prior to the project.
- j. Storage of asbestos-containing waste, properly labeled and bagged waste must be stored in a lockable and secure storage container out of the work area.

D. Damage. Promptly repair damage caused to adjacent facilities by demolition work.

#### 1.10 DELIVERY, STORAGE AND HANDLING

##### A. Material Deliveries

- 1. Whenever practicable, deliveries shall be made during regular working hours and only when the Contractor's representative is available to receive them. Deliver material in approved containers and with properly licensed vehicles and operators. Open delivery vehicles not permitted. Deliver materials in fully closed vehicles or tarp-covered vehicles. All dump trucks shall be fully covered while in transport to and from the unloading site. All loads shall be securely fastened until unloading. Engines shall not be left running while vehicles are loading, unloading, waiting or parked. Do not block roads, walks, building entrances/exits, fire hydrants and standpipes, exterior tanks or building gas connections.

1.11 SPECIAL WARRANTY Not used.

## PART 2 – PRODUCTS

### 2.01 PRODUCTS

- A. Safety and Health Programs: The Contractor shall submit copies of the written site specific project safety and health plan and emergency action procedures, as applicable to the work scope, as required as a result of the safety meeting, or as required by OSHA 29 CFR, Part 1926, including but not necessary limited to the procedures and programs that support the requirements of the

following:

1. Designation of Safety Competent Person
  2. Occupational Noise Exposure
  3. Fall Protection
  4. Personnel Protective Equipment
  5. Control of Hazardous Energy
  6. Hazardous Materials Waste Management Plan (draft if final plan has not been accepted)
  7. Electrical Safety Related Work Practices
  8. Lead
  9. Asbestos
  10. Respirator Protection
  11. Confined Spaces
  12. Emergency Evacuation and Reporting
  13. Hot Work
- B. Contractor's Safety and Health Plan: In Addition to specific safety and health programs applicable to this project, HMAc shall submit to the Owner a copy of the firms' general Safety and Health Plan listing emergency Procedures and contact persons with home addresses and telephone numbers.
- C. Permits: If Hazardous materials are disposed of off-site, submit copies of shipping manifests and permits from applicable federal, state or local authorities and disposal facilities, and submit certificates that the material has been disposed of in accordance with regulations.

### PART 3 – EXECUTION

#### 3.01 WORK PRACTICES

- A. Use of Power Actuated Fastener Tools.
1. Use of explosives shall be prohibited.
  2. Power actuated fastener tools are often used on construction sites due to the unique manner in which objects can be accurately and positively secured to a substrate. Also, these tools tend to allow for work to proceed more rapidly and efficiently with desirable results. However, these tools also present potential problems to the work area relative to damaged base material and fasteners. Also, the fastener tools present health and safety hazards to untrained users of fastener equipment, unprotected workers in the immediate work area, as well as building occupants that might be present. Based upon these circumstances, there is a need for safe work practice requirements to be followed whenever such equipment is used. It should be noted that fasteners can be powered or driven primarily by powder charges, gas, or pneumatic means.
  3. Power actuated fastener tools (e.g. nail guns, etc.) including pneumatic, powder actuated and gas actuated tools shall be used by individuals for whom the contractor has documentation

of appropriate training and the contractor has written standard operating procedures and safety plan for the use of this equipment in the particular application requested.

4. The contractor will be fully responsible to make every effort to appropriately protect the safety of people and equipment when utilizing this tool. These include, but are not limited to, the following:
  - a. The contractor shall inspect the substrate and the fastening material to determine if this proposed fastening method is appropriate. This determination should include a description of the type of material to be fastened and the method of fastening. The base material should be inspected to determine whether it is too hard, soft, or brittle that it may cause spalling, cause the fastener to shatter or not hold, or cause the fastener to free flight.
  - b. The contractor shall develop written instructions or procedures on the use of the fastener tool. The standard operating procedures should include the type of surfaces (e.g. metal studs to floor, hangers to the deck, etc.) to be fastened to minimize damage to the building and injury to the user, other employees, and the public and safety precautions.  
NOTE: Concrete or other surfaces that are damaged shall not be fastened. When fastening into concrete, never fasten closer than two inches from the edge since this may reduce fastener strength or damage to this material.
  - c. Trained, competent, and credentialed individuals shall be the only persons allowed to utilize such fastener tools.
  - d. A "Competent Person" shall be present to ensure that the fastener tool is being used properly and workers not involved with the fastener task are clear of the immediate work area. This would include non-construction workers or building occupants above and below where the fastener tool is being used.
  - e. Fastener tool operators shall report immediately any problems associated with the device or fastener work to the "Competent Person" or immediate supervisor and not proceed until the problem has been resolved and authorization given to proceed.
  - f. The fastener tool shall be operated at the lowest power or charge setting, as well as using the shortest fasteners to ensure a sufficient fastening, as well as to minimize personal injury and/or property damage.
  - g. The fastener equipment shall be inspected for proper operation before use to ensure the proper discharge and a solid fastener attachment.
  - h. The fastener equipment shall be unloaded before inspecting, servicing, cleaning or storing.
  - i. The fastener equipment and charging equipment shall be stored in a tamper resistant container that can be locked when not in use.
  - j. The fastener equipment shall be used in accordance with the owner's manual and manufacturer's directions.

- k. The appropriate personal protective equipment (i.e., safety glasses, hard hats, hearing protection, etc.) shall be worn by the operator of the fastener equipment.
- B. Work Underground or in Confined Spaces
1. Work shall comply with appropriate MSHA (Mine Safety and Health Administration) and OSHA regulations; including but not limited to, 29 CFR 1910.146.
  2. All confined space entrants, supervisors and attendants must receive training in areas relating to safe confined space entry prior to entering a confined space.
  3. The Contractor shall remove water and debris and properly vent manholes/ confined spaces before commencement and during execution of work in manholes/ confined spaces.
  4. The Contractor shall have a competent person on site during the project as per the OSHA construction standard.
- C. Electrical
1. Electrical arc welding equipment shall not be connected to the building power supply.
- D. Hazardous Materials
1. The contractor shall bring to the attention of the Architect/Engineer and the Environmental Consultant any material encountered during execution of the Work that the contractor suspects is hazardous. The Environmental Consultant shall have the HAMC-perform test to determine if the material is hazardous.
  2. If the tested material is found to be hazardous, and/or if additional protective measures are required, a change to the Contract price may be provided subject to the applicable provisions of the Contract.
- E. Additional Safety Requirements
1. No work shall be performed in any area occupied by the public or Owner employees unless approved by the Owner.
    - a. Accident Treatment and Records: The HMAC shall post emergency first aid information.
    - b. No person, regardless of position or authority, shall operate any switch, valve, or equipment that has an official lockout/tag out tag attached to it, nor shall such tag be removed except as provided in this section.
    - c. When work is to be performed on electrical circuits, the work shall be performed only by qualified personnel following the required safety procedures.
    - d. Identification markings on building light and power distribution circuit breakers shall not be relied on for establishing safe work conditions.
    - e. Before clearance will be given on any equipment other than electrical (generally referred to as mechanical apparatus), the apparatus, valves, or systems shall be secured in a passive condition with the appropriate vents, pins, and locks.
    - f. Pressurized or vacuum systems shall be vented to relieve differential pressure completely.
    - g. Vent valves shall be lockout/tag out tagged open during the course of the work.
    - h. Where dangerous gas or fluid systems are involved, or in areas where the environment may be oxygen deficient, systems or areas shall be purged, ventilated, or otherwise made safe prior to entry.

F. Personnel Protective Equipment

1. Special facilities, devices, equipment and similar items used by the contractor in execution of the work shall comply with 29 CFR, Part 1910, Subpart 1 and other applicable regulations.

G. Respirator Protection

1. At a minimum, a half-face respirator shall be used for the following activities:
  - a. Construction of containments.
  - b. Pre-cleaning and removal of non-friable asbestos.
  - c. Bagging of asbestos waste.
  - d. Deconstruction of containments.

H. Use of Water

1. HMAC shall provide hot and cold water for showers from a fixed head adjustable at the shower. Also, ample soap, shampoo, disinfectant and towels for use by employees as needed must be available.
2. The clean room, airlock and shower shall be disinfected daily and no accumulations of used towels, suits, street clothes and supplies shall be allowed in any decontamination unit.
3. No water shall be allowed to accumulate within the shower. All shower water must be promptly filtered through a filtration unit capable of removing particles 3.0 microns or larger. HMAC must document filter pore size and Owner's Environmental Consultant reserves the right to acquire effluent samples for analysis. In the event that analysis indicates contamination of effluent (any asbestos particles observed longer than 5.0 microns by TEM) the HMAC shall bear the costs of all testing and shall immediately correct any problems and document that the corrections have been effective.
4. In the event that a leak occurs which releases water from the work area into any clean area all work shall immediately stop until the leak is repaired and all liquid cleaned up. Cleaning shall include mopping, wet-wiping, and HEPA vacuuming as necessary to ensure collection of all asbestos fibers.
5. All water hoses must be suspended and secured in a manner not to create a trip hazard.

I. Work Area Isolation

1. The Contractor shall post warning signs far enough away from the work area to permit an employee to read the sign and take the necessary protective measures to avoid exposure.
2. The Contractor shall seal, shut down and lock out all heating, cooling and air conditioning system (HVAC) components that are in, or whose make-up is drawn from, the work area.
3. The Contractor shall seal all critical barriers with 1 layer of 6-mil (full weight) polyethylene. This will include all non-asbestos thermal, windows, HVAC penetrations (grill, etc.), skylights, etc. Security devices shall be left exposed and functioning unless they are to be removed and replaced. Secured drop cloth shall be used to protect adjacent areas.

J. Removal of ACM

1. The floor of the work area shall be kept free of unnecessary equipment supplies and debris. All contaminated materials shall be promptly bagged and removed from the work area according to established removal methods. The HMAC shall not allow asbestos-containing

materials to dry out or collect on floors or other surfaces. Bagged ACM shall not accumulate within the work area. No contaminated materials are to be stored outside of the building except in a sealed, secure, temporary storage trailer.

2. The HMAc shall use amended water during all asbestos removal operations. All ACM must be thoroughly wetted prior to and during removal and shall be wetted during bagging operations.
3. The use of the technique of dry brushing, dry sweeping or dry cleaning of asbestos, asbestos-contaminated material or ACM residue is strictly prohibited.
4. The Contractor shall apply an encapsulant to exposed edges of remaining roofing surfaces, which may have been contaminated with asbestos-containing roofing debris.

K. Disposal of ACM

1. All ACM must be disposed of in approved containers.
2. Proper decontamination procedures for removing ACM wastes from the work area are required.
3. All ACM wastes are to be removed from the structure and properly disposed of in a timely fashion.
4. All ACM bagged wastes shall be labeled, counted by HMAc, and entered into daily logs.
5. Proper documentation of all ACM wastes generated as a result of this project must be delivered to the Owner's Representative in a timely fashion.
6. Category I asbestos containing waste may be disposed of at an approved landfill that will accept such waste.

L. Cleaning of Work Area

1. Disposable cloths are to be final cleaning procedures. Cloths are to be used only once and disposed of. Rinse water shall be changed frequently.
2. All liquids sprayed within the work area shall be delivered through an airless sprayer. Spraying with garden hoses and pressurized sprayers is prohibited.

**3.02 EMERGENCY SUSPENSION OF WORK**

- A. When the HMAc is notified by the Architect/Engineer or the Owner Representative, of non-compliance with the safety or health provisions of the Contract, the Contractor shall immediately, unless otherwise instructed, correct the unsafe or unhealthy condition.
1. If the HMAc fails to comply promptly, all or part of the work will be stopped by notice from the Architect/Engineer.
  2. When, in the opinion of and by notice given by the associate and or the Owner Representative, satisfactory corrective action has been taken by the HMAc, work shall resume.
  3. The HMAc shall not be allowed any extension of time or compensation for damages in connection with a work stoppage for an unsafe or unhealthy condition

**3.03 PROTECTION OF PERSONNEL**

- A. The HMAc shall take all necessary precautions to prevent injury to the public, occupants, or damage to property of others. The public and occupants includes all persons not employed by the contractor or subcontractor.



- B. Wherever practical, the work area shall be fenced, barricaded or otherwise blocked off from the public or occupants to prevent unauthorized entry into the work area.
  - 1. Provide traffic barricades and traffic control signage where construction activities occur in vehicular areas.
  - 2. Corridors, aisles, stairways, doors and exit ways shall not be obstructed or used in a manner to encroach upon routes of ingress or egress utilized by the public or occupants, or to present an unsafe or unhealthy condition to the public or occupants.
  - 3. Store, position and use equipment, tools materials, scraps and trash in a manner that does not present a hazard to the public or occupants by accidental shifting, ignition or other hazardous activity.
  - 4. Store and transport refuse and debris in a manner to prevent unsafe and unhealthy conditions for the public and occupants. Cover refuse containers, and remove refuse on a frequent regular basis acceptable to the Owner Representative. Use Tarpaulins or other means to prevent loose transported materials from dropping from trucks.
- C. Alternate Precautions: When the nature of the work prevents isolation of the work area and the public or building occupants may be in pass through, under or over the work area, alternate precautions such as the posting of signs, the use of signal persons, the erection of barricades or similar protection around particularly hazardous operations shall be used as appropriate.
- D. Public Thoroughfare: When work is to be performed over a public thoroughfare such as a sidewalk, roadway or other site access way, the thoroughfare shall be closed, if possible, or other precautions taken such as the installation of screens or barricades. When the exposure to heavy falling objects exists, as during the erection of building walls or during demolition, special protection of the type detailed in 29CFR, Parts 1910 and 1926 shall be provided.

### 3.04 MONITORING

- A. Air Monitoring Required by OSHA Regulations
  - 1. The HMAC must perform air monitoring in the work area to comply with OSHA regulations for his employees. Results shall be posted no later than 24 hours after sample collection.
  - 2. If at any time during the project, the PCM personal air sample results exceed the OSHA PEL of 0.1 fibers per cubic centimeter, then the HMAC shall cease all abatement activities. The HMAC shall then review work procedures and evaluate alternative abatement methods which could reduce fiber concentration and implement additional engineering controls prior to continuing asbestos abatement.
  - 3. The HMAC shall keep a log of all monitoring activities he performs. A complete log of all air samples and results will be submitted at the completion of the Project. It is the HMAC's responsibility to furnish and maintain all air monitoring equipment. The HMAC shall bear all costs in connection with air sampling and reporting under this section.
  - 4. The Owner's Environmental Consultant may procure personal air samples of HMAC's employees to measure worker exposure levels. HMAC will cooperate with such monitoring activities.
- E. Personnel and Facility Protection
  - 1. Protection Instruction. The HMAC shall provide decontamination and work procedures to be followed by the workers.
  - 2. Protective Clothing. The HMAC shall comply with OSHA regulations for protective clothing. The HMAC shall at all times have sufficient supplies of protective clothing and

supplies needed for the proper entrance/exit from the work area.

3. Hygiene Facilities and Practices. The HMAC shall comply with OSHA regulations concerning hygiene facilities and practices. Daily inspection and disinfecting of decontamination facilities shall be provided by the HMAC.
4. Emergency Precautions. Prepare a contingency plan for emergencies including fire, accident, power failure, negative pressure system failure, supplied air system failure, or any other event that may require modification or abridgment of decontamination or work area isolation procedures. Include a plan of specific procedures for decontamination or work area isolation. Note that nothing in this plan should impede safe exiting or providing of adequate medical attention in the event of an emergency.
5. Facility Security. The HMAC shall comply with OSHA and EPA regulations concerning signage and labeling. All entrances to the work areas shall be clearly labeled to prevent accidental entrance to a regulated area. Labeling shall include signs, stickers and flagging as appropriate to prevent unauthorized entry to the work site.

F. Disposal

1. Disposal containers shall be suitable to receive and retain any asbestos-containing or contaminated materials until disposal at an approved site. The containers shall be labeled in accordance with OSHA, EPA and DOT regulations. Containers must be airtight and watertight. Shipping manifests should be submitted to Owner as well as disposal documentation.

G. Execution. The sequence of execution for each work area shall be as follows:

1. Prepare work area.
2. Remove asbestos-containing materials.
3. Remove and dispose of the contaminated waste generated by work area preparation and removal activities.
4. Decontaminate work area and clean site.

3.05 ASBESTOS ABATEMENT PROCEDURES

A. The general sequence for performing asbestos abatement activities will be as follows:

1. Work area isolation
2. General Abatement Sequence and Removal Procedures
3. Disposal of ACM
4. Cleaning of work area (decontamination)
5. Work area clearance

B. The following paragraphs describe the sequence of activities; however, practices may not be limited to those herein described.

C. Work Area Isolation

1. The Contractor shall post warning signs far enough away from the work area to permit an employee to read the sign and take the necessary protective measures to avoid exposure.
2. The Contractor shall seal, shut down and lock out all heating, cooling and air conditioning system (HVAC) components that are in, or whose make-up is drawn from, the work area.

3. The Contractor shall seal all critical barriers with 1 layer of 6-mil (full weight) polyethylene. This will include all non-asbestos thermal, windows, HVAC penetrations (grill, etc.), skylights, etc. Security devices shall be left exposed and functioning unless they are to be removed

D. Removal of Asbestos-Containing Materials

1. Remove all equipment and fixtures from area to be abated necessary to accomplish the asbestos removal specified. All items removed are to be stored in a location designated by the Owner.
2. Pre-clean roof to be free and clear of all debris prior to roof flashing removal.
3. Spray surfactant on all surfaces within the work area. Allow surfactant to penetrate depth of material to be removed.
4. Removal of ACM - Roofing Materials
  - a. Thoroughly wet prior to and during removal operations. No dry brushing, sweeping or cleaning of asbestos or asbestos-contaminated materials shall occur.
  - b. Apply an encapsulant to exposed edges of remaining roofing surfaces, which may have been contaminated with asbestos-containing roofing debris.
  - c. Contractor shall not allow asbestos-containing materials to dry out or collect on roof or other surfaces.
  - d. All asbestos containing roofing materials must be promptly bagged and safely carried or lowered to the ground. Contractor will not be permitted to drop or throw asbestos containing roofing materials to the ground. Prevent any roof flashing debris from falling to ground below roof.
  - e. All cutting of asbestos containing roof flashings must be conducted with hand tools/ hand methods. No saw cutting of asbestos containing flashings will be permitted.

E. Disposal of ACM

1. All ACM generated from this project shall be properly documented. Detailed disposal documents including information concerning amounts of material, generator information, hauler information, date of generation, and disposal documentation must be processed for all material disposed of as contaminated wastes.
2. All bagged contaminated materials must be sufficiently wetted, sealed in airtight containers, and at a minimum must be sealed within two 6-mil polyethylene bags (one sealed inside the other). No rips or tears shall be visible in the bags, no material may be protruding through the polyethylene, and no visible residue may be visible outside of a container. HMAAC shall wash all inner, as well as outer, bags of asbestos-containing material.
3. All asbestos disposal containers must be labeled with the current hazardous warning labels and DOT information. The HMAAC shall label the inner and outer asbestos bag or container.
4. All contaminated materials must be moved from the work area through the waste decontamination unit. There all bags will be washed and placed into clean bags before being moved from the building.
5. All ACM wastes must be transported in a fully enclosed vehicle and or dumpster. If vehicle,

the driver compartment must be separated from the cargo compartment. The cargo compartment and or dumpster must be lined with 6-mil polyethylene, which is to be removed at the dump and disposed of as contaminated.

6. The cargo compartment of the disposal vehicle must be cleaned between loads. Cleaning shall include washing, wet-wiping and HEPA vacuuming.

F. Cleaning of the Work Area

1. All HEPA filtration devices shall continue to operate during cleaning of the work area. All vacuums inside work area shall utilize HEPA filtration.
2. Cleaning shall be initiated only after all of the gross ACM has been removed from the work area.
3. All unnecessary equipment, tools, devices and supplies shall be properly cleaned and removed from the work area via the equipment decontamination unit.
4. Cleaning shall start by wetting all surfaces within the work area with clean water. Surfaces shall be wetted from top to bottom.
5. Removal of ACM residue shall be accomplished with the use of wire or nylon-bristle brushes, nylon scouring pads, towels, sponges and HEPA-equipped vacuums. The use of the technique of dry brushing ACM residue is strictly prohibited.
6. After all residue of ACM has been removed, the surfaces are to be cleaned with clear water and wiped with a clean disposable towel. Each towel is to be used only once and then disposed of. Rinse water is to be changed frequently.
7. Perform inspection and clearance of work area.
8. HMAAC shall reinstall all fixtures removed during the abatement process.

G. Final Clearance/Cleaning Procedures. The following clean-up sequence shall be utilized for this asbestos removal project. It consists of visual inspection per area. The sequence is as follows:

1. Gross Removal Inspection - A visual inspection of all surfaces previously containing ACM. All surfaces must be cleaned thoroughly so no visible debris, film, or residues remain.
2. Upon favorable clearance results, the HMAAC shall encapsulate and remove all remaining polyethylene barriers, equipment, and any supplies or materials from the work area.

3.06 FINAL CLEARANCE INSPECTION

- A. Inspection Procedures. Upon receipt of HMAAC's request for inspection, the certified and credentialed Environmental Consultant shall proceed with the visual inspection and will advise the HMAAC of unfulfilled prerequisites relative to the completion of this project.

3.07 DISPOSAL OF MATERIALS

- A. General. Remove from building site debris, rubbish and other materials resulting from asbestos removal operations. Transport and legally dispose off site.
1. Burning of removed materials is not permitted on project site.

3.08 CLEAN-UP AND REPAIR

- A. General. Upon completion of asbestos removal work, remove tools, equipment and demolished materials from site. Remove protections and leave interior areas broom clean.
1. Repair areas damaged by asbestos removal procedure. Return elements of construction and surfaces to condition existing prior to start of operations. Repair adjacent construction or

surfaces soiled or damaged by asbestos removal work.

3.09 ENVIRONMENTAL PROTECTION

- A. Dispose of solid, liquid and gaseous contaminants in accordance with local codes, laws, ordinances and regulations.
- B. Comply with applicable federal, state and local noise control laws, ordinances and regulations, including but not limited to 29 CFR, Part 1910.95 and 29 CFR, Part 1926.52

END OF SECTION 028220

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## SECTION 02 82 21 – ROOFING ABATEMENT

### PART 1 – GENERAL

#### 1.01 RELATED DOCUMENTS

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

#### 1.02 SUMMARY

- A. This Section includes the following:
  - 1. Removal and disposal of hazardous materials and related work.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
  - 1. Document 003126 “Existing Hazardous Materials Information.”
  - 2. Section 011000 "Summary of Work" for use of the premises and phasing requirements.
  - 3. Section 013523 “Safety, Health, and Environment.”
  - 4. Section 015000 "Temporary Facilities and Controls" for temporary utilities, temporary construction and support facilities, temporary security and protection facilities, and environmental protection measures for selective demolition operations.
- C. Related Work Specified Elsewhere:
  - 1. Section 024119 “Selective Demolition.”
  - 2. Section 028220 "Hazardous Material Abatement."
  - 3. Section 070150.19 “Preparation For Reroofing.”

#### 1.03 GENERAL REQUIREMENTS

- A. The project consists of removal and disposal of asbestos-containing roof flashing associated with the Lower Park Heights Community Center Roof Replacement, located at 3939 Reisterstown Road, Baltimore MD 21215.
- B. The Environmental Consultant for the project is Aria Environmental, Inc. The Environmental Consultant’s main office is located at 5292B Enterprise Street, Sykesville, MD 21784. All communication, except Abatement Notifications shall go through the Architect. The contractor shall submit all notifications to the Environmental Consultant.
- C. The Hazardous Materials Abatement Contractor must electronically notify the Owner at least five (5) business days prior to commencement of abatement. Failure to notify the Owner result in stoppage of work and project delays. Reference Quality Assurance article of this section for additional Hazardous Materials Abatement Contractor requirements and qualifications.
  - 1. Hazardous Materials Abatement Contractor must also notify the Owner immediately upon arrival of any regulatory enforcement officer, including, but not limited to the State of Maryland, EPA, or OSHA personnel. Copies of inspection reports must be immediately submitted to the Environmental Consultant.

- D. The roofing abatement work may be performed by a properly trained roofing contractor. Refer to Quality Assurance article of this section for certification requirements.

1.04 GLOSSARY OF TERMS

AHERA	Asbestos Hazard Emergency Response Act
AIHA	American Industrial Hygiene Association
ACM	Asbestos Containing Material
CAHES	Certified Asbestos Hazard Evaluation Specialist
CFR	Code of Federal Regulations
COMPETENT PERSON	Person Designated by the Hazardous Material Abatement Contractor as the Responsible Person
DOT	Department of Transportation
EPA	Environmental Protection Agency
F/CC	Fibers per Cubic Centimeter
GFCI	Ground Fault Circuit Interrupters
HEPA	High Efficiency Particulate Air
HMAC	Hazardous Materials Abatement Contractor
HVAC	Heating, Ventilating, and Air Conditioning
LBP	Lead Based Paint
MAG	Magnesia
MSDS	Material Safety Data Sheet
MSHA	Mine Safety and Health Administration
NECA	National Electrical Contractors Association
NEMA	National Electrical Manufacturers Association
NESHAPs	National Emission Standard for Hazardous Air Pollutants
NIH	National Institutes of Health
NIOSH	National Institute for Occupational Safety and Health
NVLAP	National Voluntary Laboratory Accreditation Program
OD	Outer Diameter of Pipe Insulation
OSHA	Occupational Safety and Health Administration
ORM	OSHA Reference Method
PAPR	Powered Air Purifying Respirator
PAT	Proficiency Analytical Testing
PEL	Permissible Exposure Limit
PCB	Polychlorinated Biphenyls
PCM	Phase Contrast Microscopy
RACM	Regulated Asbestos Containing Material
SF	Square Foot(Feet)
TEM	Transmission Electron Microscopy
TSI	Thermal System Insulation
UL	Underwriters Laboratories
USEPA	United States Environmental Protection Agency

1.05 DESCRIPTION OF THE WORK

- A. General. Drawings and general provisions of the Contract, including General and Special Conditions and other Division 01 Specification Sections, apply to this Section. The following attachments are included as part of this section:



1. Asbestos Inspection Report – Testing for Draft Hazardous Materials Survey for Lower Park Heights Community Center Roof Replacement, dated July 26, 2022, prepared by Aria Environmental, Inc. is provided in Section 00 31 26. Contractor should not use this report for bidding purposes. A copy of each report must be maintained on-site by the contractor at all times.
- B. Removal and Disposal. The Hazardous Materials Abatement Contractor (HMAC) shall remove and dispose of the listed non-friable ACM associated with the project. The following tables summarize the various asbestos-containing materials and total estimated quantities for each material required for abatement by the HMAC. The HMAC must verify materials and quantities prior to bid and submit any exceptions in writing prior to submission of bid.

1. **Table 1 –Scope of Work for Hazardous Materials Abatement**

ACM	Estimated Quantities (1)	Location
Black Tar (asbestos)	150 linear feet	lobby roof overhang
Drainage Pad (asbestos)	50 square feet	roof

Table Specific Notes:

- (1) Remove and dispose of all asbestos-containing roof flashing materials down to clean substrate. Refer to HMAC report for locations.

C. GENERAL NOTES

1. ALL QUANTITIES AND LOCATIONS ARE ESTIMATES. ABATEMENT CONTRACTOR IS RESPONSIBLE FOR VERIFYING QUANTITIES AND EXACT LOCATIONS IN PREPARING BIDS AND EXECUTING WORK.
2. SPECIFIC INFORMATION REGARDING METHOD OF INSTALLATION AND COMPONENTS OF CEILINGS, WALL, PLATFORMS, FLOOR SYSTEMS, ETC. ARE NOT PROVIDED WITHIN CONTRACT DOCUMENTS. BIDDERS WILL BE AFFORDED ACCESS TO THE SITE TO REVIEW EXISTING CONDITIONS AT THE PRE-BID MEETING. BIDDERS SHALL FILL ALL HOLES, CLEAN UP, AND RESTORE SITE TO ITS FORMER CONDITION UPON COMPLETION OF ANY EXPLORATIONS PERFORMED. ADDITIONAL SITE VISITS, IF REQUIRED, SHALL BE SCHEDULED THROUGH THE CONTRACT ADMINISTRATION OFFICE AND WILL BE OPEN TO ALL BIDDERS.
3. THE CONTRACTOR SHALL DECONTAMINATE ALL BUILDING MATERIALS, WHICH BECOME CONTAMINATED OR ARE DISTURBED FROM ASBESTOS REMOVAL.
4. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ANY AND ALL SAFETY AND FALL PROTECTION REQUIRED FOR THE PERFORMANCE OF THIS WORK.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND LEGAL DISPOSAL OF ALL ASBESTOS-CONTAINING FLASHING FELTS DOWN TO THE ROOF DECK. PERLITE BOARD OR OTHER INSULATING MATERIALS FROM WHICH ASBESTOS-CONTAINING FLASHING FELTS CANNOT BE COMPLETELY REMOVED SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF AS ASBESTOS-CONTAINING WASTE AT A PRE-APPROVED LANDFILL.
6. ABATEMENT CONTRACTOR SHALL OBTAIN APPROVAL OF ACCEPTANCE OF CATEGORY I ASBESTOS CONTAINING WASTE AS GENERAL CONSTRUCTION AND DEBRIS WASTE PRIOR TO BID.
7. THE OWNER AND ARCHITECT/ENGINEER (A/E) HAVE THE RIGHT TO CONTROL LOCATION OF ALL ABATEMENT CONTRACTOR'S SUPPLIES AND STORAGE.
8. ABATEMENT CONTRACTOR SHALL COORDINATE SHUT DOWN OF HVAC AND ELECTRICAL SYSTEMS AS REQUIRED TO COMPLETE SPECIFIED ABATEMENT WORK WITH THE OWNER, A/E, AND GENERAL CONTRACTOR.
9. ABATEMENT CONTRACTOR SHALL COORDINATE ON SITE WORK, INCLUDING SPECIFIC WORK AREA LOCATIONS AND SCHEDULING, WITH THE OWNER, A/E, GENERAL AND SUB-CONTRACTORS TO FACILITATE THE PROMPT COMPLETION OF ALL ASPECTS OF THE ABATEMENT PROJECT.
10. THE OWNER IS RESPONSIBLE FOR MOVING THE OWNER'S EQUIPMENT AND OR MATERIALS FROM WORK AREAS. ANY EQUIPMENT AND OR MATERIALS LEFT IN THE WORK AREAS BY THE OWNER SHALL BE MOVED AND/OR PROTECTED BY ABATEMENT CONTRACTOR AS NECESSARY TO COMPLETE ABATEMENT WORK.
11. ABATEMENT CONTRACTOR MUST CONFORM TO REQUIREMENTS IN THE FRONT END DOCUMENTS IN REGARDS TO PARKING REQUIREMENTS AND PRIOR TO INTERRUPTING ANY ROADWAYS AND/OR PARKING LOTS AFFECTED BY THE SCOPE OF WORK.
12. ABATEMENT CONTRACTOR IS TO ADHERE TO THE OSHA STANDARD 29 CFR 1926.62 LEAD EXPOSURE IN CONSTRUCTION WHEN PERFORMING SELECTIVE DEMOLITION WORK PRACTICES, IMPACTING, OR DISTURBING ANY BUILDING MATERIALS.
13. SPECIAL CARE SHOULD BE TAKEN WHEN WORKING NEAR ELECTRIC, WATER, STEAM, AND GAS SUPPLY LINES.
14. ABATEMENT CONTRACTOR IS RESPONSIBLE FOR FOLLOWING AND ADHERING TO ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS INCLUDING, BUT NOT LIMITED TO, THOSE SET FORTH BY THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (USEPA), OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), AND THE STATE OF MARYLAND.
15. ABATEMENT CONTRACTOR SHALL DECONTAMINATE ALL BUILDING

MATERIALS, WHICH BECOME CONTAMINATED OR ARE DISTURBED FROM  
ASBESTOS AND OTHER HAZARDOUS MATERIAL REMOVAL.

1.06 QUALITY ASSURANCE

- A. General. Perform all asbestos removal work in compliance with applicable requirements of governing agencies having jurisdiction and as specified herein.
- B. Codes and Regulations. This section sets forth governmental regulations and industry standards and are included and incorporated herein by reference and made a part of the specification. This section also sets forth those notices and permits which are known to the Owner and Environmental Consultant and which either must be applied for and received, or which must be given to governmental agencies before start of Work.

- 1. General Applicability of Codes, Regulations and Standards. Except to the extent that more explicit or more stringent requirements are written directly into the Contract Documents, all applicable codes, regulations and standards have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies are bound herewith.

- a. References: In addition to publications referenced in the Construction Contract Clauses, following CFR publications designate and define hazardous materials and conditions, and establish procedures for handling these materials and conditions. Omission of any publication in this section does not remove any obligation or legal requirement on the part of the contractor to comply with all legal requirements for the location of the work.

- 1. 29 CFR, Part 1910: OSHA General Industry and Health Standards.

- 2. 29 CFR, Part 1926: OSHA Construction Industry Standards.

- 3. 40 CFR, Part 61: National Emission Standards for Hazardous Air Pollutants.

- 4. 40 CFR, Part 261: EPA Characteristics of Hazardous Waste.

- 5. 40 CFR, Part 761: EPA PCBs, Manufacturing, Processing, Distribution in Commerce and Use Prohibitions.

- 6. 40 CFR, Part 763: EPA Asbestos.

- 7. Federal Standards 313A: MSDS, Preparation and the Submission of.

- 8. NIH DCAB publication "Standards for Temporary Construction," March 1988.

9.

- b. Hazardous Materials: Some Hazardous and Toxic materials and substances are included in 29 CFR part 1910, subparts H and Z, and in 29 CFR Part 1926 and others additionally defined in Federal Standard 313A. Commonly encountered hazardous materials include but are not limited to asbestos, PCBs, explosives and radioactive material.

- 1. Asbestos may be found in spray-on fireproofing, insulation, boiler lagging, pipe coverings and other materials.

- 2. PCBs may be contained in ballasts, transformers, capacitors, voltage regulators, oil switches, mechanical insulation and other materials.

- c. Acquisition of Publications: Referenced CFR publications may be purchased from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C.

20402.

2. Contractor Responsibility. The HMAC shall assume full responsibility and liability for the compliance with all applicable Federal, state and local regulations pertaining to work practices, hauling, disposal and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. HMAC is also responsible for notifying the proper authorities (fire departments, police departments, etc.) of the proposed work at least 10 days prior to commencing work under this Contract. The HMAC is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, state and local regulations. The HMAC shall hold the Owner, the Architect/Engineer (A/E) and A/E's sub-Environmental Consultants harmless for failure to comply with any applicable work, hauling, disposal, safety, health or other regulation on the part of himself, his employees or his HMACs.
3. Federal Requirements which govern asbestos hazard abatement work include, but are not limited to, the following:
  - a. U.S. Department of Labor, OSHA including, but not limited to:  
Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Final Rules; 29 CFR 1910.1001 and 29 CFR 1926.58  
Respiratory Protection; 29 CFR 1910.134  
Construction Industry; 29 CFR 1926  
Access to Employee Exposure and Medical Records; 29 CFR 1910.2  
Hazard Communication; 29 CFR 1910.1200  
Specifications for Accident Prevention Signs and Tags; 29 CFR 1910.145
  - b. USEPA including, but not limited to:  
National Emission Standard for Hazardous Air Pollutants; 40 CFR 61 Subpart A  
National Emission Standard for Hazardous Air Pollutants: Amendments to Asbestos Standard; 40 CFR 61 Subpart M  
National Requirements: Reportable Quantity Adjustments; 40 CFR 763.117 and 40 CFR 763 Subpart E
4. State Requirements which govern asbestos abatement work include, but are not limited to, the following:
  - a. The State of Maryland.
5. Compliance with Current Building Design Standards
  - a. The HMAC shall ensure that a competent person remain outside of the work area during abatement activities. A minimum of one person meeting the qualifications for supervisor shall be present on site at all times during abatement work or activities and be able to communicate effectively with the workers and all governing authorities.
  - b. Except in the case of emergency, anyone entering an asbestos abatement work area, which is an OSHA-defined "regulated area," shall have received a minimum of 2-hour asbestos awareness training consistent with the EPA requirements.
  - c. HMAC shall ensure that the OSHA required asbestos danger signage in the English language is posted at all entrances at the work area. Areas of abatement work must be clearly demarcated. In all structures, whether partly occupied or not during asbestos removal, maintain clearly identified routes of egress.

- d. HMAC shall ensure that GFCIs are directly connected to all electrical sources in use outside of the work areas.
  - e. HMAC shall collect daily OSHA personal PCM air samples and post analytical results on a daily basis. The laboratory the HMAC uses to analyze samples must participate in the AIHA PAT program for fiber counting and analyze air sample via the NIOSH 7400 method. In addition, the microscopist shall have completed the NIOSH 583 Equivalent course training. Records shall be maintained to show air quality levels prior to, during and after asbestos abatement work on projects. These records shall show sample results of environmental and personal air data results.
  - f. HMAC shall ensure that all critical barriers are sealed with 6-mil polyethylene within the work area(s), all HVAC and electrical systems are de-energized within the work area, and all HVAC vents are sealed with two layers of 6-mil polyethylene.
  - g. HMAC shall ensure that all full containments contain a minimum negative pressure of 0.02 inches of water column.
  - h. HMAC shall ensure that all asbestos containing materials are adequately wetted with amended water during removal and disposal.
  - i. HMAC shall ensure that all asbestos waste disposal bags are labeled with the OSHA asbestos danger and generator labels.
  - j. HMAC Supervisor shall conduct a final visual inspection and ensure all visible suspect and confirmed asbestos debris has been successfully removed and disposed of properly upon completion of the project.
  - k. HMAC shall dispose of ACM waste in a Maryland approved landfill and obtain a copy of the signed disposal receipt as required by the EPA.
  - l. HMAC shall include the following as part of closeout documents: daily logs, sign-in sheets, contractor license, BWC certificate, liability insurance certificate, supervisor and work submittals (certificate, license, medical, fit test), materials safety and data sheets, waste manifests and signed landfill disposal receipts.
6. Compliance with Regulations and Current Building Design Standards
- a. The work, including contact with or handling of hazardous materials, disturbance or dismantling of surfaces containing hazardous materials, and disposal of hazardous materials, shall comply with the applicable requirements of: 29 CFR Parts 1910 and 1926; and 40 CFR Parts 61, 261, 761 and 763.
  - b. Work involving disturbance or dismantling of asbestos or asbestos containing materials, demolition of structures containing asbestos and removal of asbestos, shall comply with 40 CFR Part 61, Subparts A and M, and 40 CFR Part 763.
  - c. Work shall additionally comply with all applicable state and local safety and health regulations.
  - d. In case of a conflict between applicable regulations and the State of Maryland, the more stringent requirements shall apply.
  - e. Contractor Responsibility: The HMAC shall assume full responsibility and liability for compliance with all applicable codes, standards and regulations pertaining to the health and safety of personnel during execution of the Work, and shall hold the Owner harmless for any action on the Contractor's part, or that of the HMAC's

employees or subcontractors, that result in illness injury or death.

1. The Contractor shall have written safety and health programs in compliance with 29 CFR Parts 1910 and 1926.
2. Inspections, Tests, and Reports: The required inspections, tests and reports made by the contractor, subcontractor, specially trained technicians, equipment manufacturer, and others as required, shall be at the HMAC's expense.

7. Requirements for the Hazardous Materials Abatement Contractor:

- a. The Contractor must have a minimum of one Asbestos Hazard Abatement Supervisor (AHAS) and workers that have completed the OSHA 8 hour Asbestos Roofing Specific Training specific to Class II Asbestos work activities involving the removal of ACM, which is not TSI or surfacing material. This would include: roofing materials, siding, shingles and mastics.
- b. The HMAC must not have any Public Health Emergency Violations issued by the state of Maryland within the past two (2) years; as well as no previous unresolved or pending Public Health Emergencies.
- c. In the event of an accident or injury associated with the project, the HMAC needs to provide a written accident/ injury report within 24 hours of the incident to the Owner, and the Architect/ Engineer.
- d. In the event that any state or federal officials visit the project, the HMAC and/or Architect/ Engineer needs to notify the Owner immediately upon their arrival.
- e. The HMAC must provide the following **mandatory documents** prior to the post-bid review meeting:
  1. References from previous projects:
    - a. Projects are to be of similar size and scope.
    - b. Three to five references specific to the Superintendent scheduled for this project.
    - c. Each reference to include contact information and phone number for the Owner, Architect, Construction Manager, and Subcontractors.
    - d. Provide documentation of the project location, duration, scope of work, and client contact information.
    - e. Verification of years experience in asbestos abatement projects and hazardous materials abatement projects.
  2. Current financial statement
  3. Resume of proposed staff for the project – Superintendent
  4. Current abatement projects. Include contract value and completion dates.
  5. Summary and background of any prevailing wage complaints and/or pending prevailing wage complaints over the past three years (if applicable).
  6. Summary and background of any EEO violations and/or pending EEO violations over the past five years (if applicable).
  7. Summary and background of any EPA violations over the past 7 years; as well

as a statement as to how the violations were resolved (if applicable).

8. Summary and background of any State of Maryland violations over the past 7 years; as well as a statement as to how the violations were resolved (if applicable).
9. Summary and background of any OSHA violations over the past 7 years; as well as a statement as to how the violations were resolved (if applicable).
10. A detailed estimate for the bid.
11. Current Bureau of Worker's Compensation Certificate with Drug Free Workplace Endorsement.
12. Copy of license to conduct asbestos abatement activities.

C. Certifications

1. The HMAC must be licensed the State of Maryland to perform asbestos abatement activities as is required by the relevant code.
2. The HMAC's Supervisor must be certified by the State of Maryland as an Asbestos Hazard Abatement Specialist.
3. Each of the HMAC's employees, including full-time employees, temporary employees and contract labor, must be certified by the State of Maryland as either an Asbestos Hazard Abatement Worker or as an Asbestos Hazard Abatement Specialist.
4. All of the HMAC's employees performing any work on scaffolds must have general OSHA Scaffold training.
5. All of the HMAC's employees handling potential mercury, PCB or other hazardous chemicals must be HAZWOPER certified.

1.07 SUBMITTALS

- A. General. Submit the following in accordance with Conditions of Contract and Division 1 specification sections.
- B. Submittals.
  1. Worker Qualification Form. The HMAC shall submit completed Worker Qualification Forms to the Owner's Environmental Consultant for each employee who performs asbestos hazard abatement work on the project. This form must document that the employee has attended a Worker Protection Program. With this form, the HMAC shall also submit satisfactory evidence that he has complied with OSHA requirements for employee medical surveillance. No worker shall be permitted to work on this project unless a property documented Worker Qualification Form has been submitted for him.
  2. Asbestos Disposal Form. The HMAC shall complete and submit an Asbestos Disposal Form to the Owner's Environmental Consultant for each disposal of asbestos-containing or contaminated material.
  3. Laboratory Qualifications. The HMAC shall submit the qualifications of the laboratory to be used for the analysis of personnel monitoring. Submittals shall include documentation of successful participation in the AIHA sponsored PAT rounds
  4. Accident Reports: The Contractor must submit to the Owner's Representative a written report within three calendar days of any accident, fire, emergency, theft or incident in which

any personal or property damage took place, regardless of any other notifications performed. Include a copy of each accident report that is submitted by the Contractor or Subcontractors to their insurance carriers, within seven calendar days after the date of the accident.

5. The Hazardous Materials Abatement Contractor's application for payment will not be processed until all required submittals have been received by the Owner.
- C. Pre-Abatement Submittals. All documents are to be submitted and approved before the start of work at the site.
1. Provide copies of notifications to the following:
    - a. Police and Fire Department
  2. Copy of license to conduct asbestos abatement activities.
  3. Copy of current liability insurance certificate.
  4. Copy of current Bureau of Workers Compensation (BWC) certificate.
  5. Name, certification and health records of supervisor.
  6. Name, certification and health records of workers.
  7. Detailed Asbestos Abatement Plan (AAP) which describes procedures to be used to comply with the requirements of these specifications. The AAP shall have detailed written operating procedures describing control and removal techniques to be used as required by the State of Maryland. The AAP must be reviewed by the Owner and approved by the Environmental Consultant prior to commencing the work.
  8. Drawings which detail decontamination unit, waste container, water utility, traffic patterns, emergency exits, etc.
  9. Emergency contact list.
  10. Contractor's Site Specific Safety and Health Program: The HMAC shall submit a written copy of the Company Safety and Health Program as well as the site specific safety and health plan for the project to the Owner Representative within 14 calendar days of the Notice to proceed or before work commences on the project site, whichever is earlier. This plan shall include emergency evacuation procedures, respirator protection program, procedures to prevent unauthorized entry into regulated work areas, and measures for accident prevention. This shall also include a negative exposure assessment for Class I work if half-face respirators are to be utilized for such work.
  11. Safety Data Sheets (SDS): The contractor shall provide the SDS's for all products containing hazardous chemicals to the Owner's Representative within 14 calendar days of the Notice to Proceed or before work commences on the site. The SDS's shall be maintained at the project site for workers, Owner personnel and government officials. SDS's for new products shall similarly be submitted to the Owner's Representative and be retained at the project site until completion of the project.
  12. A copy of the written notification to any rental agencies stating the intended use of rental equipment for an asbestos abatement project, or a statement that no rental equipment will be used on this asbestos abatement project.
- D. Close-Out Documentation. The following documents are to be submitted to the Owner-at



the completion of the work on site.

1. Provide completed landfill receipts and any waste hauler manifests.
2. Provide log of all air samples and results.
3. Provide work area sign-in sheets.
4. Provide daily project logs.
  
5. Provide copies of all supervisor's and worker's required certification documents to perform asbestos abatement for any personnel not submitted in the pre-abatement submittal package.
6. Provide copies of all State of Maryland and EPA inspection reports (if applicable).
7. Provide copies of all state of Maryland OEPA notification revisions (if applicable).
8. Provide copies of accident reports (if applicable).

#### 1.08 PRECONSTRUCTION SAFETY MEETING

- A. Prior to commencing construction, representatives of the Contractor, including the general superintendent and one or more safety representatives shall meet with the Owner's Representative for the purpose of reviewing Contract safety and health requirements.
  1. The Contractor's Safety and Health Program and Site Specific Safety and Health Plan shall be reviewed and implementation of safety and health provisions pertinent to the Work shall be discussed.
  2. The Contractor shall be prepared to discuss, in detail, the Contractor's Site Specific Safety and Health Plan including measures intended to control any unsafe or unhealthy conditions associated with the work to be performed under the contract.
  3. This meeting may be held in conjunction with the pre-construction conference, if so directed by the Owner's Representative. The conduct of this meeting is not contingent upon a general pre-construction meeting.

The level of detail for the safety meeting is dependent upon the nature of the work and potential for inherent hazards.

#### 1.09 JOB CONDITIONS

- A. The HMAAC shall notify the Owner at least one week before mobilizing or setting up to perform the work.
- B. Documents to be Posted and Maintained on Job Site.
  1. To be posted on site:
    - a. Copy of EPA notification(s)
    - b. Proof of worker training
    - c. Emergency contact list
    - d. U.S. Department of Labor Job Safety & Health Protection Notice, per 29 CFR 1903.2(a)(1)
    - e. Copy of contractor's license for abatement
    - f. Equal opportunity notice

- g. Worker's Compensation Certificate
  - h. Daily clean-up program
  - i. Fire and Police notifications
2. To be maintained on site:
- a. All employee certifications and health records
  - b. A copy of all pre-construction submittals
  - c. Specifications, drawing and other contract documents
  - d. Methods of abatement
  - e. Daily Job Inspection Reports
  - f. Personnel Air Sampling Results (24 hour per day posting)
  - g. All pre and interim environmental air sampling results.
  - h. Negative Exposure Assessment.
  - i. Asbestos NESHAPs Survey Report
- C. Temporary Facilities
1. Materials and Equipment
- a. Scaffolding - Provide all scaffolding, ladders and/or staging, etc. as necessary to accomplish the Work of this Contract. Erection of scaffolding must conform with OSHA and industry safety standards for scaffold operation.
  - b. Electrical - Electrical service may be obtained at the building. Comply with all applicable NEMA, NECA and UL standards and regulations for materials and layout of temporary electrical service. HMAc shall provide hardwired ground fault circuit interrupters with a minimum 100 amp rating for each work area or floor of a work area. All electrical power used for this project shall be provided via these units.
  - c. First Aid - Comply with governing regulations and recognized recommendations within the construction industry. HMAc shall be responsible for providing first aid supplies for employees.
  - d. Fire Extinguishers - Provide Type "A" fire extinguishers for temporary offices and similar spaces where there is minimal danger of electrical or grease-oil-flammable liquid fires. In other locations, provide type "ABC" dry chemical extinguishers. One fire extinguisher, sealed in polyethylene, of the "ABC" type shall be placed within the work area for each 2,000 square feet of floor space in a location which would be easily accessible during an emergency.
  - e. Heat - HMAc shall maintain a temperature in the work area of not less than 50°F and a temperature of not less than 70°F in non-work areas in the building.
  - f. Documents - HMAc will maintain and post all required documents on site.
- D. Damage. Promptly repair damage caused to adjacent facilities by demolition work.

#### 1.10 DELIVERY, STORAGE AND HANDLING

##### A. Material Deliveries

1. Whenever practicable, deliveries shall be made during regular working hours and only when the Contractor's representative is available to receive them. Deliver material in approved containers and with properly licensed vehicles and operators. Open delivery vehicles not permitted. Deliver materials in fully closed vehicles or tarp-covered vehicles. All dump trucks shall be fully covered while in transport to and from the unloading site. All loads shall be securely fastened until unloading. Engines shall not be left running while vehicles are loading, unloading, waiting or parked. Do not block roads, walks, building entrances/exits, fire hydrants and standpipes, exterior tanks or building gas connections.

1.11 SPECIAL WARRANTY Not used.

## PART 2 – PRODUCTS

### 2.01 PRODUCTS

- A. Safety and Health Programs: The Contractor shall submit copies of the written site specific project safety and health plan and emergency action procedures, as applicable to the work scope, as required as a result of the safety meeting, or as required by OSHA 29 CFR, Part 1926 including but not necessary limited to the procedures and programs that support the requirements of the following:
  1. Designation of Safety Competent Person
  2. Occupational Noise Exposure
  3. Fall Protection
  4. Personnel Protective Equipment
  5. Control of Hazardous Energy
  6. Hazardous Materials Waste Management Plan (draft if final plan has not been accepted)
  7. Electrical Safety Related Work Practices
  8. Lead
  9. Asbestos
  10. Respirator Protection
  11. Confined Spaces
  12. Emergency Evacuation and Reporting
  13. Hot Work
- B. Contractor's Safety and Health Plan: In Addition to specific safety and health programs applicable to this project, HMA shall submit to the Owner a copy of the firms' general Safety and Health Plan listing emergency Procedures and contact persons with home addresses and telephone numbers.
- C. Permits: If Hazardous materials are disposed of off-site, submit copies of shipping manifests and permits from applicable federal, state or local authorities and disposal facilities, and submit certificates that the material has been disposed of in accordance with regulations.

## PART 3 – EXECUTION

### 3.01 WORK PRACTICES

A. Use of Power Actuated Fastener Tools.

1. Use of explosives shall be prohibited.
2. Power actuated fastener tools are often used on construction sites due to the unique manner in which objects can be accurately and positively secured to a substrate. Also, these tools tend to allow for work to proceed more rapidly and efficiently with desirable results. However, these tools also present potential problems to the work area relative to damaged base material and fasteners. Also, the fastener tools present health and safety hazards to untrained users of fastener equipment, unprotected workers in the immediate work area, as well as building occupants that might be present. Based upon these circumstances, there is a need for safe work practice requirements to be followed whenever such equipment is used. It should be noted that fasteners can be powered or driven primarily by powder charges, gas, or pneumatic means.
3. Power actuated fastener tools (e.g., nail guns, etc.) including pneumatic, powder actuated and gas actuated tools shall be used by individuals for whom the contractor has documentation of appropriate training and the contractor has written standard operating procedures and safety plan for the use of this equipment in the particular application requested.
4. The contractor will be fully responsible to make every effort to appropriately protect the safety of people and equipment when utilizing this tool. These include, but are not limited to, the following:
  - a. The contractor shall inspect the substrate and the fastening material to determine if this proposed fastening method is appropriate. This determination should include a description of the type of material to be fastened and the method of fastening. The base material should be inspected to determine whether it is too hard, soft, or brittle that it may cause spalling, cause the fastener to shatter or not hold, or cause the fastener to free flight.
  - b. The contractor shall develop written instructions or procedures on the use of the fastener tool. The standard operating procedures should include the type of surfaces (e.g. metal studs to floor, hangers to the deck, etc.) to be fastened to minimize damage to the building and injury to the user, other employees, and the public and safety precautions.  
NOTE: Concrete or other surfaces that are damaged shall not be fastened. When fastening into concrete, never fasten closer than two inches from the edge since this may reduce fastener strength or damage to this material.
  - c. Trained, competent, and credentialed individuals shall be the only persons allowed to utilize such fastener tools.
  - d. A "Competent Person" shall be present to ensure that the fastener tool is being used properly and workers not involved with the fastener task are clear of the immediate work area. This would include non-construction workers or building occupants above and below where the fastener tool is being used.
  - e. Fastener tool operators shall report immediately any problems associated with the device or fastener work to the "Competent Person" or immediate supervisor and not proceed until the problem has been resolved and authorization given to proceed.

- f. The fastener tool shall be operated at the lowest power or charge setting, as well as using the shortest fasteners to ensure a sufficient fastening, as well as to minimize personal injury and/or property damage.
- g. The fastener equipment shall be inspected for proper operation before use to ensure the proper discharge and a solid fastener attachment.
- h. The fastener equipment shall be unloaded before inspecting, servicing, cleaning or storing.
- i. The fastener equipment and charging equipment shall be stored in a tamper resistant container that can be locked when not in use.
- j. The fastener equipment shall be used in accordance with the owner's manual and manufacturer's directions.
- k. The appropriate personal protective equipment (i.e., safety glasses, hard hats, hearing protection, etc.) shall be worn by the operator of the fastener equipment.

B. Electrical

1. Electrical arc welding equipment shall not be connected to the building power supply.

C. Hazardous Materials

1. The contractor shall bring to the attention of the Architect/Engineer and the Environmental Consultant any material encountered during execution of the Work that the contractor suspects is hazardous. The Environmental Consultant shall have the State of Maryland perform test to determine if the material is hazardous.
2. If the tested material is found to be hazardous, and/or if additional protective measures are required, a change to the Contract price may be provided subject to the applicable provisions of the Contract.

D. Additional Safety Requirements

1. No work shall be performed in any area occupied by the public or Owner employees unless approved by the Owner.
  - a. Accident Treatment and Records: The HMAC shall post emergency first aid information.
  - b. No person, regardless of position or authority, shall operate any switch, valve, or equipment that has an official lockout/tag out tag attached to it, nor shall such tag be removed except as provided in this section.
  - c. When work is to be performed on electrical circuits, the work shall be performed only by qualified personnel following the required safety procedures.
  - d. Identification markings on building light and power distribution circuit breakers shall not be relied on for establishing safe work conditions.
  - e. Before clearance will be given on any equipment other than electrical (generally referred to as mechanical apparatus), the apparatus, valves, or systems shall be secured in a passive condition with the appropriate vents, pins, and locks.

- f. Pressurized or vacuum systems shall be vented to relieve differential pressure completely.
  - g. Vent valves shall be lockout/tag out tagged open during the course of the work.
  - h. Where dangerous gas or fluid systems are involved, or in areas where the environment may be oxygen deficient, systems or areas shall be purged, ventilated, or otherwise made safe prior to entry.
- E. Personnel Protective Equipment
1. Special facilities, devices, equipment and similar items used by the contractor in execution of the work shall comply with 29 CFR, Part 1910, Subpart 1 and other applicable regulations.
- F. Respirator Protection
1. At a minimum, a half-face respirator shall be used for the following activities:
    - a. Construction of containments.
    - b. Pre-cleaning and removal of non-friable asbestos.
    - c. Bagging of asbestos waste.
    - d. Deconstruction of containments.
- G. Work Area Isolation
1. The Contractor shall post warning signs far enough away from the work area to permit an employee to read the sign and take the necessary protective measures to avoid exposure.
  2. The Contractor shall seal, shut down and lock out all heating, cooling, and air conditioning system (HVAC) components that are in, or whose make-up is drawn from, the work area.
  3. The Contractor shall seal all critical barriers with 1 layer of 6-mil (full weight) polyethylene. This will include all non-asbestos thermal, windows, HVAC penetrations (grill, etc.), skylights, etc. Security devices shall be left exposed and functioning unless they are to be removed and replaced. Secured drop cloth shall be used to protect adjacent areas.
- H. Removal of ACM
1. The floor of the work area shall be kept free of unnecessary equipment supplies and debris. All contaminated materials shall be promptly bagged and removed from the work area according to established removal methods. The HMAc shall not allow asbestos-containing materials to dry out or collect on floors or other surfaces. Bagged ACM shall not accumulate within the work area. No contaminated materials are to be stored outside of the building except in a sealed, secure, temporary storage trailer.
  2. The HMAc shall use amended water during all asbestos removal operations. All ACM must be thoroughly wetted prior to and during removal and shall be wetted during bagging operations.
  3. The use of the technique of dry brushing, dry sweeping or dry cleaning of asbestos, asbestos-contaminated material or ACM residue is strictly prohibited.
- I. Disposal of ACM
1. All ACM must be disposed of in approved containers.

2. Proper decontamination procedures for removing ACM wastes from the work area are required.
  3. All ACM wastes are to be removed from the structure and properly disposed of in a timely fashion.
  4. All ACM bagged wastes shall be labeled, counted by HMAc, and entered into daily logs.
  5. Proper documentation of all ACM wastes generated as a result of this project must be delivered to the Owners' Representative in a timely fashion.
  6. Category I asbestos containing waste may be disposed of at State of Maryland that will accept such waste.
- J. Cleaning of Work Area
1. Disposable cloths are to be final cleaning procedures. Cloths are to be used only once and disposed of. Rinse water shall be changed frequently.
  2. All liquids sprayed within the work area shall be delivered through an airless sprayer. Spraying with garden hoses and pressurized sprayers is prohibited.

### **3.02 EMERGENCY SUSPENSION OF WORK**

- A. When the HMAc is notified by the Architect/Engineer or the Owners' Representative, of non-compliance with the safety or health provisions of the Contract, the Contractor shall immediately, unless otherwise instructed, correct the unsafe or unhealthy condition.
1. If the HMAc fails to comply promptly, all or part of the work will be stopped by notice from the Architect/Engineer.
  2. When, in the opinion of and by notice given by the associate and or the Owner's Representative, satisfactory corrective action has been taken by the HMAc, work shall resume.
  3. The HMAc shall not be allowed any extension of time or compensation for damages in connection with a work stoppage for an unsafe or unhealthy condition

### **3.03 PROTECTION OF PERSONNEL**

- A. The HMAc shall take all necessary precautions to prevent injury to the public, occupants, or damage to property of others. The public and occupants includes all persons not employed by the contractor or subcontractor.
- B. Wherever practical, the work area shall be fenced, barricaded, or otherwise blocked off from the public or occupants to prevent unauthorized entry into the work area.
1. Provide traffic barricades and traffic control signage where construction activities occur in vehicular areas.
  2. Corridors, aisles, stairways, doors and exit ways shall not be obstructed or used in a manner to encroach upon routes of ingress or egress utilized by the public or occupants, or to present an unsafe or unhealthy condition to the public or occupants.
  3. Store, position and use equipment, tools materials, scraps and trash in a manner that does not present a hazard to the public or occupants by accidental shifting, ignition, or other hazardous activity.
  4. Store and transport refuse and debris in a manner to prevent unsafe and unhealthy conditions for the public and occupants. Cover refuse containers and remove refuse on a frequent

regular basis acceptable to the Owner's Representative. Use Tarpaulins or other means to prevent loose transported materials from dropping from trucks.

- C. Alternate Precautions: When the nature of the work prevents isolation of the work area and the public or building occupants may be in pass through, under or over the work area, alternate precautions such as the posting of signs, the use of signal persons, the erection of barricades or similar protection around particularly hazardous operations shall be used as appropriate.
- D. Public Thoroughfare: When work is to be performed over a public thoroughfare such as a sidewalk, roadway or other site access way, the thoroughfare shall be closed, if possible, or other precautions taken such as the installation of screens or barricades. When the exposure to heavy falling objects exists, as during the erection of building walls or during demolition, special protection of the type detailed in 29CFR, Parts 1910 and 1926 shall be provided.

### 3.04 MONITORING

#### A. Air Monitoring Required by OSHA Regulations

- 1. The HMAC must perform air monitoring in the work area to comply with OSHA regulations for his employees. Results shall be posted no later than 24 hours after sample collection.
- 2. If at any time during the project, the PCM personal air sample results exceed the OSHA PEL of 0.1 fibers per cubic centimeter, then the HMAC shall cease all abatement activities. The HMAC shall then review work procedures and evaluate alternative abatement methods which could reduce fiber concentration and implement additional engineering controls prior to continuing asbestos abatement.
- 3. The HMAC shall keep a log of all monitoring activities he performs. A complete log of all air samples and results will be submitted at the completion of the Project. It is the HMAC's responsibility to furnish and maintain all air monitoring equipment. The HMAC shall bear all costs in connection with air sampling and reporting under this section.
- 4. The Owner's Environmental Consultant may procure personal air samples of HMAC's employees to measure worker exposure levels. HMAC will cooperate with such monitoring activities.

#### E. Personnel and Facility Protection

- 1. Protection Instruction. The HMAC shall provide decontamination and work procedures to be followed by the workers.
- 2. Protective Clothing. The HMAC shall comply with OSHA regulations for protective clothing. The HMAC shall at all times have sufficient supplies of protective clothing and supplies needed for the proper entrance/exit from the work area.
- 3. Hygiene Facilities and Practices. The HMAC shall comply with OSHA regulations concerning hygiene facilities and practices. Daily inspection and disinfecting of decontamination facilities shall be provided by the HMAC.
- 4. Emergency Precautions. Prepare a contingency plan for emergencies including fire, accident, power failure, negative pressure system failure, supplied air system failure, or any other event that may require modification or abridgment of decontamination or work area isolation procedures. Include a plan of specific procedures for decontamination or work area isolation. Note that nothing in this plan should impede safe exiting or providing of adequate medical attention in the event of an emergency.
- 5. Facility Security. The HMAC shall comply with OSHA and EPA regulations concerning signage and labeling. All entrances to the work areas shall be clearly labeled to prevent



accidental entrance to a regulated area. Labeling shall include signs, stickers and flagging as appropriate to prevent unauthorized entry to the work site.

F. Disposal

1. Disposal containers shall be suitable to receive and retain any asbestos-containing or contaminated materials until disposal at an approved site. The containers shall be labeled in accordance with OSHA, EPA, and DOT regulations. Shipping manifests should be submitted to the Owner as well as disposal documentation.

G. Execution. The sequence of execution for each work area shall be as follows:

1. Prepare work area.
2. Remove asbestos-containing materials.
3. Remove and dispose of the contaminated waste generated by work area preparation and removal activities.
4. Decontaminate work area and clean site.

3.05 ASBESTOS ABATEMENT PROCEDURES

A. The general sequence for performing asbestos abatement activities will be as follows:

1. Work area isolation
2. General Abatement Sequence and Removal Procedures
3. Disposal of ACM
4. Cleaning of work area (decontamination)
5. Work area clearance

B. The following paragraphs describe the sequence of activities; however, practices may not be limited to those herein described.

C. Work Area Isolation

1. The Contractor shall post warning signs far enough away from the work area to permit an employee to read the sign and take the necessary protective measures to avoid exposure.
2. The Contractor shall seal, shut down and lock out all heating, cooling, and air conditioning system (HVAC) components that are in, or whose make-up is drawn from, the work area.
3. The Contractor shall seal all critical barriers with 1 layer of 6-mil (full weight) polyethylene. This will include all non-asbestos thermal, windows, HVAC penetrations (grill, etc.), skylights, etc. Security devices shall be left exposed and functioning unless they are to be removed

D. Removal of Asbestos-Containing Materials

1. Remove all equipment and fixtures from area to be abated necessary to accomplish the asbestos removal specified. All items removed are to be stored in a location designated by the Owner.
2. Pre-clean roof to be free and clear of all debris prior to roof flashing removal.
3. Spray surfactant on all surfaces within the work area. Allow surfactant to penetrate depth of

material to be removed.

4. Removal of ACM - Roofing Materials

- a. Thoroughly wet prior to and during removal operations. No dry brushing, sweeping, or cleaning of asbestos or asbestos-contaminated materials shall occur.
- b. Apply an encapsulant to exposed edges of remaining roofing surfaces, which may have been contaminated with asbestos-containing roofing debris.
- c. Contractor shall not allow asbestos-containing materials to dry out or collect on roof or other surfaces.
- d. All asbestos containing roofing materials must be promptly bagged and safely carried or lowered to the ground. Contractor will not be permitted to drop or throw asbestos containing roofing materials to the ground. Prevent any roof flashing debris from falling to ground below roof.
- e. All cutting of asbestos containing roof flashings must be conducted with hand tools/ hand methods. No saw cutting of asbestos containing flashings will be permitted.

E. Disposal of ACM

1. All ACM generated from this project shall be properly documented. Detailed disposal documents including information concerning amounts of material, generator information, hauler information, date of generation, and disposal documentation must be processed for all material disposed of as contaminated wastes.
2. All bagged contaminated materials must be sufficiently wetted, sealed in airtight containers, and at a minimum must be sealed within two 6-mil polyethylene bags (one sealed inside the other). No rips or tears shall be visible in the bags, no material may be protruding through the polyethylene, and no visible residue may be visible outside of a container. HMAAC shall wash all inner, as well as outer, bags of asbestos-containing material.
3. All asbestos disposal containers must be labeled with the current hazardous warning labels and DOT information. The HMAAC shall label the inner and outer asbestos bag or container.
4. All contaminated materials must be moved from the work area through the waste decontamination unit. There all bags will be washed and placed into clean bags before being moved from the building.
5. All ACM wastes must be transported in a fully enclosed vehicle and or covered dumpster. If vehicle, the driver compartment must be separated from the cargo compartment. The cargo compartment and or dumpster must be lined with 6-mil polyethylene, which is to be removed at the dump and disposed of as contaminated.
6. The cargo compartment of the disposal vehicle must be cleaned between loads. Cleaning shall include washing, wet-wiping and HEPA vacuuming.

F. Cleaning of the Work Area

1. All HEPA filtration devices shall continue to operate during cleaning of the work area. All vacuums inside work area shall utilize HEPA filtration.
2. Cleaning shall be initiated only after all of the gross ACM has been removed from the work

area.

3. All unnecessary equipment, tools, devices and supplies shall be properly cleaned and removed from the work area via the equipment decontamination unit.
  4. Cleaning shall start by wetting all surfaces within the work area with clean water. Surfaces shall be wetted from top to bottom.
  5. Removal of ACM residue shall be accomplished with the use of wire or nylon-bristle brushes, nylon scouring pads, towels, sponges and HEPA-equipped vacuums. The use of the technique of dry brushing ACM residue is strictly prohibited.
  6. After all residue of ACM has been removed, the surfaces are to be cleaned with clear water and wiped with a clean disposable towel. Each towel is to be used only once and then disposed of. Rinse water is to be changed frequently.
  7. Perform inspection and clearance of work area.
  8. HMAC shall reinstall all fixtures removed during the abatement process.
- G. Final Visual Clearance/Cleaning Procedures. The following clean-up sequence shall be utilized for this asbestos removal project. It consists of visual inspection per area. The sequence is as follows:
1. Gross Removal Inspection - A visual inspection of all surfaces previously containing ACM. All surfaces must be cleaned thoroughly so no visible debris, film, or residues remain.
  2. Upon favorable visual clearance inspection results, the HMAC shall remove all remaining barriers, equipment, and any supplies or materials from the work area.

### 3.06 DISPOSAL OF MATERIALS

- A. General. Remove from building site debris, rubbish and other materials resulting from asbestos removal operations. Transport and legally dispose off site.
1. Burning of removed materials is not permitted on project site.

### 3.07 CLEAN-UP AND REPAIR

- A. General. Upon completion of asbestos removal work, remove tools, equipment and demolished materials from site. Remove protections and leave interior areas broom clean.
1. Repair areas damaged by asbestos removal procedure. Return elements of construction and surfaces to condition existing prior to start of operations. Repair adjacent construction or surfaces soiled or damaged by asbestos removal work.

### 3.08 ENVIRONMENTAL PROTECTION

- A. Dispose of solid, liquid and gaseous contaminants in accordance with local codes, laws, ordinances and regulations.
- B. Comply with applicable federal, state and local noise control laws, ordinances and regulations, including but not limited to 29 CFR, Part 1910.95 and 29 CFR, Part 1926.52

END OF SECTION 028221

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SECTION 03 30 10 - MISCELLANEOUS CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Section includes cast-in-place concrete, including reinforcement, concrete materials, mixture design, placement procedures and finishes.

1.2 REFERENCE STANDARDS

- A. ACI 211.1 – Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete; American Concrete Institute.
- B. ACI 301 – Specifications for Structural Concrete for Buildings; American Concrete Institute.
- C. ACI 302.1R – Guide for Concrete Floor and Slab Construction; American Concrete Institute.
- D. ACI 304R – Guide for Measuring, Mixing, Transporting, and Placing Concrete; American Concrete Institute.
- E. ACI 305R – Hot Weather Concreting; American Concrete Institute.
- F. ACI 306R – Cold Weather Concreting; American Concrete Institute.
- G. ACI 318 – Building Code Requirements for Structural Concrete and Commentary; American Concrete Institute.
- H. ASTM C 33 – Standard Specification for Concrete Aggregates.
- I. ASTM C 39/C 39M – Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
- J. ASTM C 94/C 94M – Standard Specifications for Ready-Mix Concrete.
- K. ASTM C 150 – Standard Specification for Portland Cement.
- L. ASTM C 173/C 173M – Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
- M. ASTM C 260 – Standard Specification for Air-Entraining Admixtures for Concrete.
- N. ASTM C 494/C 494M – Standard Specification for Chemical Admixtures for Concrete.
- O. ASTM D 1751 – Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types).
- P. IBC 2018 – International Building Code.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete mixture.

1.4 QUALITY ASSURANCE

- A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
- B. Comply with the following sections of ACI 301, unless modified by requirements in the Contract Documents:
  - 1. "General Requirements".
  - 2. "Formwork and Formwork Accessories".
  - 3. "Reinforcement and Reinforcement Supports".
  - 4. "Handling, Placing and Constructing".
- C. Comply with ACI 117, "Specification for Tolerances for Concrete Construction and Materials".

PART 2 - PRODUCTS

2.1 FORMWORK

- A. Furnish formwork and formwork accessories according to ACI 301.

2.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.
- B. Plain-Steel Wire: ASTM A 82/A 82M, as drawn.
- C. Plain-Steel Wire Reinforcement: ASTM A 185/A 185M fabricated from as-drawn steel wire into flat sheets.

2.3 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand and source throughout the Project.
  - 1. Portland Cement: ASTM C 150, Type 1.
  - 2. Blended Hydraulic Cement: ASTM C 595, Type IS, Portland blast-furnace slag.
- B. Normal Weight Concrete: ASTM C 33, graded, 1" nominal maximum aggregate size.
- C. Water: Clean and not detrimental to concrete.

## 2.4 ADMIXTURES

- A. Air-Entraining Admixture: ASTM C 260.
- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding 0.1 percent by weight of cement. Do not use calcium chloride or admixtures containing calcium chloride.
  - 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
  - 2. Retarding Admixture: ASTM C 494/C 494M, Type B.
  - 3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
  - 4. High-Range, Water Reducing Admixture: ASTM C 494/C 494M, Type F.
  - 5. High-Range, Water Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.

## 2.5 RELATED MATERIALS

- A. Vapor Retarder: Plastic Sheet: ASTM E 1745, Class A.
- B. Joint-Filler Strips: ASTM D 1751; asphalt saturated cellulosic fiber.
- C. Dumbbell Waterstop by SIKA.

## 2.6 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming; manufactured for application to fresh concrete.
- B. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth or cotton mats.
- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309 Type 1, Class B.
- F. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM 1315, Type 1, Class A.

## 2.7 CONCRETE MIXTURES

- A. Comply with ACI 301 requirements for concrete mixtures.
- B. Normal-Weight Concrete: Prepare design mixes, proportioned according to ACI 301 as follows:
  - 1. Minimum Compressive Strength: At 28 days, 5000 psi for exterior work and 3000 psi for interior and below grade work.
  - 2. Maximum Water Cementitious Materials Ratio: .40 for exterior work and .58 for interior and below grade work.

3. Cementitious Materials: At Contractor's option, use ground granulated blast-furnace slag as needed to reduce the total amount of Portland cement, which would otherwise be used, by not more than 50 percent.
4. Slump Limit: 4 inches and 8 inches for concrete with a verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch.
5. Air Content: Maintain within range permitted by ACI 301. Do not allow air content of trowel finished floor slabs to exceed 3 percent.

## 2.8 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix and deliver concrete according to ASTM C 94/C 94M and furnish batch ticket information.
  1. When air temperature is above 90 degrees F, reduce mixing and delivery time to 60 minutes.
- B. Project-Site Mixing: Not permitted.

## PART 3 - EXECUTION

### 3.1 FORMWORK

- A. Design, construct, erect, brace, and maintain formwork according to ACI 301.

### 3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

### 3.3 VAPOR RETARDERS

- A. Install, protect, and repair vapor retarders according to ASTM E 1643. Place sheets in position with longest dimension parallel to the direction of pour.
  1. Lap joints 6 inches and seal with manufacturer's recommended adhesive or joint tape.

### 3.4 STEEL REINFORCEMENT

- A. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
  1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

### 3.5 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Locate and install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.



- C. Contraction Joints in Slab-On-Grade: Form weakened-place contraction joints, sectioning concrete into areas as indicated or approved by Architect.
  - 1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of the joint with groover tool to a radius of 1/8 inch. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover marks on concrete surfaces.
  - 2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8 inch wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
- D. Isolation Joints: Install joint-filler strips at junctions with slabs-on-grade and vertical surfaces, such as column pedestals, foundation walls, grade beams and other locations as indicated.
  - 1. Extend joint fillers width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.

### 3.6 CONCRETE PLACEMENT

- A. Comply with ACI 301 for placing concrete.
- B. Do not add water to concrete during delivery, at Project site, or during placement.
- C. Consolidate concrete with mechanical vibrating equipment.

### 3.7 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defective areas repaired and patched. Remove fins and other projections exceeding ¼ inch.
  - 1. Apply to concrete surfaces not exposed to view.
- B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defective areas. Remove fins and other projections exceeding 1/8 inch.
  - 1. Apply to concrete surfaces exposed to public view, to receive a rubbed finish, or to be covered with a coating or covering material applied directly to concrete.
- C. Rubbed Finish: Apply the following rubbed finish, defined in ACI 301 to smooth-formed finished as-cast concrete where indicated.
  - 1. Smooth rubbed finish.
- D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

### 3.8 FINISHING UNFORMED SURFACES

- A. General: Comply with ACI 302.1R for screeding, re-straightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

- B. Trowel Finish: Apply a hard trowel finish to surfaces indicated and to floor and slab surfaces exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or other thin film-finish coating system.
- C. Trowel or Fine Broom Finish: Apply a partial trowel finish, stopping after second troweling, to surfaces indicated and to surfaces where ceramic or quarry tiles are to be installed by either thickset or thin-set methods. Immediately after second troweling, and when concrete is still plastic, slightly scarify surface with a fine broom.
- D. Non-slip Broom Finish: Apply a non-slip broom finish to surfaces indicated and to exterior concrete platforms, steps, and ramps. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route.

### 3.9 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306 for cold weather protection and with ACI 305 for hot weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb./sq. ft./h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- D. Curing Methods: Cure formed and unformed concrete for at least seven days by one or a combination of the following methods.
  - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
    - a. Water.
    - b. Continuous water-fog spray.
    - c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12 inch lap over adjacent absorptive covers.
  - 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
  - 3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
  - 4. Curing and Sealing Compound: Apply uniformly to floors and slabs as indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.10 FIELD QUALITY CONTROL

- A. Testing Agency: Contractor shall engage and pay for a qualified testing agency that is acceptable to the Owner to perform tests and inspections.
- B. Tests: Perform according to ACI 301.
  - 1. Testing Frequency: One composite sample shall be obtained for each 50 cubic yards or fraction thereof of each concrete mix poured each day.

3.11 REPAIRS

- A. Remove and replace concrete that does not comply with requirements of this Section.

END OF SECTION

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SECTION 040110 - MASONRY CLEANING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes cleaning the existing building following specified restoration procedures and prior to application of specified water repellent.
- B. Related Requirements:
  - 1. Section 071900 "Water Repellents."

1.2 DEFINITIONS

- A. Low-Pressure Spray: 100 to 400 psi, 4 to 6 gallons per minute.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
  - 1. Review methods and procedures related to cleaning masonry including, but not limited to, the following:
    - a. Verify masonry-cleaning equipment and facilities needed to make progress and avoid delays.
    - b. Materials, material application, and sequencing.
    - c. Cleaning program.
    - d. Coordination with building occupants.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For paint-remover manufacturer and chemical-cleaner manufacturer.
- B. Cleaning program.

1.5 QUALITY ASSURANCE

- A. Cleaning Program: Prepare a written cleaning program that describes cleaning process in detail, including materials, methods, and equipment to be used; protection of surrounding materials; and control of runoff during operations. Include provisions for supervising worker performance and preventing damage.
  - 1. If materials and methods other than those indicated are proposed for any phase of cleaning work, add a written description of such materials and methods, including evidence of successful use on comparable projects and demonstrations to show their effectiveness for this Project.

1.6 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit masonry-cleaning work to be performed according to product manufacturers' written instructions and specified requirements.
- B. Clean masonry surfaces only when air temperature is 40 deg F and above and is predicted to remain so for at least seven days after completion of cleaning.

PART 2 - PRODUCTS

2.1 CLEANING MATERIALS

- A. Water: Potable.

PART 3 - EXECUTION

3.1 PROTECTION

- A. Protect the building and other surfaces against damage from cleaning operations. Control overspray to prevent contact with people, motor vehicles, landscaping, buildings, and other surfaces.
  - 1. Dispose of runoff from operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.
  - 2. Provide temporary rain drainage during work to direct water away from building.

3.2 CLEANING MASONRY, GENERAL

- A. Cleaning Appearance Standard: Cleaned surfaces are to have a uniform appearance as viewed from 20 feet away by Architect.
- B. Proceed with cleaning in an orderly manner; work from top to bottom of each scaffold width and from one end of each elevation to the other. Ensure that dirty residues and rinse water do not wash over dry, cleaned surfaces.
- C. Use only those cleaning methods indicated for each masonry material and location.
  - 1. Spray Equipment: Use spray equipment that provides controlled application at volume and pressure indicated, measured at nozzle. Adjust pressure and volume to ensure that cleaning methods do not damage surfaces, including joints.
    - a. Equip units with pressure gages.
    - b. For water-spray application, use fan-shaped spray that disperses water at an angle of 25 to 50 degrees.
- D. Perform each cleaning method indicated in a manner that results in uniform coverage of all surfaces, including corners, moldings, and interstices, and that produces an even effect without

streaking or damaging masonry surfaces. Keep wall wet below area being cleaned to prevent streaking from runoff.

- E. Perform additional general cleaning, paint and stain removal, and spot cleaning of small areas that are noticeably different when viewed according to the "Cleaning Appearance Standard" Paragraph, so that cleaned surfaces blend smoothly into surrounding areas.
- F. Water-Spray Applications: Use cold water applied by low-pressure spray. Unless otherwise indicated, hold spray nozzle at least 6 inches from masonry surface and apply water in horizontal back-and-forth sweeping motion, overlapping previous strokes to produce uniform coverage.

### 3.3 FINAL CLEANING

- A. Clean adjacent nonmasonry surfaces of spillage and debris. Use detergent and soft brushes or cloths.
- B. Remove debris from gutters and downspouts. Rinse off roof and flush gutters and downspouts.
- C. Remove masking materials, leaving no residues that could trap dirt.

END OF SECTION 040110

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SECTION 040120.93 – MASONRY REPAIRS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Repair of existing concrete unit masonry assemblies in locations identified on the Drawings.

1.2 ACTION SUBMITTALS

A. Product Data:

1. Concrete unit masonry
2. Mortar and grout materials
3. Insulation
4. Reinforcement and anchors

B. Samples for verification in the form of the following:

1. Split-faced fluted concrete masonry units.
2. Mortar color samples.

C. Mortar and grout mixes.

1.3 FIELD CONDITIONS

A. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.

1. Protect sills, ledges, and projections from mortar droppings.
2. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.

B. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F (4 deg C) and higher and will remain so until masonry has dried, but not less than seven days after completing cleaning.

C. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

## PART 2 - PRODUCTS

### 2.1 CONCRETE MASONRY UNITS

- A. Shapes: Match existing by field-verification and submittal of samples for Architect's approval.
- B. CMUs: ASTM C90.
  - 1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 2150 psi.
  - 2. Density Classification: Normal weight.
  - 3. Type: Split faced, fluted. Match color and pattern of existing masonry.

### 2.2 MORTAR AND GROUT MATERIALS

- A. Portland Cement: ASTM C150/C150M, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.
  - 1. Alkali content shall not be more than 0.1 percent when tested according to ASTM C114.
- B. Hydrated Lime: ASTM C207, Type S.
- C. Portland Cement-Lime Mix: Packaged blend of portland cement and hydrated lime containing no other ingredients.
- D. Masonry Cement: ASTM C91/C91M.
- E. Mortar Cement: ASTM C1329/C1329M.
- F. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes and complying with ASTM C979/C979M. Use only pigments with a record of satisfactory performance in masonry mortar.
- G. Aggregate for Mortar: ASTM C144.
  - 1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
  - 2. Colored-Mortar Aggregates: Natural sand or crushed stone of color necessary to produce required mortar color.
- H. Aggregate for Grout: ASTM C404.
- I. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C494/C494M, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.
- J. Water: Potable.

## 2.3 REINFORCEMENT

- A. Masonry-Joint Reinforcement: Single 0.187-inch- (4.76-mm-) diameter, hot-dip galvanized carbon steel continuous wire.

## 2.4 TIES AND ANCHORS

- A. General: Ties and anchors shall extend at least 1-1/2 inches (38 mm) into veneer but with at least a 5/8-inch (16-mm) cover on outside face.
- B. Materials: Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated:
  - 1. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A82/A82M, with ASTM A153/A153M, Class B-2 coating.

## 2.5 EMBEDDED FLASHING MATERIALS

- A. Metal Flashing: Provide metal flashing complying with SMACNA's "Architectural Sheet Metal Manual" and as follows:
  - 1. Stainless Steel: ASTM A240/A240M or ASTM A666, Type 304, 0.016 inch (0.40 mm) thick.

## 2.6 CAVITY INSULATION

- A. Extruded Polystyrene Board, Type IV: ASTM C578, Type VI, 40-psi minimum compressive strength; unfaced; maximum flame-spread and smoke-developed indexes of 25 and 450, respectively, per ASTM E84.
  - 1. Match existing thickness to maintain the continuity of the wall plane at repair area.

## 2.7 MISCELLANEOUS MASONRY ACCESSORIES

- A. Compressible Filler: Premolded urethane filler strips complying with ASTM D1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated.
- B. Cellular Plastic Weep/Vent: One-piece, flexible extrusion made from UV-resistant polypropylene copolymer, full height and width of head joint and depth 1/8 inch (3 mm) less than depth of outer wythe, in color selected from manufacturer's standard.

## 2.8 MORTAR AND GROUT MIXES

- A. Mortar for Unit Masonry: Comply with ASTM C270, Proportion Specification. Use Type N unless another type is indicated.
- B. Pigmented Mortar: Use colored cement product or select and proportion pigments with other ingredients to produce color required. Do not add pigments to colored cement products.
  - 1. Pigments shall not exceed 10 percent of portland cement by weight.
  - 2. Pigments shall not exceed 5 percent of masonry cement or mortar cement by weight.

3. Application: Use pigmented mortar for exposed mortar joints.
- C. Colored-Aggregate Mortar: Produce required mortar color by using colored aggregates and natural color or white cement as necessary to produce required mortar color.
  1. Mix to match Architect's sample.
  2. Application: Use colored aggregate mortar for exposed mortar joints.
- D. Grout for Unit Masonry: Comply with ASTM C476.
  1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with TMS 602/ACI 530.1/ASCE 6 for dimensions of grout spaces and pour height.
  2. Provide grout with a slump of 8 to 11 inches (200 to 280 mm) as measured according to ASTM C143/C143M.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION, GENERAL

- A. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

#### 3.2 TOLERANCES

- A. Refer to Section 040500 "Common Work Results for Masonry."

#### 3.3 LAYING MASONRY WALLS

- A. Bond Pattern for Exposed Masonry: Match existing.
- B. Lay solid CMUs with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
- C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.
- D. Anchor masonry veneers to masonry backup with seismic masonry-veneer anchors to comply with the following requirements:
  1. Embed tie sections connector sections and continuous wire in masonry joints.
  2. Locate anchor sections to allow maximum vertical differential movement of ties up and down.

3.4 MASONRY-JOINT REINFORCEMENT

- A. General: Embed reinforcement in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches.

3.5 FLASHING

- A. Replace existing flashing as needed to maintain the continuity of wall drainage. Provide flashing, weeps, vents, and other components that match existing.

3.6 REPAIRING, POINTING, AND CLEANING

- A. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.
- B. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- C. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
  - 1. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes.
  - 2. Clean concrete masonry by applicable cleaning methods indicated in NCMA TEK 8-4A.

3.7 MASONRY WASTE DISPOSAL

- A. Refer to Section 040500 "Common Work Results for Masonry."

END OF SECTION 040120.93

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SECTION 050500 – COMMON WORK RESULTS FOR METALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes common requirements for Division 05 Sections.

1.3 REFERENCES

- A. ASTM International Publications:
  1. A27 "Standard Specification for Steel Castings, Carbon, for General Application"
  2. A36 "Standard Specification for Carbon Structural Steel".
  3. A47 "Standard Specification for Ferritic Malleable Iron Castings"
  4. A48 "Standard Specification for Gray Iron Castings"
  5. A53 "Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless"
  6. A123 "Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products"
  7. A153 "Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware"
  8. A307 "Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength"
  9. A563 "Standard Specification for Carbon and Alloy Steel Nuts"
  10. A615 "Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement"
  11. A780 "Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings"
  12. B633 "Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel"
  13. C1107 "Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink)"
  14. E488 "Standard Test Methods for Strength of Anchors in Concrete and Masonry Elements"
  15. F593 "Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs"
  16. F594 "Standard Specification for Stainless Steel Nuts"
  17. F1554 "Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength"

Federal Specifications (FS) Publications:

18. FS FF S 325
19. FS FF BS75
20. FS TT P664 - Paint 25 (superceeds FS TT-P-664), Zinc Oxide, Alkyd, Linseed Oil Primer for Use Over Hand Cleaned Steel”
21. DOD-P-21035A (formerly MIL-P-21035), Galvanizing Repair Specification

The American Society of Mechanical Engineers (ASME) Publications:

22. A17.1 “Handbook on Safety Code for Elevators and Escalators”
23. B18.2.1 "Square and Hex Bolts and Screws, Inch Series"
24. B18.6.1 "Wood Screws (Inch Series)"
25. B18.6.3 "Machine Screws and Machine Screw Nuts"
26. B18.21.1 "Lock Washers (Inch Series)"
27. B18.22.1 "Plain Washers"

American Welding Society (AWS) Publications:

28. D1.1 "Structural Welding Code - Steel"
29. D1.2 "Structural Welding Code--Aluminum"
30. D1.3 "Structural Welding Code - Sheet Steel"

National Association of Architectural Metal Manufacturers (NAAMM) Publications:

31. "Metal Finishes Manual"

National Ornamental & Miscellaneous Metals Association (NOMMA).

32. “Voluntary Joint Finishes Guide.”

The Society for Protective Coatings (SSPC) Publications:

33. SP - Surface Preparation Standards and Specifications
  - a. SP 3 "Power Tool Cleaning"
34. PA - Paint Application Standards, Guides, and Specifications
  - a. PA 1 “Shop, Field, and Maintenance Painting of Steel”
35. Paint - Paint and Coating Standards and Specifications
  - a. Paint 20 “Zinc-Rich Coating, Type I - Inorganic and Type II - Organic”
  - b. Paint 25 (supersedes FS TT-P-664), Zinc Oxide, Alkyd, Linseed Oil Primer for Use Over Hand Cleaned Steel”

1.4 SUBMITTALS

- A. Specific submittal requirements are specified in subsequent Division 05 Sections.



- B. Samples and Color Charts: The Architect will select and approve colors based on color charts and samples submitted according to the requirements of each Section.

#### 1.5 QUALITY ASSURANCE

- A. Source Limitation: Obtain products of each type and material from a single manufacturer or fabricator.
- B. Engineering Responsibility: Engineer systems by qualified professional engineer legally authorized to practice in jurisdiction where Project is located.
- C. Welding Qualifications: Qualify procedures and personnel according to the following:
  - 1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
  - 2. AWS D1.3/D1.3M, "Structural Welding Code - Sheet Steel."
  - 3. AWS D1.2 "Structural Welding Code - Aluminum"

#### 1.6 MOCK-UPS

- A. Furnish and install products required for mock-ups as specified in other Sections.
- B. Coordinate delivery to assure timely installation.
- C. Maintain mock-ups as standards of quality by which actual work will be compared until construction is complete.
- D. At the Architect's discretion, certain mock-ups may remain as components of the completed Project.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products wrapped or crated to provide protection during transit and job storage.
- B. Provide additional protection to prevent damage to finish of factory- or shop-finished products.
- C. Deliver welded frames with removable spreader bars across bottom of frames to maintain dimensional characteristics.
- D. Label each item, before shipping, to show location, size.
- E. Remove and replace items damaged during shipping and handling.
- F. Store products at building site according to recommendations of fabricator.

## PART 2 - PRODUCTS

### 2.1 PRODUCTS, GENERAL

- A. Source Limitations: Obtain each type of product or group of related products from a single fabricator.
- B. Compatibility: The Contractor is responsible for assuring the compatibility of products used throughout the Project.
- C. Metal Surfaces, General: For metal fabrications exposed to view upon completion of the Work, provide materials selected for their surface flatness, smoothness, and freedom from surface blemishes. Do not use materials whose exposed surfaces exhibit pitting, seam marks, roller marks, rolled trade names, roughness, and, for steel sheet, variations in flatness exceeding those permitted by reference standards for stretcher-leveled sheet.

### 2.2 METALS

- A. Steel Plates, Shapes, and Bars: ASTM A36/A36M.
- B. Stainless Steel:
  - 1. Sheet, Strip, and Plate: ASTM A240/A240M or ASTM A666.
  - 2. Stainless Steel Bars and Shapes: ASTM A276/A276M.
  - 3. Provide Type 304 unless otherwise indicated.
- C. Steel Tubing: ASTM A500/A500M, cold-formed steel tubing.
- D. Steel Pipe: ASTM A53/A53M, Standard Weight (Schedule 40) unless otherwise indicated.
- E. Aluminum Plate and Sheet: ASTM B209 (ASTM B209M), Alloy 6061-T6.
- F. Aluminum Extrusions: ASTM B221 (ASTM B221M), Alloy 6063-T6.
- G. Aluminum-Alloy Rolled Tread Plate: ASTM B632/B632M, Alloy 6061-T6.

### 2.3 GROUT AND ANCHORING CEMENT

- A. Nonshrink Nonmetallic Grout: Premixed, factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107. Provide grout specifically recommended by manufacturer for interior and exterior heavy-duty loading applications of type specified in this Section.
- B. Interior Anchoring Cement: Factory-prepackaged, nonshrink, nonstaining, hydraulic controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound. Use for interior applications only.
- C. Erosion-Resistant Anchoring Cement: Factory-prepackaged, nonshrink, nonstaining, hydraulic controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion

from water exposure without need for protection by a sealer or waterproof coating and is recommended for exterior use by manufacturer.

## 2.4 FASTENERS

- A. General: Provide zinc-coated fasteners for exterior use or where built into exterior walls, interior use in wet or corrosive areas. Select fasteners for the type, grade, and class required for each application and complying with applicable standards.
1. Bolts and Nuts: Regular hexagon head bolts, ASTM A307, Grade A with hex nuts ASTM A563; and, where indicated, flat washers.
  2. Anchor Bolts: ASTM F1554, Grade30
  3. Lag Bolts: Square head type, ASME B18.2.1
  4. Machine Screws: Cadmium plated steel, ASME B18.6.3
  5. Wood Screws: Flat head carbon steel, ASME B18.6.1
  6. Plain Washers: Round, carbon steel, ASME B18.22.1
  7. Lock Washers: Helical, spring type, carbon steel, ASME B18.21.1
  8. Drilled-in Expansion Anchors: Expansion Anchors Complying with FS FF S 325, Group VIII (anchors, expansion), Type I (internally threaded tubular expansion anchor); and machine bolts complying with FS FF BS75, Grade 5.
  9. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E488, conducted by a qualified independent testing agency.
    - a. Interior Use - Material: Carbon-steel components zinc-plated to comply with ASTM B633, Class Fe/Zn 5.
    - b. Exterior Use - Material: Alloy Group 1 or 2 stainless-steel bolts complying with ASTM F593 and nuts complying with ASTM F594.
  10. Toggle Bolts: FS FF-B-588, tumble-wing type, class and style as needed.

Cast-In-Place and Post-Installed Anchors in Concrete: Anchors fabricated from corrosion-resistant materials with capability to sustain, without failure, load imposed within a safety factor of 4, as determined by testing per ASTM E488, conducted by a qualified independent testing laboratory.

## 2.5 FABRICATION

- A. Field Measurements: Where handrails and railings are indicated to fit to other construction, check actual dimensions of other construction by accurate field measurements before fabrication; show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delay of Work.
1. Where field measurements cannot be made without delaying the Work, guarantee dimensions and proceed with fabrication of products without field measurements. Coordinate other construction to ensure that actual dimensions correspond to guaranteed dimensions.

- B. Use materials of size, thickness, and shapes indicated but not less than that needed to comply with performance requirements indicated. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of each metal fabrication.
- C. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation. Cut, reinforce, drill and tap miscellaneous metal work as indicated to receive finish hardware, screws, and similar items.
1. Provide complete assemblies, including metal framing, hangers, struts, railings, clips, brackets, bearing plates, and other components necessary to support and anchor work to supporting structure.
  2. Join components by welding unless otherwise indicated.
  3. Use connections that maintain structural value of joined pieces.
  4. Assemble fabrications<sup>0</sup> under shop conditions to greatest extent possible.
  5. Disassemble units only as necessary for shipping and handling limitations.
  6. Clearly mark units for reassembly and coordinated installation.
  7. Cut, drill, and punch metals cleanly and accurately.
  8. Remove burrs and ease edges to a radius of approximately 1/32 inch (1 mm) unless otherwise indicated.
  9. Remove sharp or rough areas on exposed surfaces.
  10. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
  11. Form exposed work with accurate angles and surfaces and straight edges.
  12. Welded connections:
    - a. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
    - b. Obtain fusion without undercut or overlap.
    - c. Remove welding flux immediately.
    - d. Weld exposed corners and seams continuously unless otherwise indicated.
    - e. At exposed connections, finish exposed welds to comply with NOMMA's "Voluntary Joint Finish Standards" for Finish #2 - Completely sanded joint with some undercutting and pinholes.
    - f. At concealed connections, comply with NOMMA's "Voluntary Joint Finish Standards" for Finish #4 – good quality, uniform undressed weld with minimal spatter.”

13. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible.
14. Where exposed fasteners are required, use Phillips flat-head (countersunk) screws or bolts unless otherwise indicated.
15. Locate joints where least conspicuous
16. Allow for thermal movement resulting from the following maximum change (range) of exterior metalwork in ambient temperature in the design, fabrication, and installation of installed metal assemblies to prevent buckling, opening up of joints, and overstressing of welds and fasteners. Base design calculations on actual surface temperatures of metals due to both solar heat gain and nighttime sky heat loss. Temperature Change (Range): 120 Degrees F., ambient; 130 degrees F., material surfaces.

## 2.6 FINISHES

- A. Comply with NAAMM "Metal Finishes Manual" for "Architectural and Metal Products" for recommendations relative to application and designations of finishes.
- B. Refer to requirements of each subsequent Division 05 Section for specific finish requirements.
- C. Review painting specifications for finish paint systems. Coordinate surface preparations of steel and type of primer used with specifications and the manufacturer's recommendations to insure compatibility.
- D. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within ½ of the range of approved samples. Noticeable variations in the same piece are not acceptable. Variation in appearance of other components is acceptable if they are within range of approved samples and they are assembled or installed to minimize contract.
- E. Galvanizing: For those items indicated for galvanizing after fabrication, apply zinc-coating by the hot-dip process in compliance with the following requirements:
  1. ASTM A153 for galvanizing iron and steel hardware.
  2. ASTM A123 for galvanizing iron and steel products made of uncoated rolled, pressed, and forged shapes, plates, bars, and strip 0.0299 inch thick and heavier.
- F. Preparation for Shop Priming: Prepare uncoated ferrous metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed metal fabrications: Interiors (SSPC Zone 1A): SSPC SP 6/NACE No. 3, "Commercial Blast Cleaning".
- G. Shop Primer for Ferrous Metal: Manufacturer's or fabricator's standard, fast-curing, lead and chromate-free, universal modified alkyd primer selected for good resistance to normal atmospheric corrosion, for compatibility with finish paint systems indicated, and for capability to provide a sound foundation for field-applied topcoats despite prolonged exposure complying with performance requirements of SSPC-Paint 25.

1. Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized finish or to be embedded in concrete, sprayed-on fireproofing, or masonry, unless otherwise indicated. Comply with requirements of SSPC-PA1 "Paint Application Specification No. 1" for shop painting, and at rate recommended by SSPC to provide a minimum dry film thickness of 1.5 mils. Stripe paint all edges, corners, crevices, bolts, welds, and sharp edges.
- H. Galvanizing Repair Paint for Field Welds: High-zinc-dust-content paint for re-galvanizing field welds in galvanized steel, with dry film containing not less than 94 percent zinc dust by weight, and complying with DOD-P-21035 or SSPC Paint 20.
- I. Bituminous Paint: Cold-applied asphalt mastic containing no asbestos fibers and complying with ASTM D1187.

### PART 3 - EXECUTION

#### 3.1 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) recommended by fabricator for optimum results. Do not install products environmental conditions outside manufacturer's absolute limits.

#### 3.2 EXAMINATION

- A. Examine surfaces and field conditions under which Work is to be performed.
- B. Document conditions of substrates which are detrimental to proper installation and timely completion of work and report them to the Construction Manager.
- C. Verify all dimensions taken at job site affecting the Work.

#### 3.3 PREPARATION

- A. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry construction. Deliver such items to Project site in time for installation.
- B. Separate incompatible materials to prevent deterioration using means recommended by the product fabricator.
- C. Beginning installation will be considered the Installer's acceptance of existing conditions.

#### 3.4 INSTALLATION, GENERAL

- A. Install products according to the fabricator's instructions to achieve the work results indicated in the Contract Documents.

- B. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing to in-place construction; include threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws, and other connectors as required.
- C. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installation. Set items accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- D. Provide temporary bracing or anchors in formwork for items that are to be built into concrete masonry or similar construction.
- E. Field Welding: Comply with AWS Code for procedures of manual shielded metal-arc welding, appearance and quality of welds made, methods used in correctly welding work, and the following:
  - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
  - 2. Obtain fusion without undercut or overlap.
  - 3. Remove welding flux immediately.
  - 4. At exposed connections, finish exposed welds to comply with NOMMA's "Voluntary Joint Finish Standards" for Finish #2 - Completely sanded joint with some undercutting and pinholes.
  - 5. At concealed connections, comply with NOMMA's "Voluntary Joint Finish Standards" for Finish #4 – good quality, uniform undressed weld with minimal spatter.”
- F. Separate incompatible materials to prevent deterioration using means recommended by the product manufacturer.
  - 1. Where metal is in contact with dissimilar metals, protect against galvanic action by painting contact surfaces with materials recommended by manufacturer for this purpose or installing nonconductive spacers.
  - 2. Where metal is in contact with concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing work to in-place construction.

### 3.5 FINISHING

- A. Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting to comply with SSPC PA 1 requirements for touch-up of field painted surfaces.
  - 1. Apply by brush or spray to provide a minimum dry film thickness of 2.0 mils.

- B. For galvanized surfaces clean welds, bolted connections and abraded areas and apply galvanizing repair paint to comply with ASTM A780.
- C. Touch-Up of Pre-Applied Finishes: When acceptable to the Architect, perform touch up of factory-applied or shop-applied finishes in the field using appropriate materials. Products that cannot be satisfactorily touched up in the field shall be replaced.
- D. Field Finishing: Refer to painting requirements in Division 09 for field-applied finishing systems.
- E. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

### 3.6 PROTECTION AND CLEANING

Touch-Up Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material.

For Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and apply galvanizing repair paint to comply with ASTM A780.

- A. Protect installed work using adequate and suitable means during and after installation until accepted by owner.
- B. Remove, repair or replace materials that have been damaged prior to final acceptance.
- C. Comply with Division 01 requirements for progress cleaning and final cleaning procedures

END OF SECTION 050500



## SECTION 055000 – METAL FABRICATIONS

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Loose Steel Lintels

#### 1.2 REFERENCES

- A. Refer to Section 050500 “Common Work Results for Metals.”

#### 1.3 SUBMITTALS

- A. Product Data for each product specified.
- B. Include supporting product data for products used in miscellaneous metal fabrications, including paint products and grout.
- C. Shop Drawings detailing fabrication and erection of each metal fabrication indicated. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items. Provide templates for anchors and bolts specified for installation under other sections.
- D. Samples representative of materials and finished products as may be requested by Owner’s Representative.

### PART 2 - PRODUCTS

#### 2.1 FERROUS METALS

- A. Metal Surfaces, General: Refer to Section 050500 “Common Work Results for Metals.”
- B. Steel Plates, Shapes, and Bars: ASTM A36
- C. Steel Pipe: ASTM A53
1. Black finish, unless otherwise indicated.
  2. Galvanized finish for exterior installations, unless shown to receive special coatings.
  3. Type E, OR S, Grade B,  $F_y = 35$  KSI, unless otherwise indicated, or another weight, type, and grade required by structural loads.
- D. Gray Iron Castings: ASTM A48, Class 30
- E. Malleable Iron Castings: ASTM A47, Grade 32510

- F. Stainless-Steel Sheet, Strip, Plate, and Flat Bars: ASTM A 666, Type 316.
- G. Brackets, Flanges and Anchors: Cast or formed metal of the same type material and finish as supported rails, unless otherwise indicated.
- H. Concrete Inserts: Threaded or wedge type; galvanized ferrous castings, either malleable iron, ASTM A47, or cast steel, ASTM A27. Provide bolts, washers, and shims as required, hot-dip galvanized per ASTM A153.
- I. Welding Rods: Select in accordance with AWS Specifications for the metal alloy to be welded.

## 2.2 FASTENERS

- A. Refer to Section 050500 – Common Work Results for Metals.

## 2.3 GROUT AND ANCHORING CEMENT

- A. Refer to Section 050500 – Common Work Results for Metals.

## 2.4 PAINT

- A. Refer to Section 050500 – Common Work Results for Metals.

## 2.5 LOOSE BEARING AND LEVELING PLATES

- A. Provide loose bearing and leveling plates for steel items bearing on masonry or concrete construction, made flat, free from warps or twists, and of required thickness and bearing area. Drill plates to receive anchor bolts and for grouting as required. Galvanize after fabrication.

## 2.6 LOOSE STEEL LINTELS

- A. Fabricate loose structural steel lintels from steel angles and shapes of size indicated for openings and recesses in masonry walls and partitions at locations indicated. Weld adjoining members together to form a single unit where indicated.
- B. Hot-dipped galvanize loose steel lintels located in exterior walls, or interior walls at Pool Room, Pool Equipment Room, Kitchen, and Commercial Laundry Room.
- C. Size loose lintels for equal bearing of one inch per foot of clear span but not less than 8 inches bearing at each side of openings, if not indicated on Drawings.

## 2.7 MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Provide steel framing and supports for applications indicated or which are not a part of structural steel framework, as required to complete work.

- B. Fabricate units to sizes, shapes, and profiles indicated and required to receive adjacent other construction retained by framing and supports. Fabricate from structural steel shapes, plates, and steel bars of welded construction using mitered joints for field connection. Cut, drill, and tap units to receive hardware, hangers, and similar items.
- C. Equip units with integrally welded anchors for casting into concrete or building into masonry. Furnish inserts if units must be installed after concrete is placed. Spacing of anchors shall not be more than 24" o.c.

## 2.8 MISCELLANEOUS STEEL TRIM

- A. Provide shapes and sizes indicated for profiles shown. Unless otherwise indicated, fabricate units from structural steel shapes, plates, and steel bars, with continuously welded joints and smooth exposed edges. Use concealed field splices wherever possible. Provide cutouts, fittings, and anchorages as required for coordination of assembly and installation with other work.
- B. Galvanize miscellaneous framing and supports in exterior locations and where shown to be painted.

## 2.9 STEEL AND IRON FINISHES

- A. Galvanizing: For those items indicated for galvanizing, apply zinc-coating by the hot-dip process in compliance with the following requirements:
  - 1. ASTM A153 for galvanizing iron and steel hardware.
  - 2. ASTM A123 for galvanizing both fabricated and unfabricated iron and steel products made of uncoated rolled, pressed, and forged shapes, plates, bars, and strip 0.0299 inch thick and heavier.
- B. Paint Systems: Review painting specifications for finish paint systems. Coordinate surface preparations of steel and type of primer used with specifications and the manufacturer's recommendations to insure compatibility.
- C. Preparation for Shop Priming: Prepare uncoated ferrous metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed metal fabrications: Interiors (SSPC Zone 1A): SSPC SP 3 "Power Tool Cleaning".
- D. Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized finish or to be embedded in concrete, sprayed-on fireproofing, or masonry, unless otherwise indicated. Comply with requirements of SSPC-PA1 "Paint Application Specification No. 1" for shop painting, and at rate recommended by SSPC to provide a minimum dry film thickness of 1.5 mils. Stripe paint all edges, corners, crevices, bolts, welds, and sharp edges.

### PART 3 - EXECUTION

#### 3.1 PROJECT/SITE CONDITIONS

- A. Field Measurements: Check actual locations of walls and other construction to which metal fabrications must fit, by accurate field measurements before fabrication; show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delay of Work.

#### 3.2 COORDINATION

- A. Coordinate installation of anchorages for metal fabrications. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

#### 3.3 PREPARATION

- A. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installation of anchorages, including concrete inserts, sleeves, anchor bolts, and miscellaneous items having integral anchors that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to project site.
- B. Set sleeves in concrete with tops flush with finish surface elevations; protect sleeves from water and concrete entry.

#### 3.4 INSTALLATION

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction; include threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws, and other connectors as required.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installation of miscellaneous metal fabrications. Set metal fabrication accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- C. Provide temporary bracing or anchors in formwork for items that are to be built into concrete masonry or similar construction.
- D. Field Welding: Refer to Section 050500 – Common Work Results for Metals.

3.5 INSTALLING MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on shop drawings, if any.
- B. Anchor supports securely to and rigidly brace from building structure.
- C. Support steel girders on solid grouted masonry, concrete, or steel pipe columns. Secure girders with anchor bolts embedded in grouted masonry or concrete or with bolts through top plates of pipe columns.
- D. Where grout space under bearing plates is indicated at girders supported on concrete or masonry, install as specified above for setting and grouting bearing and leveling plates.

3.6 SETTING BEARING AND LEVELING PLATES

- A. Clean concrete and masonry bearing surfaces of any bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of plates.
- B. Set leveling and bearing plates on wedges, shims, or leveling nuts. After the bearing members have been positioned and plumbed, tighten the anchor bolts. Do not remove wedges or shims, but if protruding, cut off flush with the edge of the bearing plate before packing with grout.
- C. Use nonmetallic nonshrink grout, unless otherwise indicated.
- D. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

3.7 TOUCH-UP PAINTING:

- A. Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting to comply with SSPC-PA1 requirements for touch-up of field painted surfaces.
- B. Apply by brush or spray to provide a minimum dry film thickness of 2.0 mils.
- C. For galvanized surfaces clean welds, bolted connections and abraded areas and apply galvanizing repair paint to comply with ASTM A780.

END OF SECTION 055000

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SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Wood blocking and nailers for support of other Work.

1.2 DEFINITIONS

- A. Boards or Strips: Lumber of less than 2 inches nominal size in least dimension.
- B. Dimension Lumber: Lumber of 2 inches nominal or greater size but less than 5 inches nominal size in least dimension.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
  1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
  2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

1.4 INFORMATIONAL SUBMITTALS

- A. Evaluation Reports: For the following, from ICC-ES:
  1. Preservative-treated wood.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Stack lumber flat with spacers beneath and between each bundle to provide air circulation. Protect lumber from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

## PART 2 - PRODUCTS

### 2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
  - 1. Factory mark each piece of lumber with grade stamp of grading agency.
  - 2. Dress lumber, S4S, unless otherwise indicated.
- B. Maximum Moisture Content of Lumber 15 percent for 2-inch nominal thickness or less, 19 percent for more than 2-inch nominal (38-mm actual) thickness unless otherwise indicated.

### 2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. Preservative Treatment by Pressure Process: AWP A U1; Use Category UC2 Use Category UC3b for exterior construction not in contact with ground, and Use Category UC4a for items in contact with ground.
  - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat all miscellaneous carpentry unless otherwise indicated.

### 2.3 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
  - 1. Blocking.
  - 2. Nailers.
- B. Dimension Lumber Items: Construction or No. 2 grade lumber of any species.
- C. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.



## 2.4 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
  - 1. Where carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners of Type 304 stainless steel.
- B. Nails, Brads, and Staples: ASTM F1667.
- C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
- D. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC01, ICC-ES AC58, ICC-ES AC193, or ICC-ES AC308 as appropriate for the substrate.
  - 1. Material: Stainless steel with bolts and nuts complying with ASTM F593 and ASTM F594, Alloy Group 1 or 2 (ASTM F738M and ASTM F836M, Grade A1 or A4).

## 2.5 MISCELLANEOUS MATERIALS

- A. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, butyl rubber or rubberized-asphalt compound, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than 0.025 inch.

## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- B. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry accurately to other construction. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- C. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- D. Comply with AWWA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
  - 1. Use inorganic boron for items that are continuously protected from liquid water.
  - 2. Use copper naphthenate for items not continuously protected from liquid water.

- E. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- F. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
  - 1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
  - 2. ICC-ES evaluation report for fastener.
- G. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

### 3.2 INSTALLATION OF WOOD BLOCKING AND NAILERS

- A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.

### 3.3 PROTECTION

- A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.
- B. Protect miscellaneous rough carpentry from weather. If, despite protection, miscellaneous rough carpentry becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061053

SECTION 07 01 50.19 - PREPARATION FOR REROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

- 1. Full tear-off of entire roof system.
- 2. Removal of flashings and counterflashings.

B. Related Requirements:

- 1. Section 011000 "Summary" for use of premises.
- 2. Section 013523 "Safety, Health, and Environment"
- 3. Section 015000 "Temporary Facilities and Controls" for temporary construction and environmental-protection measures for reroofing preparation.
- 4. Section 028221 "Roofing Abatement."
- 5. Section 070500 "Common Work Results for Thermal and Moisture Protection."

C. Related Work Specified Elsewhere:

- 1. Section 028221 "Roofing Abatement."

1.3 DEFINITIONS

- A. Full Roof Tear-off: Removal of existing roofing system down to existing roof deck
- B. Roofing Terminology: Definitions in ASTM D1079 and glossary of NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" apply to work of this Section.

1.4 PREINSTALLATION MEETINGS

- A. Preliminary Roofing Conference: Before starting removal Work, conduct conference at Project site.
  - 1. Meet with Owner, Architect, testing and inspecting agency representative, roofing Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
  - 2. Review methods and procedures related to roofing tear-off, including, but not limited to, the following:

- a. Reroofing preparation, including roofing system manufacturer's written instructions.
- b. Existing roof drains and roof drainage during each stage of reroofing, and roof-drain plugging and plug removal.
- c. Construction schedule and availability of materials, Installer's personnel, equipment, and facilities needed to avoid delays.
- d. Existing roof deck conditions requiring Architect notification.
- e. Condition and acceptance of existing roof deck.
- f. Structural loading limitations of roof deck during reroofing.
- g. Base flashings, special roofing details, drainage, penetrations, equipment curbs, and condition of other construction that affect reroofing.
- h. Governing regulations and requirements for insurance and certificates if applicable.
- i. Existing conditions that may require Architect notification before proceeding.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Field Test Reports:
  1. Fastener pull-out test report.
- C. Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces, that might be misconstrued as having been damaged by reroofing operations.
  1. Submit before Work begins.

1.6 FIELD CONDITIONS

- A. Existing Roofing System: Built-up roofing.
- B. Owner will occupy portions of building immediately below reroofing area.
  1. Conduct reroofing so Owner's operations are not disrupted.
  2. Provide Owner with not less than 72 hours' written notice of activities that may affect Owner's operations.
  3. Coordinate work activities daily with Owner so Owner has adequate advance notice to place protective dust and water-leakage covers over sensitive equipment and furnishings, shut down HVAC and fire-alarm or -detection equipment if needed, and evacuate occupants from below work area.
- C. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.
- D. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.

- E. Conditions existing at time of inspection for bidding will be maintained by Owner as far as practical.
  - 1. Construction Drawings for existing roofing system are provided for Contractor's convenience and information, but they are not a warranty of existing conditions. They are intended to supplement rather than serve in lieu of Contractor's own investigations. Contractor is responsible for conclusions derived from existing documents.
- F. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.
  - 1. Remove only as much roofing in one day as can be made watertight in the same day.
- G. Hazardous Materials: Asbestos-containing materials will be encountered in the Work. Abatement is work of this Contract. Refer to Section 028221 "Roofing Abatement."

## PART 2 - PRODUCTS

### 2.1 INFILL AND REPLACEMENT MATERIALS

- A. Wood blocking, curbs, and nailers are specified in Section 061053 Miscellaneous Rough Carpentry."
- B. Fasteners: Factory-coated steel fasteners with metal or plastic plates listed in FM Approvals' RoofNav, and acceptable to new roofing system manufacturer.

### 2.2 AUXILIARY REROOFING MATERIALS

- A. General: Use auxiliary reroofing preparation materials recommended by roofing system manufacturer for intended use and compatible with components of new roofing system.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Test existing roof drains to verify that they are not blocked or restricted.
  - 1. Immediately notify Architect of any blockages or restrictions.
- B. Coordinate with Owner to shut down air-intake equipment in the vicinity of the Work.
  - 1. Cover air-intake louvers before proceeding with reroofing work that could affect indoor air quality or activate smoke detectors in the ductwork.
- C. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.

- D. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday.
  - 1. Prevent debris from entering or blocking roof drains and conductors.
    - a. Use roof-drain plugs specifically designed for this purpose.
    - b. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.
  - 2. If roof drains are temporarily blocked or unserviceable due to roofing system removal or partial installation of new roofing system, provide alternative drainage method to remove water and eliminate ponding.

### 3.2 \ROOF TEAR-OFF

- A. Notify Owner each day of extent of roof tear-off proposed for that day and obtain authorization to proceed.
- B. Lower removed roofing materials to ground using dust-tight chutes or other acceptable means of removing materials from roof areas.
- C. Full Roof Tear-off: Remove existing roofing and other roofing system components down to the existing roof deck.
  - 1. Remove roof insulation.
  - 2. Remove base flashings and counter flashings.
  - 3. Remove copings.
  - 4. Remove flashings at pipes, curbs, mechanical equipment, and other penetrations.
  - 5. Remove roof drains indicated on Drawings to be removed.
  - 6. Remove wood blocking, and nailers.
  - 7. Remove fasteners from deck.

### 3.3 DECK PREPARATION

- A. Inspect deck after tear-off of roofing system.
- B. If broken or loose fasteners that secure deck panels to one another or to structure are observed, or if deck appears or feels inadequately attached, immediately notify Owner.
  - 1. Do not proceed with installation until directed by Owner.
- C. If deck surface is unsuitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Owner.
  - 1. Do not proceed with installation until directed by Owner.
- D. Provide additional deck securement as required.

3.4 BASE FLASHING REMOVAL

- A. Remove existing base flashings.
  - 1. Clean substrates of contaminants, such as asphalt, sheet materials, dirt, and debris.

3.5 FASTENER PULL-OUT TESTING

- A. Retain independent testing and inspecting agency to conduct fastener pull-out tests according to SPRI FX-1, and submit test report to Architect and roofing manufacturer before installing new roofing system.
  - 1. Obtain roofing manufacturer's approval to proceed with specified fastening pattern.
    - a. Roofing manufacturer may furnish revised fastening pattern commensurate with pull-out test results.

3.6 DISPOSAL

- A. Collect demolished materials and place in containers.
  - 1. Promptly dispose of demolished materials.
  - 2. Do not allow demolished materials to accumulate on-site.
  - 3. Storage or sale of demolished items or materials on-site is not permitted.
- B. Transport and legally dispose of demolished materials off Owner's property.

END OF SECTION 07 01 50.19

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SECTION 070500 – COMMON WORK RESULTS FOR THERMAL AND MOISTURE PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes common requirements for Division 07 Sections.
- B. Related Sections:
  - 1. Section 055000 “Metal Fabrications” for supplementary metal framing.
  - 2. Section 061000 “Rough Carpentry” for wood blocking, furring, and supplementary support requirements.
  - 3. Section 080500 “Common Work Results for Openings.”
  - 4. Division 09 Painting Sections for field-finishing requirements.

1.3 REFERENCES

- A. Refer to Division 01 and the requirements of each Division 07 Section, and as follows:
- B. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- C. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
- D. Where copies of standards are needed to perform a required construction activity, obtain copies directly from a valid publication source

1.4 SUBMITTALS

- A. Schedule and manage submittals as necessary for proper sequencing and performance of the Work of this Division and related Divisions. Refer to subsequent Sections for specific submittal requirements.
- B. Color Coordination: Exposed metal components shall match each other to the satisfaction of the Architect and the Owner’s Representative, regardless of the source. The suppliers responsible for the various exposed metal components shall coordinate sample submittals to assure ample time for review and comparisons of samples to meet this requirement.

1.5 QUALITY ASSURANCE

- A. Engage experienced installers who have been trained and approved by the manufacturers of products and systems specified.
- B. Provide factory-trained field representatives to monitor installations, start-up, field quality testing, and demonstration procedures.

1.6 COORDINATION

- A. Coordinate the various trades as necessary for producing work that complies with the specified requirements.
- B. Conduct meetings and perform such procedures as necessary for the installation and interfaces of

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products wrapped or crated to provide protection during transit and job storage.
- B. Provide additional protection to prevent damage to finish of factory-finished products.
- C. Label each item, before shipping, to identify contents and special instructions.
- D. Remove and replace items damaged during shipping and handling.
- E. Store products at building site according to manufacturer recommendations.
- F. Provide adequate spaces between stacked items to permit air circulation.
- G. Protect liquid components from exposure to temperatures outside the limits recommended by the manufacturer.
- H. Protect insulation and other absorbent materials from exposure to weather and humidity levels outside the ranges recommended by the manufacturer.

PART 2 - PRODUCTS

2.1 PRODUCTS, GENERAL

- A. Source Limitations: Obtain each type of product or group of related products from a single manufacturer or from manufacturers approved.
- B. Compatibility: The Contractor is responsible for assuring the compatibility of products used throughout the Project.

2.2 FABRICATION

- A. Field Measurements: Verify sizes by field measurements before fabrication.

2.3 FINISHES

- A. Refer to requirements of each subsequent Division 07 Section for specific finish requirements.

PART 3 - EXECUTION

3.1 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) recommended by manufacturer for optimum results. Do not install products environmental conditions outside manufacturer's absolute limits.

3.2 EXAMINATION

- A. Examine surfaces and field conditions under which Work is to be performed.
- B. Document conditions of substrates which are detrimental to proper installation and timely completion of work and report them to the Construction Manager.
- C. Verify all dimensions taken at job site affecting the Work.

3.3 PREPARATION

- A. Prepare substrates according to manufacturers' written instructions.
- B. Coordinate and furnish anchorages, setting drawings, and instructions for installing assemblies. Provide fasteners of material, type, and size to suit type of construction indicated and to provide for secure attachment.
- C. Comply with manufacturer's written instructions for storing, handling, and installing assemblies and materials unless more stringent requirements are indicated.
- D. Assure that openings are properly framed and recommended blocking is installed.
- E. Flash openings and penetrations.
- F. Separate incompatible materials to prevent deterioration using means recommended by the product manufacturer.
  - 1. Where metal is in contact with dissimilar metals, protect against galvanic action by painting contact surfaces with materials recommended by manufacturer for this purpose or installing nonconductive spacers.
  - 2. Where metal is in contact with concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.
  - 3. Set continuous sill members and flashing in full sealant beds to produce weather-tight installation.

3.4 INSTALLATION

- A. Beginning installation will be considered the Installer's acceptance of existing conditions.

- B. Install products according to the manufacturer's instructions to achieve the work results indicated in the Contract Documents.

### 3.5 FINISHING

- A. Field Finishing: Refer to Division 09 Painting requirements for field-applied finishing systems.
- B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

### 3.6 REPAIRS AND REPLACEMENTS

- A. Repair products showing evidence of deterioration or damage during observations and inspections. Perform repairs according to the manufacturer's instructions. Arrange for Manufacturer's authorized field representative to inspect and approve repairs made. Arrange for testing of repaired products when required by Authorities Having Jurisdiction.
- B. Touch-Up of Pre-Applied Finishes: When acceptable to the Architect, perform touch up of factory-applied or shop-applied finishes in the field using appropriate materials.
  - 1. Products that cannot be satisfactorily touched up in the field shall be replaced.
- C. When repairs cannot be made to the Architect's satisfaction, they shall be replaced at no additional cost to the Owner.

### 3.7 PROTECTION AND CLEANING

- A. Protect installed work using adequate and suitable means during and after installation until accepted by owner.
- B. Remove, repair or replace materials that have been damaged prior to final acceptance.
- C. Comply with Division 01 requirements for progress cleaning and final cleaning procedures.

### 3.8 DEMONSTRATION AND TRAINING

- A. Schedule demonstration and training activities to advise Owner's personnel in troubleshooting, notification, and maintenance of systems specified in this Division.

END OF SECTION 070500

SECTION 071900 - WATER REPELLENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes penetrating water-repellent treatments vertical and horizontal masonry surfaces.
- B. Related Requirements:
  - 1. Section 070500 "Common Work Results for Thermal and Moisture Protection."

1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include manufacturer's printed statement of VOC content.
  - 2. Include manufacturer's recommended number of applications for each type of substrate and spreading rate for each separate coat.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Applicator.
- B. Product Certificates: For each type of water repellent.
- C. Preconstruction Test Reports: For water-repellent-treated substrates.
- D. Field quality-control reports.
- E. Sample Warranty: For special warranty.

1.5 QUALITY ASSURANCE

- A. Applicator Qualifications: An employer of workers trained and approved by manufacturer.
- B. Mockups: Prepare mockups of each required water repellent on each type of substrate required to establish quality standards for materials and execution.

1. Locate mockups on existing surfaces in locations that enable viewing under same conditions as the completed Work.
  - a. Size: 10 sq. ft. each.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

#### 1.6 FIELD CONDITIONS

- A. Limitations: Proceed with application only when the following existing and forecasted weather and substrate conditions permit water repellents to be applied according to manufacturers' written instructions and warranty requirements:
  1. Masonry surfaces and mortar have cured for not less than 28 days.
  2. Ambient temperature is above 40 deg F (4.4 deg C) and below 100 deg F (37.8 deg C) and will remain so for 24 hours.
  3. Substrate is not frozen and substrate-surface temperature is above 40 deg F (4.4 deg C) and below 100 deg F (37.8 deg C).
  4. Rain or snow is not predicted within 24 hours.
  5. Not less than seven days have passed since surfaces were last wet.
  6. Windy conditions do not exist that might cause water repellent to be blown onto vegetation or surfaces not intended to be treated.

#### 1.7 WARRANTY

- A. Special Warranty: Manufacturer's written agreement to repair or replace materials that fail to maintain water repellency specified in "Performance Requirements" Article within specified warranty period.
  1. Warranty Period: Twenty years from date of Substantial Completion.

### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

- A. Water Absorption: Minimum 90 percent reduction of water absorption after 24 hours for treated compared to untreated specimens when tested according to the following:
  1. Cast Stone: ASTM C1195.
  2. Concrete Masonry Units: ASTM C140.
  3. Clay Brick: ASTM C67.
  4. Natural Stone: ASTM C97/C97M.

- B. Water-Vapor Transmission:
  - 1. One hundred percent water-vapor transmission of treated compared to untreated control specimens, according to ASTM D1653.
- C. Water Penetration and Leakage through Masonry: One hundred percent reduction in leakage rate of treated compared to untreated control specimens, according to ASTM E514/E514M.
- D. Durability: Maximum 5 percent loss of water-repellent performance after 2500 hours of weathering according to ASTM G154 compared to water-repellent-treated specimens before weathering.

## 2.2 PENETRATING WATER REPELLENTS

- A. Penetrating Water Repellent and Corrosion Inhibitor: Clear, containing 100 percent active content of modified silane water repellent and corrosion inhibitor, with 400 g/L or less of VOCs.
  - 1. Protectosil Chem-Trete BSM-400 by Evonik Industries.
  - 2. MasterProtect H1000 by Master Builders Solutions.
  - 3. Sikagard 701-W by Sika Corporation.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements and conditions affecting performance of the Work.
  - 1. Verify that surfaces are clean and dry according to water-repellent manufacturer's requirements. Check moisture content in three representative locations by method recommended by manufacturer.
  - 2. Verify that there is no efflorescence or other removable residues that would be trapped beneath the application of water repellent.
  - 3. Verify that required repairs are complete, cured, and dry before applying water repellent.
- B. Test pH level according to water-repellent manufacturer's written instructions to ensure chemical bond to silica-containing or siliceous minerals.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. New Construction and Repairs: Allow concrete and other cementitious materials to age before application of water repellent, according to repellent manufacturer's written instructions.

- B. Cleaning: Before application of water repellent, clean substrate of substances that could impair penetration or performance of product according to water-repellent manufacturer's written instructions and as follows:
  - 1. Precast Concrete, Cast Stone, and Concrete Unit Masonry: Remove oil, curing compounds, laitance, and other substances that inhibit penetration or performance of water repellents according to ASTM E1857.
  - 2. Clay Brick Masonry: ASTM D5703.
- C. Coordination with Mortar Joints: Do not apply water repellent until pointing mortar for joints adjacent to surfaces receiving water-repellent treatment has been installed and cured.
- D. Coordination with Sealant Joints: Do not apply water repellent until sealants for joints adjacent to surfaces receiving water-repellent treatment have been installed and cured.
  - 1. Water-repellent work may precede sealant application only if sealant adhesion and compatibility have been tested and verified using substrate, water repellent, and sealant materials identical to those required.

### 3.3 APPLICATION

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect the substrate before application of water repellent and to instruct Applicator on the product and application method to be used.
- B. Apply coating of water repellent on surfaces to be treated using method appropriate for site conditions as recommended by the product manufacturer's field representative to the point of saturation. Apply coating in dual passes of uniform, overlapping strokes. Remove excess material; do not allow material to puddle beyond saturation.
  - 1. Precast Concrete and Cast Stone: At Contractor's option, first application of water repellent may be completed before installing units. Mask mortar and sealant bond surfaces to prevent water repellent from migrating onto joint surfaces. Remove masking after repellent has cured.
- C. Apply a second saturation coating, repeating first application. Comply with manufacturer's written instructions for limitations on drying time between coats and after rainstorm wetting of surfaces between coats. Consult manufacturer's technical representative if written instructions are not applicable to Project conditions.

### 3.4 FIELD QUALITY CONTROL

- A. Testing of Water-Repellent Material: Owner reserves the right to invoke the following procedure at any time and as often as Owner deems necessary during the period when water repellent is being applied:
  - 1. Contractor shall engage the services of a qualified testing agency to sample water-repellent material being used. Samples of material delivered to Project site will be taken, identified, sealed, and certified in presence of Contractor.



2. Testing agency will perform tests for compliance of water-repellent material with product requirements.
  3. Owner may direct Contractor to stop applying water repellents if test results show material being used does not comply with product requirements. Contractor to remove noncomplying material from Project site, pay for testing, and correct deficiency of surfaces treated with rejected materials, as approved by Architect.
- B. Coverage Test: In the presence of Architect, hose down a dry, repellent-treated surface to verify complete and uniform product application. A change in surface color will indicate incomplete application.
1. Notify Architect seven days in advance of the dates and times when surfaces will be tested.
  2. Reapply water repellent until coverage test indicates complete coverage.
- C. Post-Application Rilem Tube Testing: Approved manufacturer's field representative shall schedule and supervise post-application Rilem tube testing procedures to verify proper application in accordance with the specified warranty terms.

### 3.5 CLEANING

- A. Immediately clean water repellent from adjoining surfaces and surfaces soiled or damaged by water-repellent application as work progresses. Correct damage to work of other trades caused by water-repellent application, as approved by Architect.
- B. Comply with manufacturer's written cleaning instructions.

END OF SECTION 071900

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SECTION 07 24 19 - WATER DRAINAGE EXTERIOR INSULATION AND FINISH SYSTEMS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes Water Management Exterior Insulation and Finish Coating Systems Application with secondary air/moisture barrier system as described and specified herein. Exterior insulation and finish system shall be composed of the following components:

1. A substrate approved by the applicator and manufacturer's field representative.
2. An approved air/water-resistive barrier compatible with substrate and with adhesively attached insulation system.
3. Drainage system.
4. Thermal insulation board adhesively attached to the air/water resistive barrier.
5. Polyethylene, self-adhering flashing tape or fluid applied / reinforced flexible flashing compatible with substrate coatings.
6. A reinforced base coat applied to the insulation board.
7. A 100% acrylic based textured coating applied over the reinforced base coat.
8. Approved sealants are required at all dissimilar materials as well as EIFS to EIFS expansion and control joints.

B. Related Sections:

1. Section 07 05 00 "Common Work Results for Thermal and Moisture Protection."
2. Section 07 62 00 "Sheet Metal Flashing and Trim"
3. Section 07 92 00 "Joint Sealants"

1.02 REFERENCES

A. ASTM International Publications:

1. B117 "Standard Practice for Operating Salt Spray (Fog) Apparatus"
2. C150 "Standard Specification for Portland Cement"
3. C1063 "Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster"

4. C1177/C1177M "Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing"
5. C1382 Test Method for Determining Tensile Adhesion Properties of Sealants When Used in Exterior Insulation and Finish Systems (EIFS) Joints"
6. C1397 "Standard Practice for Application of Class PB Exterior Insulation and Finish Systems"
7. C1481 "Standard Guide for Use of Joint Sealants with Exterior Insulation and Finish Systems (EIFS)"
8. D578 / D578M "Standard Specification for Glass Fiber Strands"
9. D2247 "Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity"
10. D3273 "Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber"
11. D3274 "Standard Test Method for Evaluating Degree of Surface Disfigurement of Paint Films by Fungal or Algal Growth, or Soil and Dirt Accumulation"
12. D1784 "Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds"
13. D4258 "Standard Practice for Surface Cleaning Concrete for Coating"
14. D4261 "Standard Practice for Surface Cleaning Concrete Unit Masonry for Coating"
15. E84 "Standard Test Method for Surface Burning Characteristics of Building Materials"
16. E331 "Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference"
17. E2098 "Standard Test Method for Determining Tensile Breaking Strength of Glass Fiber Reinforcing Mesh for Use in Class PB Exterior Insulation and Finish Systems (EIFS), after Exposure to a Sodium Hydroxide Solution"
18. E2110 "Standard Terminology for Exterior Insulation and Finish Systems (EIFS)"
19. E2273 "Standard Test Method for Determining the Drainage Efficiency of Exterior Insulation and Finish Systems (EIFS) Clad Wall Assemblies"
20. E2430 "Standard Specification For Expanded Polystyrene ("EPS") Thermal Insulation Boards For Use In Exterior Insulation and Finish Systems ("EIFS")"
21. E2485 "Standard Test Method for Freeze/Thaw Resistance of Exterior Insulation and Finish Systems (EIFS) and Water Resistive Barrier Coatings "
22. E2486 "Impact Resistance of Class PB and PI Exterior Insulation and Finish Systems (EIFS)"
23. E2568 "Standard Specification for PB Exterior Insulation and Finish Systems"
24. E2570 "Evaluating Water-Resistive Barrier (WRB) Coatings Used under Exterior Insulation and Finish Systems (EIFS) or EIFS with Drainage"

B. Association of the Wall and Ceiling Institute (AWCI)

C. Gypsum Association (GA) Publications:

1. GA-253 "Recommended Specifications for the Application of Gypsum Sheathing"

- D. International Code Council (ICC)
- E. ICC Evaluation Service Reports:
  - 1. AC235 “Acceptance Criteria for EIFS Clad Drainage Wall Assemblies”
- F. National Fire Protection Association (NFPA) Publications:
  - 1. 268 “Standard Test Method for Determining Ignitibility of Exterior Wall Assemblies Using a Radiant Heat Energy Source”
  - 2. 285 “Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components”

### 1.03 DEFINITIONS

- A. Class PB Exterior Insulation and Finish System (EIFS), per ASTM E2110 are systems applied over insulation board, in which the base coat ranges from not less than 1 /16 in. to 1/4 in. dry thickness, depending upon the number of nonmetallic reinforcing mesh layers encapsulated in the base coat. The base coat is then covered with a finish coat of various thicknesses in a variety of textures and colors.
- B. Water-Drainage Exterior Insulation and Finish System (EIFS): EIFS with a means that allows moisture entering into an EIFS assembly to drain to the exterior.

### 1.04 SUBMITTALS

- A. Product Data: Submit technical product data, test reports, installation instructions and recommendations from manufacturer, including data that materials comply with requirements.
- B. Shop Drawings: Show installation of system including plans, elevations, sections, details of components, joint locations and configurations within system and between system and construction penetrating it, termination details, and attachments to construction behind system which are project-specific.
- C. Samples: Submit one 1 ft. x 1 ft. sample of the wall system for each finish, color, and texture selected using same tools and techniques as for the actual project.
- D. Certifications:
  - 1. Manufacturer’s written certification of installer as qualified to install manufacturer’s system using trained workers.
  - 2. Certification that materials meet or exceed requirements.

3. Provide manufacturers applicable code compliance report stating that the EIFS as installed has been tested per local Code requirements and does not affect the fire rating of the exterior wall assembly.
4. Where required by local building codes, provide certification from sealant manufacturer that sealants used in conjunction with EIFS installations is in compliance with EIFS manufacturers requirements.

E. Closeout Submittals:

1. Affidavits:

- a. Where mandated by applicable building codes, provide affidavits from EIFS and sealant applicators confirming full compliance to all manufacturers' application requirements.
- b. Contractor shall submit the following Affidavits as an attachment to the EIFS warranty:
  - 1) "Exterior Insulation and Finish Affidavit", completed by the EIFS Applicator, at the end of this Section.
  - 2) "Exterior Sealant Affidavit", completed by the sealant applicator, at the end of this Section.

2. Maintenance Kit:

- a. Supply maintenance kit and store at site where directed by Owner's Representative.
  - 1) Containers of liquids shall be unopened
- b. Maintenance kit shall contain the following components:
  - 1) Printed maintenance instructions
  - 2) One gallon of adhesive
  - 3) Minimum one gallon of finish color coating for each color used
  - 4) 32 square feet of each type reinforcing fabric
  - 5) 32 square feet of insulation board
3. Field Observation Reports: Copies of all "Field Observation Reports" from the EIFS manufacturer representative shall be submitted as an attachment to the EIFS warranty.

1.05 QUALITY ASSURANCE

A. Qualifications:

1. The Applicator, and Insulation Board Manufacturer shall be approved by the manufacturer in writing on company letterhead. Attach this letter to warranty.
  2. The manufacturer shall be a member of the Exterior Insulation Manufacturer's Association – EIMA, the Association of the Wall and Ceiling Institute, or a similar quality standards development organization acceptable to the Architect and the Owner.
  3. The installer shall have had a minimum of five years of experience under the same company name or organization installing the specified product on projects similar in scope, and with a record of successful in-service performance.
    - a. The installer shall be EIFSsmart certified by the Association of Walls and Ceiling Institute (AWCI).
- B. Plan Review and Water Vapor Transmission Analysis: Prior to installation of exterior insulation and finish systems (EIFS), submit project drawings to selected EIFS manufacturer for Plan Review comments and Water Vapor Transmission (WVT) Analysis. Provide copies of plan review comments and WVT analysis to Owner's Representative, General Contractor and Owner and review comments / analysis during pre-installation meeting.
- C. Code Approvals:
1. The EIFS system shall maintain a research report with the applicable building codes and agencies within the jurisdiction of the Project. Code compliance must be based on full scale diversified fire testing in its end use configuration by independent agencies whose classifications and requirements have general acceptance as regulator.
  2. The EIFS system shall meet or exceed the Energy Standards as set by the applicable building codes and agencies within the jurisdiction of the project. Coordinate all applicable installation conditions and detailing as required to accommodate thickness of exterior continuous insulation that are required by applicable energy codes.
  3. The System shall be evaluated, listed, and classified as described in the following documents:
    - a. ICC Research Report
    - b. Local Approval
- D. Field-Constructed Mock-Up: Prior to installation of exterior insulation and finish systems, erect mock-ups for each form of wall construction, including typical caulked joints and/or rustication type joints, etc., and finish required to verify selections made under sample submittals. Build mock-ups to comply with the following requirements, using materials indicated for final work:
1. Locate mock-ups on site in location and of size indicated or, if not indicated, as directed by the Owner's Representative.
  2. Obtain the Owner Representative's acceptance of mock-up's visual qualities before start of final work.

- E. Pre Installation meeting: The EIFS installer's foreman or superintendent for this project and a representative of the EIFS system manufacturer shall attend the Pre-installation meeting prior to the start of the EIFS application.
- F. The engineered and tested performance of the EIFS shall be the sole responsibility of the EIFS manufacturer. The EIFS installer shall comply with the manufacturer's recommendations.

#### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original, unopened packages with manufacturer's labels intact and clearly identifying products.
- B. Store materials inside and under cover; keep them dry and protected from the weather, direct sunlight, surface contamination, aging, corrosion, damaging temperatures, construction traffic, and other causes.
  - 1. Protect coatings delivered in pails from freezing and temperatures in excess of 90°F. Store away from direct sunlight.
  - 2. Protect bagged Portland cement based materials from moisture and humidity. Store under cover and off the ground in a dry location.
  - 3. Stack insulation board flat and off the ground.
  - 4. Protect plastic insulation against ignition at all times. Do not deliver plastic insulating materials to Project site before installation time.
- C. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

#### 1.07 WARRANTY

- A. EIFS Manufacturer:
  - 1. The EIFS manufacturer shall provide a minimum 10-year limited warranty on the labor and materials associated with the EIFS and 10 year materials and labor moisture drainage warranty. This warranty is exclusive of flashings and shall not be limited for fade resistance or depreciation.
    - a. EIFS Materials and System are warrantied against:
      - 1) Material defects, including, but not limited to, fading, peeling, cracking, delamination, flaking, or similar failures.
      - 2) Seepage and leakage of water or excessive moisture into the building or wall cavities through a material defect in the Water Drainage EIFS system.



B. EIFS Installer:

1. The EIFS installer shall provide a minimum 3-year warranty for all workmanship related to the EIFS application.
2. EIFS Installation shall be warranted against:
  - a. Failure in an EIFS system component or overall performance including but not limited to
    - 1) Seepage and leakage of water or excessive moisture into the building or wall cavities through improper material mixing or material curing, failure to provide proper protection or installation within temperature limitations.
    - 2) Application not in accordance with contract documents and/or EIFS manufacturer's recommendations for the Water Drainage EIFS system.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Basis of Design: "Outsulation Plus MD EIFS"; Dryvit Systems, Inc. (800-556-7752)
1. [BASF Wall Systems](#) (800-221-9255).
  2. [Master Wall Inc](#) (800-755-0825)
  3. [Sto Corp.](#) (888-786-3437)

2.02 GENERAL

- A. Source Limitation: All components of the wall system shall be obtained from one manufacturer. Accessory items not manufactured but which are approved by the system manufacturer will be acceptable.
- B. Performance Requirements: Provide systems that comply with the following performance requirements:
1. Bond Integrity: Free from bond failure within EIFS system components or between system and supporting wall construction, resulting from exposure to fire, wind loads, weather, or other in-service conditions.
  2. Weathertightness: Resistant to water penetration from exterior into system and assemblies behind it or through them into interior of building that results in deterioration of thermal-insulating effectiveness or other degradation of system and assemblies behind it, including substrates, supporting wall construction, and interior finish, and including a means that allows water entering into an EIFS assembly to drain to the exterior.
  3. Water Penetration: No water penetration when tested in accordance with ASTM E331.

4. Moisture Resistance: No deleterious effects after 14 days when tested in accordance with ASTM D 2247.
5. Drainage: Greater than 90% drainage efficiency when tested in accordance with ASTM E2273.
6. Salt Spray Resistance: No deleterious effects after 300 hours when tested in accordance with ASTM B117.
7. Freeze/Thaw: No deleterious effects when tested in accordance with ASTM E2485.
8. Mildew Resistance: No growth supported during 28 day exposure period when tested in accordance with ASTM D3273 and evaluated according to ASTM D3274.
9. Impact Resistance:
  - a. ASTM E2486 minimum values without cracking:
    - 1) Standard Impact Resistance - Adhesive/Base Coat: 25-49 in./lb.
    - 2) Medium Impact Resistance - Adhesive/Base Coat: 50-89 in./lb.
    - 3) High Impact Resistance - Adhesive/Base Coat: 90-150 in./lb.
    - 4) Ultra-High Impact Resistance - Adhesive/Base Coat: >150 in./lb.
  - b. From grade to 2nd floor, a minimum 90-150 inch/pounds impact system is required.
  - c. From 2nd floor up to a minimum 50-89 in./lb. impact system is required.
  - d. High traffic areas: Provide 150 in./lb. or greater impact system.
- C. Fire-Test-Response Characteristics: Provide system assemblies and components with the following fire-test-response characteristics as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing and inspecting agency.
  - a. Insulation Board: Flame Spread Index of 25 or less and a Smoke Developed Index of 450 or less when tested individually per ASTM E84.
  - b. Finish Coats: Flame Spread Index of 25 or less and a Smoke Developed Index of 450 or less when tested individually per ASTM E84.

## 2.03 MATERIALS

- A. Compatibility: Provide substrates, air/moisture barrier, integrated flashing, drainage accessories, adhesive, board insulation, reinforcing meshes, base- and finish-coat materials, and sealants that are compatible with one another and approved for use by system manufacturer for Project.
- B. Air/Moisture Barrier: A ready mixed acrylic based, fiber reinforced, water-resistive coating.

1. Install layer of air/water resistive barrier to completely cover wall substrate before installation of EIFS system.
  2. Air/water resistive Barrier System Accessories: For use at substrate joints and at openings in the substrate and penetrations through the substrate.
    - a. Joint Treatment: ready mixed acrylic based, flexible joint compound as recommended by the manufacturer for use the air/moisture barrier.
    - b. Grid Tape: Open weave fiberglass mesh tape with pressure sensitive adhesive.
  3. Flashing:
    - a. Flexible Flashing Materials: Ready mixed, fluid applied with integral reinforcing mesh scrim flexible flashing material; EIFS manufacturer's standard.
    - b. Flashing Tape: Self-adhesive type as recommended by the manufacturer for use with the air/moisture barrier system.
    - c. Flashing Tape Surface Conditioner: As recommended by manufacturer for use with system flashing tape.
- C. Insulation Board:
1. Molded-Expanded-Polystyrene Board Insulation: Rigid, cellular thermal insulation formed by expansion of polystyrene resin beads or granules in a closed mold. Comply with system manufacturer's requirements, ASTM C578 for Type I, and ASTM E2430 for more stringent requirements for material performance and qualities of insulation, including dimensions and permissible variations, and the following:
    - a. Before cutting and shipping, age insulation in block form by air drying for not less than six weeks or by another method approved by EIMA that produces equivalent results.
      - 1) Nominal 1.0 pcf, of the thickness and shape as shown on the Drawings.
      - 2) Flamespread and smoke development shall be less than or equal to 25 and 450 respectively when tested by ASTM E84.
      - 3) Minimum thickness shall be as shown on Drawings and not less than 1".
      - 4) Maximum thickness: Per building code requirements.
      - 5) Labeling and quality control shall comply with the building code.
    - b. Pre-Base-Coated or Pre-Finished Insulated Shapes shall be provided with materials by EIFS manufacturer and shall be included under the EIFS warranty.
- D. Adhesive: Factory blended, polymer based adhesive as recommended by the system manufacturer to be compatible with the substrate and insulation being utilized.

- E. Reinforcing Mesh: Balanced, alkali-resistant, interlaced open-weave glass-fiber mesh treated for compatibility with other system materials, made from continuous multi-end strands with retained mesh tensile strength of not less than 120 lbf/in per ASTM E2098, complying with ASTM D578 and the following requirements for minimum weight:
1. Standard weight, as recommended by manufacturer to meet “Standard Impact Resistance” , not less than 4.3 oz.
  2. Intermediate weight, as recommended by manufacturer to meet “Medium Impact Resistance”, not less than 6 oz.
  3. Heavy weight as recommended by manufacturer to meet “Ultra-High Impact Resistance” in locations as shown on Drawings, and as selected below, not less than 20 oz..
- F. Base-Coat Materials: Factory blended, polymer based base coat as recommended by the system manufacturer to be compatible with the EPS insulation board and reinforcing mesh.
- G. Finish Coat: Materials System manufacturer’s standard mixture, complying with the following requirements for material composition and method of combining materials:
1. Factory mixed acrylic polymer emulsion texture finish with color fast mineral pigments forming integral finish color.
  2. Color: Selected by the Architect and approved by the Owner..
    - a. High Performance Colorants: Provide high performance colorant in the textured finish coat as well as in two (2) coats of acrylic paint for those colors specified in the Exterior Finish Index. Acceptable products are as follows:
      - 1) “StratoTone”; Dryvit Systems, Inc.
      - 2) “ColorFast Pigment System”; Parex USA
      - 3) Approved substitution by other listed manufacturers.
  3. Texture: Refer to Exterior Finish Index.
- H. Acrylic Coating: Materials System manufacturer’s standard mixture, 100% acrylic, integrally colored paint coating.
1. Acceptable Product: “Demandit” by Dryvit Systems, Inc. or approved substitution by other listed manufacturers.
  2. Shall be applied in a minimum of 2 coats and in accordance with EIFS Manufacturer’s application instructions – Dryvit Systems, Inc. “DS 400”.
- I. Wall System:
1. Shall have been tested for the environmental tests specified herein and the properties shall meet or exceed the listed values.

2. Shall have been tested by large scale diversified fire test, Modified ASTM E108 - Results  
- The wall system does not contribute to vertical or horizontal flame spread propagation  
nor produce large quantities of smoke.
- J. Cement: Type I Portland Cement, ASTM C150.
- K. Water:
  1. Water shall be clean and potable. Water shall be tested by the installer for excessive levels of iron and all other potentially damaging substances prior to its incorporation in accordance with the manufacturer's published instructions.
- L. Sheathing (Vertical and Horizontal Applications):
  1. Glass Mat Water-Resistant Gypsum Sheathing Board, per Section 06 10 00. Conform to ASTM C1177.
- M. Mechanical Fasteners: System manufacturer's recommended corrosion-resistant fasteners consisting of thermal cap, standard washer and shaft attachments, and fastener indicated below; selected for properties of pullout, tensile, and shear strength required to resist design loads of application indicated; capable of pulling fastener head below surface of insulation board.
- N. Drainage and Trim Accessories: Type as designated or required to suit conditions indicated and to comply with system manufacturer's written requirements, complying with ASTM C1063.
  1. Drainage Strip: Corrugated plastic sheet material for use where full backwrapping of horizontal termination edges is selected or required.
- O. Venting: For venting horizontal compartments in the exterior wall assembly.
  1. Vent Track: J-shaped PVC track placed above the vent assembly specified below.
  2. Vent Assembly: Formed aggregate matrix material encased in expanded polystyrene, designed to receive the specified vent track.
- P. Elastomeric Sealant Products: Provide system manufacturer's listed and recommended chemically curing, elastomeric sealant that is in accordance with ASTM C1382 and compatible with joint fillers, joint substrates, and other related materials, and complies with requirements for products and testing indicated in ASTM C1481 "Standard Guide for Use of Joint Sealants with Exterior Insulation and Finish Systems (EIFS)" and with requirements in Section 07 92 00 "Joint Sealants" for products.
  1. Product utilized shall be verified by this Contractor for approval with E.I.F.S. manufacturer utilized on this Project.
    - a. Tremco, Inc., an RPM Company (800-562-2728)
      - 1) Primer: "No. P1"

- 2) Sealant: "Dymeric 240 or Dymeric 240FC"
  - b. BASF Building Systems (952-496-6000)
    - 1) Primer: "No. 733"
    - 2) Sealant: "MasterSeal NP 2"
  - c. Pecora Corp. (800-523-6688)
    - 1) Primer: "P-75"
    - 2) Sealant: "Dynatrol II"
2. Colors as selected by Architect.

#### 2.04 MIXING

- A. General: Comply with system manufacturer's requirements for combining and mixing materials. Do not introduce admixtures, water, or other materials except as recommended by system manufacturer. Mix materials in clean containers. Use materials within time period specified by system manufacturer or discard.

### PART 3 EXECUTION

#### 3.01 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install system when ambient outdoor air and substrate temperatures are 40 deg. F and falling unless temporary protection and heat are provided to maintain ambient temperatures above 40 deg. F during installation of wet materials and until they have dried thoroughly and become weather resistant, but for at least 24 hours after installation of Air/Water resistive barrier and EIFS.
- B. Adjacent materials and the wall system shall be protected during installation, while curing and/or unattended, from weather and other damaging conditions.

#### 3.02 EXAMINATION

- A. Prior to application of the wall system, the substrate shall be examined by the installer for compliance with the Contract Documents and manufacturer's specifications. The Contractor and Owner's representative shall be advised of all discrepancies. All substrates shall be free of surface and excessive internal moisture. Work shall not proceed until unsatisfactory conditions are corrected.
1. Inspect sheathing application for compliance with GA-253.
  2. The Manufacturer's approved Applicator shall verify that the proposed Substrate is acceptable type prior to the application of the System.
  3. The System shall be installed in accordance with manufacturer's published details and specific recommendations for this project.

### 3.03 PREPARATION

- A. Protect contiguous work from moisture deterioration and soiling caused by application of systems. Provide temporary covering and other protection needed to prevent spattering of exterior finish coats on other work.
- B. Protect system, substrates, and wall construction behind them from inclement weather during installation. Prevent infiltration of moisture behind system and deterioration of substrates.
- C. Prepare and clean substrates to comply with system manufacturer's written requirements to obtain optimum bond between substrate and adhesive for insulation.
  - 1. Apply primer-sealer over substrates where required by system manufacturer for improving adhesion or for protecting substrates from degradation.

### 3.04 COORDINATION

- A. EIFS shall terminate above finished grade a minimum of 8 inches or as required by governing code.
- B. Coordinate installation of foundation waterproofing, roofing membranes, windows, doors and other wall penetrations to provide a continuous air/moisture barrier.
- C. Coordinate location of system terminations at adjoining materials and around penetrations to provide a minimum joint size as required by the system manufacturer for application of sealant to a width of 3/4 inches but no less than 1/2 inches.
- D. Provide protection of rough openings through walls per IBC requirements prior to installation of windows, doors and other items which penetrate the exterior walls.
- E. Coordinate installation of windows and doors so air/moisture barrier components are installed per manufacturer's recommendations and details.
- F. Install window and door head flashing immediately after windows and doors are installed.
- G. Install diverter flashings wherever water can enter the wall assembly to direct water to the exterior.
- H. Install copings and sealant immediately after installation of the EIFS and when EIFS coatings are dry.
- I. Attach penetrations through EIFS to structural support and provide water tight seal at penetrations. Follow EIFS manufacturers recommendations on fastening through the System.

- J. Temporary protection shall be provided during the wall system application and prior to the installation of the sealant and flashing systems at all locations that could allow moisture penetration. Do not allow water to penetrate behind EIFS.
- K. All joints to be sealed shall be done immediately after completion of field applied wall system.
- L. The tops of all walls must immediately be covered with either the final trim or temporary protection to prevent water infiltration behind the system. Coping shall be installed as soon as possible after the installation of the system.

### 3.05 INSTALLATION

- A. Comply with ASTM C1397 and system manufacturer's written instructions for installation of system as applicable to each type of substrate indicated.
  - 1. Avoid all sources of open flame in immediate are of application.
  - 2. Under no circumstances shall accelerators, retarders, or other admixtures be used.
  - 3. Use clean non-metal container, free of all foreign substance, for mixing and preparing material. Do not use container which has been used for or cleaned with a petroleum product.
- B. Install Air/water resistive Barrier in accordance with EIFS manufacturer's instructions.
- C. Install flashings and drainage accessories over air/water resistive barrier at all openings, penetrations, and other locations as recommended by EIFS manufacturer, to comply with EIFS manufacturer's instructions.
- D. Attach insulation to substrates to comply with ASTM C1397, system manufacturer's written requirements, and the following:
  - 1. Apply boards over dry substrates in courses.
  - 2. Joints:
    - a. Stager vertical joints in successive courses to produce running bond pattern.
      - 1) Offset joints of insulation from joining in sheathing.
    - b. EIFS to EIFS expansion joints, vertical or horizontal: Install insulation board with a clear 3/4" space prior to backwrap application. The finish joint shall be 1/2" clear space to receive sealant. Provide vertical expansion joints at a maximum 70'-0" within EIFS (keep substrate continuous).



- c. EIFS to EIFS expansion joints where building frame has expansion joints or underlying substrate will have localized movement.
    - 1) Horizontal expansion joints at floor lines where localized shrinkage of solid wood floor framing members is anticipated.
    - 2) Expansion joints within building structural frame: Same basic installation as an EIFS to EIFS expansion joint above. The width of sealant joint is a function of pre-determined expansion joint size. The finish joint width should be 3/4 inches or 4 times the anticipated joint movement, whichever is greater.
  - d. EIFS to Dissimilar materials: (windows, doors, louvers, etc where anticipated movement of sealant joint is static. Installation board shall be installed with a clear 3/4" space prior to the backwrap application. Finish sealant joint width to be minimum 1/2" wide.
  - e. EIFS to Dissimilar materials (strip windows, or louvers etc. where the anticipated movement of sealant joint is dynamic). Similar condition to EIFS to EIFS where movement is anticipated. The width of sealant joint is a function of overall calculated movement of the step window or louvers. The finish joint width should be 4 times the anticipated joint movement.
- 3. Interlock ends at internal and external corners.
  - 4. Rasp or sand flush any irregularities projecting more than 1/32" from surface of insulation; do not create depressions deeper than 1/16". Fill all gaps within insulation boards greater than 1/16" with slivers of EPS.
  - 5. Cut insulation to fit openings, corners, and projections and to produce edges and shapes conforming to details indicated.
  - 6. Sealants shall be applied to reinforced base coat only. Application to finish coat will not be acceptable.
  - 7. Treat exposed edges of insulation board by encapsulating with base coat, reinforcing fabric, and finish coat.
  - 8. Coordinate flashing installation with installation of insulation.
- E. Apply base coat to exposed surfaces of insulation in thickness specified system manufacturer.
- 1. Minimum thickness of base coat to be sufficient to embed reinforcing mesh, or as required by system manufacturer.
  - 2. Prior to application of base coat, rasp surface of EPS insulation board to remove yellow dust deposits resulting from excessive UV exposure.

- F. Fully embed reinforcing fabric of weight indicated below in wet base coat to produce wrinkle free installation so that no mesh color or pattern is visible: Follow system manufacturer's instructions for reinforcing mesh application.
  - 1. Fabric Weight: Standard Impact Resistance, unless otherwise indicated.
  - 2. High-Impact Resistance: From ground level to minimum 8'-0" high, at all corners of doors and windows, all column surrounds and in other locations as shown on Drawings.
  - 3. Mesh to be continuous at corners and overlapped not less than 2-1/2". Do not lap reinforcing mesh within 8" of corners.
- G. Apply finish coat over dry base coat in thickness required by system manufacturer to produce a uniform finish of texture and color matching approved sample.

### 3.06 INSTALLATION OF JOINT SEALANTS

- A. Prepare joints for sealants, of type and at locations indicated, to comply with applicable requirements in Section 07 92 00 - "Joint Sealants" and in ASTM C1481.
  - 1. Clean surfaces to receive sealants to comply with indicated requirements and system manufacturer's written instructions.
  - 2. Joint sealants to be applied after base coat has cured but before applying finish coat.

### 3.07 FIELD QUALITY CONTROL

- A. The General Contractor shall coordinate with selected EIFS manufacturer representative for interim site visits to perform field observation at appropriate milestone stages of the EIFS application or as necessary to review detailing or installation questions.
  - 1. The manufacturer's representative shall provide final "Field Observation" at the completion of application of the system including contiguous sealant joints.
- B. Provide independent third party inspection where required by applicable building codes and agencies within the jurisdiction of the Project.
- C. Conduct inspections in accordance with code requirements and contract documents.

### 3.08 CLEANING AND PROTECTING

- A. Remove temporary covering and protection of other work. Promptly remove coating materials from window and door frames and other surfaces outside areas indicated to receive system coatings.
- B. Provide final protection and maintain conditions, in a manner acceptable to Installer and system manufacturer that ensure system is without damage or deterioration at the time of Substantial Completion.

EXTERIOR INSULATION AND FINISH AFFIDAVIT  
 (ATTACH TO EIFS PROJECT WARRANTY)

EIFS Applicator Sub-Contractor: \_\_\_\_\_  
 (Type Name)

Completion Date: \_\_\_\_\_

The exterior insulation and finish system (EIFS) installed on the structure located at the address below:

\_\_\_\_\_ CONFORMS \_\_\_\_\_ DOES NOT CONFORM

TO: \_\_\_\_\_  
 (EIFS Manufacturer)

RECOMMENDED INSTALLATION PRACTICES AND PROJECT MANUAL SECTION 07 24 19  
 (EIFS SPECIFICATION)

Name & Address of Structure	Product Component Names	
_____	Water Resistive Barrier:	_____
_____	Adhesive(s):	_____
_____	EPS Molder's Name:	_____
_____	Fasteners (mechanical):	_____
_____	Base Coat:	_____
_____	Reinforcing Fabric:	_____
_____	Finish Coat(s):	_____
Installation	Conforms	Does Not Conform

- A. Substrate Type and Installation \_\_\_\_\_
- B. EIFS \_\_\_\_\_
  - 1) Water Resistive Barrier Coating \_\_\_\_\_

2) Adhesive and/or Fasteners

3) Insulation

4) Reinforcing Fabric

5) Base Coat

6) Finish

The information entered above is offered in testimony that the EIFS installation conforms with the listed EIFS manufacturer's installation methods and procedures and all applicable model or jurisdictional building codes.

*Note: An affidavit shall be received from the sealant installer indicating that the sealant installation conforms with the EIFS minimum application requirements and sealant manufacturer's installation methods and procedures and must accompany this declaration. These affidavits must be attached to the EIFS project warranty for this project.*

EIFS Contractor Company Name &  
Address:

Signature of responsible officer:

Typed Name and Title of Officer:

Telephone Number:

(      )

EXTERIOR SEALANT AFFIDAVIT

(ATTACH TO EIFS PROJECT WARRANTY)

Sealant Sub-Contractor Company: \_\_\_\_\_  
(Type Name)

Completion Date: \_\_\_\_\_

THE SEALANT INSTALLED IN CONJUNCTION WITH \_\_\_\_\_ *(Name of EIFS Mfg)*

EXTERIOR INSULATION AND FINISH SYSTEM (EIFS) INSTALLED ON THE STRUCTURE BELOW LOCATED AT THE ADDRESS INDICATED BELOW:

\_\_\_\_\_ CONFORMS \_\_\_\_\_ DOES NOT CONFORM

TO: \_\_\_\_\_ *(Name of EIFS Mfg)*

AND \_\_\_\_\_ *(Sealant Mfg's Name)*

RECOMMENDED INSTALLATION PRACTICES AND PROJECT MANUAL SECTION 07 92 00 (JOINT SEALANT SPECIFICATION)

Name & Address of Structure
-----------------------------

Product Component Names
-------------------------

_____
_____
_____
_____

Primer(s):	_____
Sealers:	_____
Bond Breakers:	_____
Sealant Material:	_____

ROOF REPLACEMENT/WALL REPAIR/ENTRY  
LOWER PARK HEIGHTS COMMUNITY CENTER

ISSUED FOR BID  
August 3, 2022

Installation	Conforms	Does Not Conform
A. Designer's requirements, details	_____	_____
B. Sealant manufacturer's details and requirements	_____	_____
C. Exterior insulation details and requirements	_____	_____

D. The information entered above is offered in testimony that the Sealant installation conforms with the listed sealant manufacturer's installation methods and procedures and the EIFS manufacturer's minimum recommendations..

Sealant Installer Company Name &  
Address:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Signature of responsible officer: \_\_\_\_\_

Typed Name and Title of Officer: \_\_\_\_\_

Telephone Number: (     ) \_\_\_\_\_

Date Signed: \_\_\_\_\_

END OF SECTION 07 24 19

SECTION 075419 - POLYVINYL-CHLORIDE (PVC) ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Polyvinyl chloride (PVC) roofing systems for the following applications:
  - a. Fully-adhered system over existing steel roof deck.
  - b. System R-value: Not less than 30.
  - c. Insulation Type: 2-layer polyisocyanurate board. Base layer mechanically fastened; second layer and cover board shall be adhered. Minimum 4-1/2" of insulation.
2. Roof insulation
3. Cover board.
4. Liquid flashing.
5. Walkways.

B. Related Requirements:

1. Section 061053 "Miscellaneous Rough Carpentry" for wood nailers, curbs, and blocking.
2. Section 070500 "Common Work Results for Thermal and Moisture Protection."
3. Section 076200 "Sheet Metal Flashing and Trim".
4. Section 077100 "Roof Specialties"
5. Section 077200 "Roof Accessories"
6. Section 079200 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.
7. Division 22 for internal roof drains.

C. Related Work Specified Elsewhere

1. Section 028221 "Roofing Abatement."
2. Section 070150.19 "Preparation for Reroofing"

1.2 DEFINITIONS

- A. Roofing Terminology: Definitions in ASTM D1079 and glossary in NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" apply to work of this Section.

1.3 PREINSTALLATION MEETING

A. Pre-installation Roofing Conference:

1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck Installer, air barrier Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.

2. Meeting Location: Project site.
3. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
4. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
5. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
6. Review structural loading limitations of roof deck during and after roofing.
7. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
8. Review governing regulations and requirements for insurance and certificates if applicable.
9. Review temporary protection requirements for roofing system during and after installation.
10. Review roof observation and repair procedures after roofing installation.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  1. For insulation and roof system component fasteners, include copy of FM Approvals' RoofNav listing.
- B. Shop Drawings: Include roof plans, sections, details, and attachments to other work, including the following:
  1. Layout and thickness of insulation.
  2. Base flashings and membrane terminations.
  3. Flashing details at penetrations.
  4. Tapered insulation thickness and slopes.
  5. Roof plan showing orientation of steel roof deck and orientation of roof membrane, fastening spacings, and patterns for mechanically fastened roofing system.
  6. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
  7. Tie-in with air barrier.
- C. Samples for Verification: For the following products:
  1. Roof membrane and flashing, of color specified.
  2. Walkway pads or rolls, of color specified.
- D. Wind Uplift Resistance Submittal: For roofing system, indicating compliance with wind uplift performance requirements.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Special Warranty Certificate: Signed by roof membrane manufacturer, certifying that all materials supplied under this Section are acceptable for special warranty.



- C. Product Test Reports: For roof membrane and insulation, tests performed by independent qualified testing agency indicating compliance with specified requirements.
- D. Evaluation Reports: For components of roofing system, from ICC-ES.
- E. Field Test Reports:
  - 1. Concrete internal relative humidity test reports.
  - 2. Fastener-pullout test results and manufacturer's revised requirements for fastener patterns.
- F. Field quality-control reports.
- G. Sample Warranties: Submit sample warranties covering the terms specified in Warranty Article.

#### 1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For roofing system to include in maintenance manuals.
- B. Executed warranties from Manufacturer and Installer according to the terms specified in Warranty Article.
  - 1. Include Performance Requirement Certificate, signed by roof membrane manufacturer, certifying that roofing system *as installed* complies with requirements specified in "Performance Requirements" Article.

#### 1.7 QUALITY ASSURANCE

- A. Source Limitations: Obtain components for roofing system from roof membrane manufacturer or manufacturers approved by roof membrane manufacturer and complying with the specified warranty terms.
- B. Material Compatibility: Roofing system components shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.
- C. Installer Qualifications: A qualified firm that is approved by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.

1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.

#### 1.9 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

#### 1.10 WARRANTY

- A. Furnish the roof membrane manufacturer's 30-year, no dollar limit roof system materials and installation workmanship warranty, including flashing, insulation, and accessories necessary for a watertight roof system construction. Provide warranty directly to the owner and commence warranty effective date at time of owner's acceptance of roof work. The warranty must state:
  1. If within the warranty period the roof system, as installed for its intended use in the normal climatic and environmental conditions of the facility, becomes non-watertight, shows evidence of moisture intrusion within the assembly, splits, tears, cracks, delaminates, separates at the seams, or shows evidence of excessive weathering due to defective materials or installation workmanship, the repair or replacement of the defective and damaged materials of the roof system assembly and correction of defective workmanship are the responsibility of the roof membrane manufacturer. All costs associated with the repair or replacement work are the responsibility of the roof membrane manufacturer.
  2. When the manufacturer or his approved applicator fail to perform the repairs within 48 hours of notification, emergency temporary repairs performed by others does not void the warranty.
  3. The warranty shall be for the roof as installed without exclusion. Manufacturer's final inspection report will verify the roof as installed meet all manufacturer's warranty requirements.
  4. Future alterations to the roof will not void the entire roof warranty. If areas are modified in a manner not consistent with the manufacturer's standard, then only the modified portions shall not be covered by the warranty.
  5. The warranty will cover Sustained wind speeds up to 100 MPH and the basis of the wind speed will be a reasonably close wind recording station.
  6. Warranties with unapproved exclusions may be cause for rejection of the material submission.
  7. The warranty will not include requirements for inspections by the Owner.
- B. Roof Installer's Warranty: On the form provided at the end of this Section, signed by Installer, covering the Work of this Section, including all components of roofing system as listed for Manufacturer's specified warranty above, for the following warranty period:

1. Warranty Period: Two years from date of Substantial Completion with no dollar limitation (NDL).

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roof system and flashings shall remain watertight.
  1. Accelerated Weathering: Roof membrane shall withstand 2000 hours of exposure when tested according to ASTM G152, ASTM G154, or ASTM G155.
  2. Impact Resistance: Roof membrane shall resist impact damage when tested according to ASTM D3746, ASTM D4272/D4272M, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.
- B. Wind Uplift Resistance: Design roofing system to resist the wind uplift pressures identified on the Drawings when tested according to FM Approvals 4474, UL 580, or UL 1897:
- C. FM Approvals' RoofNav Listing: Roof membrane, base flashings, and component materials shall comply with requirements in FM Approvals 4450 or FM Approvals 4470 as part of a roofing system, and shall be listed in FM Approvals' RoofNav for Class 1 or noncombustible construction, as applicable. Identify materials with FM Approvals Certification markings.
  1. Fire Classification: Class 1A.
  2. Hail-Resistance Rating: SH.
- D. ENERGY STAR Listing: Roofing system shall be listed on the DOE's ENERGY STAR "Roof Products Qualified Product List" for low-slope roof products.
- E. Exterior Fire-Test Exposure: ASTM E108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
- F. Fire-Resistance Ratings: Comply with fire-resistance-rated assembly designs indicated. Identify products with appropriate markings of applicable testing agency.

### 2.2 POLYVINYL CHLORIDE (PVC) ROOFING

- A. PVC Sheet: ASTM D4434/D4434M, Type II, reinforced, fabric backed.
  1. Thickness: 60 mils
  2. Exposed Face Color: White.
  3. Basis of Design Manufacturer: [Sika Sarnafil, Inc.](#)
  4. Other Acceptable Manufacturers:

- a. [Carlisle SynTec](#)
- b. Flex
- c. [Johns Manville](#)
- d. Seaman Corporation (Fibertite)
- e. [Soprema](#)

## 2.3 AUXILIARY ROOFING MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with other roofing components.
  1. Adhesives and Sealants: Comply with VOC limits of authorities having jurisdiction.
- B. Sheet Flashing: Manufacturer's standard sheet flashing of same material, type, reinforcement, thickness, and color as PVC sheet.
- C. Liquid Flashing: Two-component polymethyl methacrylate-based (PMMA) liquid-applied flashing with embedded non-woven needle-punched polyester reinforcing scrim.
- D. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.
- E. Bonding Adhesive: Manufacturer's standard for applications and ratings specified.
- F. Membrane Adhesive: Roofing system manufacturer's standard cold-applied adhesive formulated for compatibility and use with specified membrane roofing.
- G. Metal Termination Bars: Manufacturer's standard, predrilled stainless steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.
- H. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roofing components to substrate, and acceptable to roofing system manufacturer.
- I. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.

## 2.4 ROOF INSULATION

- A. General: Preformed roof insulation boards manufactured by PVC roof membrane manufacturer, approved for use in FM Approvals' RoofNav listed roof assemblies.
- B. Polyisocyanurate Board Insulation: ASTM C1289, Type II, Class 2, Grade 2, coated glass-fiber mat facer on both major surfaces.
  1. Compressive Strength: 20 psi.
  2. Size: 48 by 48 inches.
  3. Thickness:

- a. Base Layer: 2.5-inches, maximum.
- b. Upper Layer: As necessary to comply with the thermal performance requirements for the roof assembly.

## 2.5 INSULATION ACCESSORIES

- A. General: Provide roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with other roofing system components.
- B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation and cover boards to substrate, and acceptable to roofing system manufacturer.
- C. Insulation Adhesive: Insulation manufacturer's recommended adhesive formulated to attach roof insulation to substrate or to another insulation layer as follows:
  1. Bead-applied, low-rise, one-component or multicomponent urethane adhesive.
  2. Full-spread, spray-applied, low-rise, two-component urethane adhesive.
- D. Cover Board: ASTM C1177/C1177M, glass-mat, water-resistant gypsum board, Type X.
  1. Dimensions: 1/2" x 48" x 96".
  2. Surface Finish: Factory primed.

## 2.6 WALKWAYS

- A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads, approximately 3/16 inch thick and acceptable to roofing system manufacturer.
  1. Size: Approximately 36 by 60 inches .
  2. Color: Contrasting with roof membrane.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.
  1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.
  2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
  3. Verify that surface plane flatness and fastening of steel roof deck complies with requirements in Section 053100 "Steel Decking."
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing system installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.
- C. Perform fastener-pullout \*TESTS\* according to roof system manufacturer's written instructions.
  - 1. Submit test result within 24 hours of performing tests.
    - a. Include manufacturer's requirements for any revision to previously submitted fastener patterns required to achieve specified wind uplift requirements.

### 3.3 ROOFING INSTALLATION, GENERAL

- A. Install roofing system according to roofing system manufacturer's written instructions, FM Approvals' RoofNav assembly requirements, and FM Global Property Loss Prevention Data Sheet 1-29.
- B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.
- C. Install roof membrane and auxiliary materials to tie in to existing roofing to maintain weathertightness of transition.
- D. Coordinate installation and transition of roofing system component serving as an air barrier with air barrier specified under Section 072726 "Fluid-Applied Membrane Air Barriers."

### 3.4 INSULATION INSTALLATION

- A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at end of workday.
- B. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.
- C. Installation Over Metal Decking:
  - 1. Install base layer of insulation with joints staggered not less than 24 inches in adjacent rows, end joints staggered not less than 12 inches in adjacent rows, and with long joints continuous at right angle to flutes of decking.
    - a. Locate end joints over crests of decking.

- b. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
  - c. Make joints between adjacent insulation boards not more than 1/4 inch in width.
  - d. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches .
    - 1) Trim insulation so that water flow is unrestricted.
  - e. Fill gaps exceeding 1/4 inch with insulation.
  - f. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
  - g. Loosely lay base layer of insulation units over substrate.
  - h. Mechanically attach base layer of insulation using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to metal decks.
    - 1) Fasten insulation according to requirements in FM Approvals' RoofNav for specified Windstorm Resistance Classification.
    - 2) Fasten insulation to resist specified uplift pressure at corners, perimeter, and field of roof.
2. Install upper layers of insulation with joints of each layer offset not less than 12 inches (305 mm) from previous layer of insulation.
- a. Staggered end joints within each layer not less than 24 inches in adjacent rows.
  - b. Install with long joints continuous and with end joints staggered not less than 12 inches in adjacent rows.
  - c. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
  - d. Make joints between adjacent insulation boards not more than 1/4 inch in width.
  - e. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches .
  - f. Trim insulation so that water flow is unrestricted.
  - g. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
  - h. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
  - i. Loosely lay each layer of insulation units over substrate.
  - j. Adhere each layer of insulation to substrate using adhesive according to FM Approvals' RoofNav assembly requirements and FM Global Property Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification, as follows:
    - 1) Set each layer of insulation in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

### 3.5 INSTALLATION OF COVER BOARDS

- A. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches in each direction.
  - 1. Trim cover board neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
  - 2. At internal roof drains, conform to slope of drain sump.

- a. Trim cover board so that water flow is unrestricted.
3. Cut and fit cover board tight to nailers, projections, and penetrations.
4. Adhere cover board to substrate using adhesive according to FM Approvals' RoofNav assembly requirements and FM Global Property Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification, as follows:
  - a. Set cover board in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

### 3.6 ADHERED ROOFING INSTALLATION

- A. Adhere roof membrane over area to receive roofing according to roofing system manufacturer's written instructions.
- B. Unroll roof membrane and allow to relax before installing.
- C. Start installation of roofing in presence of roofing system manufacturer's technical personnel.
- D. Accurately align roof membrane, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- E. Bonding Adhesive: Apply to substrate and underside of roof membrane at rate required by manufacturer, and allow to partially dry before installing roof membrane. Do not apply to splice area of roof membrane.
  1. In addition to adhering, mechanically fasten roof membrane securely at terminations, penetrations, and perimeter of roofing.
- F. Apply roof membrane with side laps shingled with slope of roof deck where possible.
- G. Seams: Clean seam areas, overlap roofing, and hot-air weld side and end laps of roof membrane and sheet flashings to ensure a watertight seam installation.
  1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of roof membrane and sheet flashings.
  2. Test field strength of seams a minimum of twice daily, and repair seam sample areas.
  3. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.
- H. Spread sealant bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.

### 3.7 BASE FLASHING INSTALLATION

- A. Install sheet flashings and preformed flashing accessories, and adhere to substrates according to roofing system manufacturer's written instructions.



- B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate, and allow to partially dry. Do not apply to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
- D. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.
- E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

### 3.8 LIQUID FLASHING INSTALLATION

- A. Prime penetrations and adjacent surfaces to receive liquid-applied flashing system according to the approved manufacturer's recommendations. Tape off surfaces that are not to receive the flashing system.
- B. Apply liquid flashing liquid at the approved manufacturer's recommended spreading rate. Embed fabric scrim as recommended. Following the manufacturer's prescribed curing period, apply the topcoat to the extent required to achieve the recommended overall system thickness. Protect the installed system from damage, foot traffic and other deleterious conditions.
- C. Remove masking tape and other temporary protections. Leave the work areas clean.

### 3.9 WALKWAY INSTALLATION

- A. Flexible Walkways: Install walkway products according to manufacturer's written instructions.
  - 1. Install flexible walkways at the following locations:
    - a. Perimeter of each rooftop unit.
    - b. Between each rooftop unit location, creating a continuous path connecting rooftop unit locations.
    - c. Between each roof hatch and each rooftop unit location or path connecting rooftop unit locations.
    - d. Top and bottom of each roof access ladder.
    - e. Between each roof access ladder and each rooftop unit location or path connecting rooftop unit locations.
    - f. Locations indicated on Drawings.
    - g. As required by roof membrane manufacturer's warranty requirements.
  - 2. Provide 6-inch clearance between adjoining pads.
  - 3. Heat weld to substrate or adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

3.10 FIELD QUALITY CONTROL

- A. TESTING: Engage a testing agency acceptable to the Owner to inspect substrate conditions, surface preparation, roof membrane application, sheet flashings, protection, and drainage components, and to furnish reports to Architect.
- B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion, in presence of Architect, and to prepare inspection report.
- C. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.
- D. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.11 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing, inspect roofing system for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

3.12 ROOFING INSTALLER'S WARRANTY

- A. WHEREAS \_\_\_\_\_ of \_\_\_\_\_, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:
  - 1. Owner: <Insert name of Owner>.
  - 2. Address: <Insert address>.
  - 3. Building Name/Type: <Insert information>.
  - 4. Address: <Insert address>.
  - 5. Area of Work: <Insert information>.
  - 6. Acceptance Date: \_\_\_\_\_.
  - 7. Warranty Period: Two (2) years.
  - 8. Expiration Date: \_\_\_\_\_.
- B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,

- C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period Roofing Installer will, at Roofing Installer's own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.
- D. This Warranty is made subject to the following terms and conditions:
1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
    - a. lightning;
    - b. peak gust wind speed exceeding 155 MPH;
    - c. fire;
    - d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
    - e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
    - f. vapor condensation on bottom of roofing; and
    - g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
  2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
  3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
  4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.
  5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
  6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
  7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to

requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

1. Authorized Signature: \_\_\_\_\_.
2. Name: \_\_\_\_\_.
3. Title: \_\_\_\_\_.

END OF SECTION 075419

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Manufactured reglets and counterflashing.
- B. Formed low-slope roof sheet metal fabrications.
- C. Formed equipment support flashing.
- D. Related Requirements:
  - 1. Section 061000 "Rough Carpentry" for wood nailers, curbs, and blocking.
  - 2. Section 070500 "Common Work Results for Thermal and Moisture Protection."
  - 3. Section 075419 "Polyvinyl-Chloride (PVC) Roofing."
  - 4. Section 077100 "Roof Specialties."
  - 5. Section 077200 "Roof Accessories."
  - 6. Section 080500 "Common Work Results for Openings."

1.2 COORDINATION

- A. Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials.
- B. Coordinate sheet metal flashing and trim installation with adjoining roofing and wall materials, joints, and seams to provide leakproof, secure, and noncorrosive installation.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Refer to Section 075419 "Polyvinyl-Chloride (PVC) Roofing."

1.4 ACTION SUBMITTALS

- A. Product Data: For each of the following
  - 1. Underlayment materials.
  - 2. Elastomeric sealant.
  - 3. Butyl sealant.
  - 4. Seam sealers.
- B. Shop Drawings: For sheet metal flashing and trim.
  - 1. Include plans, elevations, sections, and attachment details.
  - 2. Detail fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled Work.
  - 3. Identify material, thickness, weight, and finish for each item and location in Project.

4. Include details for forming, including profiles, shapes, seams, and dimensions.
5. Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
6. Include details of termination points and assemblies.
7. Include details of expansion joints and expansion-joint covers.
8. Include details of roof-penetration flashing.
9. Include details of edge conditions, including crickets, flashings, and counterflashings.
10. Include details of special conditions.
11. Include details of connections to adjoining work.
12. Detail formed flashing and trim at scale of not less than 3 inches per 12 inches (1:5).

C. Samples for Verification: For each type of exposed finish.

1. Sheet Metal Flashing: 12 inches long by actual width of unit, including finished seam and in required profile. Include fasteners, cleats, clips, closures, and other attachments.
2. Trim, Metal Closures, Expansion Joints, Joint Intersections, and Miscellaneous Fabrications: 12 inches long and in required profile. Include fasteners and other exposed accessories.
3. Unit-Type Accessories and Miscellaneous Materials: Full-size Sample.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For fabricator.
- B. Product Certificates: For each type of coping and roof edge flashing that is ANSI/SPRI/FM 4435/ES-1 tested and FM Approvals approved.
- C. Product Test Reports: For each product, for tests performed by a qualified testing agency.
- D. Evaluation Reports: For copings and roof edge flashing, from an agency acceptable to authority having jurisdiction showing compliance with ANSI/SPRI/FM 4435/ES-1.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For sheet metal flashing and trim, and its accessories, to include in maintenance manuals.
- B. Special warranty.

1.7 QUALITY ASSURANCE

- A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.
  1. For fabrications that are ANSI/SPRI/FM 4435/ES-1 tested and FM Approvals approved, shop shall be listed as able to fabricate required details as tested and approved.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.
  - 1. Store sheet metal flashing and trim materials away from uncured concrete and masonry.
  - 2. Protect stored sheet metal flashing and trim from contact with water.
- B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal flashing and trim installation.

1.9 WARRANTY

- A. Special watertight warranty: Sheet metal flashing and trim incorporated into roofing systems shall be included in the roof system manufacturer's weathertight warranty. Refer to Section 075419 "Polyvinyl-Chloride (PVC) Roofing."
- B. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.
  - 1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
    - a. Color fading more than 5 Delta units when tested in accordance with ASTM D2244.
    - b. Chalking in excess of a No. 8 rating when tested in accordance with ASTM D4214.
    - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
  - 2. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General: Sheet metal flashing and trim assemblies, including cleats, anchors, and fasteners, shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.
- B. Sheet Metal Standard for Flashing and Trim: Comply with applicable requirements of the following standards for dimensions and profiles shown unless more stringent requirements are indicated.
  - 1. NRCA's "The NRCA Roofing Manual: Architectural Metal Flashing, Condensation and Air Leakage Control, and Reroofing"
  - 2. SMACNA's "Architectural Sheet Metal Manual"

- C. SPRI Wind Design Standard: Manufacture and install roof edge components tested in accordance with ANSI/SPRI/FM 4435/ES-1 and capable of resisting the following design pressure:
  - 1. Design Pressure: As indicated on Drawings.
- D. FM Approvals Listing: Manufacture and install components that are listed in FM Approvals' "RoofNav" and approved for windstorm classification, indicated on the Drawings. Identify materials with name of fabricator and design approved by FM Approvals.
- E. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
  - 1. Temperature Change: 120 deg F, ambient; 180 deg F , material surfaces.

## 2.2 SHEET METALS

- A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.
- B. Aluminum Sheet: ASTM B209 (ASTM B209M), alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required; with smooth, flat surface.
  - 1. Exposed Coil-Coated Finish:
    - a. Three-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
    - 2. Color: Custom color as determined by the Architect.
    - 3. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with minimum total dry film thickness of 0.5 mil.

## 2.3 UNDERLAYMENT MATERIALS

- A. Felt: ASTM D226/D226M, Type II (No. 30), asphalt-saturated organic felt; nonperforated.
- B. Slip Sheet: Rosin-sized building paper, 3 lb/100 sq. ft. minimum.

## 2.4 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as



recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.

- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.
  - 1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
    - a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
    - b. Blind Fasteners: High-strength aluminum or stainless steel rivets suitable for metal being fastened.
    - c. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.
- C. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, non-sag, nontoxic, non-staining tape 1/2 inch wide and 1/8 inch thick.
- D. Elastomeric Sealant: ASTM C920, elastomeric polysulfide polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- E. Butyl Sealant: ASTM C1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.
- F. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.
- G. Bituminous Coating: Cold-applied asphalt emulsion in accordance with ASTM D1187/D1187M.
- H. Asphalt Roofing Cement: ASTM D4586, asbestos free, of consistency required for application.
- I. Reglets: Units of type, material, and profile required, formed to provide secure interlocking of separate reglet and counterflashing pieces, and compatible with flashing indicated with factory-mitered and -welded corners and junctions and with interlocking counterflashing on exterior face, of same metal as reglet.
  - 1. Source Limitations: Obtain reglets from single source from single manufacturer.
  - 2. Material: Stainless steel, 0.019 inch thick.
  - 3. Masonry Type: Provide with offset top flange for embedment in masonry mortar joint.
  - 4. Accessories:
    - a. Flexible-Flashing Retainer: Provide resilient plastic or rubber accessory to secure flexible flashing in reglet where clearance does not permit use of standard metal counterflashing or where Drawings show reglet without metal counterflashing.
    - b. Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of counterflashing's lower edge.

5. Finish: Mill.

## 2.5 FABRICATION, GENERAL

- A. Custom fabricate sheet metal flashing and trim to comply with details indicated and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required.
  1. Fabricate sheet metal flashing and trim in shop to greatest extent possible.
  2. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
  3. Verify shapes and dimensions of surfaces to be covered and obtain field measurements for accurate fit before shop fabrication.
  4. Form sheet metal flashing and trim to fit substrates without excessive oil-canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
  5. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.
- B. Fabrication Tolerances:
  1. Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
  2. Fabricate sheet metal flashing and trim that is capable of installation to tolerances specified.
- C. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.
  1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.
  2. Use lapped expansion joints only where indicated on Drawings.
- D. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal in accordance with cited sheet metal standard to provide for proper installation of elastomeric sealant.
- E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
- F. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard and by FM Global Property Loss Prevention Data Sheet 1-49 for application, but not less than thickness of metal being secured.
- G. Seams:
  1. Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.
  2. Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use. Rivet joints where necessary for strength.

3. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints where necessary for strength.

H. Do not use graphite pencils to mark metal surfaces.

## 2.6 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

A. Counterflashing: Shop fabricate interior and exterior corners. Fabricate from the following materials:

1. Aluminum: 0.032 inch thick.

B. Flashing Receivers: Fabricate from the following materials:

1. Aluminum: 0.032 inch thick.

C. Roof-Penetration Flashing: Fabricate from the following materials:

1. Stainless Steel: 0.019 inch thick.

D. Roof-Drain Flashing: Fabricate from the following materials:

1. Stainless Steel: 0.016 inch thick.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.

1. Verify compliance with requirements for installation tolerances of substrates.
2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
3. Verify that air- or water-resistant barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.

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

### 3.2 INSTALLATION OF UNDERLAYMENT

A. Felt Underlayment: Install felt underlayment, wrinkle free, using adhesive to minimize use of mechanical fasteners under sheet metal flashing and trim.

1. Install in shingle fashion to shed water.
2. Lap joints not less than 2 inches .

- B. Install slip sheet, wrinkle free, before installing sheet metal flashing and trim.
  - 1. Install in shingle fashion to shed water.
  - 2. Lapp joints not less than 4 inches .

### 3.3 INSTALLATION, GENERAL

- A. Install sheet metal flashing and trim to comply with details indicated and recommendations of cited sheet metal standard that apply to installation characteristics required unless otherwise indicated on Drawings.
  - 1. Install fasteners, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
  - 2. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of sealant.
  - 3. Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement.
  - 4. Install sheet metal flashing and trim to fit substrates and to result in watertight performance.
  - 5. Install continuous cleats with fasteners spaced not more than 12 inches o.c.
  - 6. Space individual cleats not more than 12 inches apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
  - 7. Install exposed sheet metal flashing and trim with limited oil-canning, and free of buckling and tool marks.
  - 8. Do not field cut sheet metal flashing and trim by torch.
  - 9. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.
  - 1. Coat concealed side of uncoated-aluminum and stainless steel sheet metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.
  - 2. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.
- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim.
  - 1. Space movement joints at maximum of 10 feet with no joints within 24 inches of corner or intersection.
  - 2. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with sealant concealed within joints.
  - 3. Use lapped expansion joints only where indicated on Drawings.
- D. Fasteners: Use fastener sizes that penetrate wood blocking or sheathing not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws.

- E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.
- F. Seal joints as required for watertight construction.
  - 1. Use sealant-filled joints unless otherwise indicated.
    - a. Embed hooked flanges of joint members not less than 1 inch into sealant.
    - b. Form joints to completely conceal sealant.
    - c. When ambient temperature at time of installation is between 40 and 70 deg F , set joint members for 50 percent movement each way.
    - d. Adjust setting proportionately for installation at higher ambient temperatures.
      - 1) Do not install sealant-type joints at temperatures below 40 deg F .
  - 2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."

### 3.4 INSTALLATION OF ROOF-DRAINAGE SYSTEM

- A. Install sheet metal roof-drainage items to produce complete roof-drainage system in accordance with cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.
- B. Expansion-Joint Covers: Install expansion-joint covers at locations and of configuration indicated on Drawings. Lap joints minimum of 4 inches in direction of water flow.

### 3.5 INSTALLATION OF ROOF FLASHINGS

- A. Install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and cited sheet metal standards.
  - 1. Provide concealed fasteners where possible, and set units true to line, levels, and slopes.
  - 2. Install work with laps, joints, and seams that are permanently watertight and weather resistant.
- B. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending minimum of 4 inches over base flashing. Install stainless steel draw band and tighten.
- C. Counterflashing: Coordinate installation of counterflashing with installation of base flashing.
  - 1. Insert counterflashing in reglets or receivers and fit tightly to base flashing.
  - 2. Extend counterflashing 4 inches over base flashing.
  - 3. Lap counterflashing joints minimum of 4 inches.
  - 4. Secure in waterproof manner by means of snap-in installation and sealant or lead wedges and sealant unless otherwise indicated.

- D. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with butyl sealant and clamp flashing to pipes that penetrate roof.

### 3.6 INSTALLATION OF WALL FLASHINGS

- A. Install sheet metal wall flashing to intercept and exclude penetrating moisture in accordance with cited sheet metal standard unless otherwise indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.

### 3.7 INSTALLATION OF MISCELLANEOUS FLASHING

- A. Equipment Support Flashing:
  - 1. Coordinate installation of equipment support flashing with installation of roofing and equipment.
  - 2. Weld or seal flashing with elastomeric sealant to equipment support member.

### 3.8 INSTALLATION TOLERANCES

- A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

### 3.9 CLEANING

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder.
- C. Clean off excess sealants.

### 3.10 PROTECTION

- A. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions.
- B. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended in writing by sheet metal flashing and trim manufacturer.
- C. Maintain sheet metal flashing and trim in clean condition during construction.
- D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures, as determined by Architect.

END OF SECTION 076200

SECTION 077100 - ROOF SPECIALTIES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Copings.
- B. Roof-edge specialties.
- C. Roof-edge drainage systems
- D. PVC downspout piping.
- E. Cast iron downspout boots.
- F. Reglets and counterflashings.
- G. Related Requirements:
  - 1. Section 061053 "Miscellaneous Rough Carpentry" for wood nailers, curbs, and blocking.
  - 2. Section 070500 "Common Work Results for Thermal and Moisture Protection."
  - 3. Section 075419 "Polyvinyl-Chloride (PVC) Roofing."
  - 4. Section 076200 "Sheet Metal Flashing and Trim" for custom- and site-fabricated sheet metal flashing and trim.
  - 5. Section 077200 "Roof Accessories" for set-on-type curbs, equipment supports, roof hatches, vents, and other manufactured roof accessory units.
  - 6. Section 079200 "Joint Sealants" for field-applied sealants between roof specialties and adjacent materials.
- H. Preinstallation Conference: Conduct conference at Project site.
  - 1. Refer to Section 075419 "Polyvinyl-Chloride (PVC) Roofing."

1.2 ACTION SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings:
  - 1. Include plans, elevations, expansion-joint locations, keyed details, and attachments to other work. Distinguish between plant- and field-assembled work.
  - 2. Include details for expansion and contraction; locations of expansion joints, including direction of expansion and contraction.
  - 3. Indicate profile and pattern of seams and layout of fasteners, cleats, clips, and other attachments.

4. Detail termination points and assemblies, including fixed points.
  5. Include details of special conditions.
- C. Samples: For each type of roof specialty and for each color and texture specified.
- D. Samples for Initial Selection: For each type of roof specialty indicated with factory-applied color finishes.
- E. Samples for Verification:
1. Include Samples of each type of roof specialty to verify finish and color selection, in manufacturer's standard sizes.
  2. Include copings, roof-edge specialties, roof-edge drainage systems, reglets and counterflashings made from 12-inch lengths of full-size components in specified material, and including fasteners, concealed joints, accessories, and attachments.

### 1.3 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For manufacturer.
- B. Product Certificates: For each type of roof specialty.
- C. Product Test Reports: For copings and roof-edge flashings, for tests performed by a qualified testing agency.

### 1.4 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For roofing specialties to include in maintenance manuals.
- B. Warranties as specified in this Section.”

### 1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer offering products meeting requirements that are FM Approvals listed for specified class and SPRI ES-1 tested to specified design pressure.
  1. Source Limitations: Obtain roof specialties approved by manufacturer providing roofing-system warranty specified in Section 075419 “Polyvinyl-Chloride (PVC) Roofing.”

### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Do not store roof specialties in contact with other materials that might cause staining, denting, or other surface damage. Store roof specialties away from uncured concrete and masonry.
- B. Protect strippable protective covering on roof specialties from exposure to sunlight and high humidity, except to extent necessary for the period of roof-specialty installation.



## 1.7 FIELD CONDITIONS

- A. Field Measurements: Verify profiles and tolerances of roof-specialty substrates by field measurements before fabrication. Indicate measurements on Shop Drawings.
- B. Coordination: Coordinate roof specialties with flashing, trim, and construction of parapets, roof deck, roof and wall panels, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

## 1.8 WARRANTY

- A. Roofing-System Warranty: Roof specialties are included in warranty provisions in Section 075419 "Polyvinyl-Chloride (PVC) Roofing."
- B. Special Warranty on Painted Finishes: Manufacturer agrees to repair finish or replace roof specialties that show evidence of deterioration of factory-applied finishes within specified warranty period.
  - 1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:
    - a. Color fading more than 5 Hunter units when tested according to ASTM D2244.
    - b. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
    - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
  - 2. Finish Warranty Period: 20 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Roof specialties shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.
- B. FM Approvals' Listing: Manufacture and install copings and roof-edge specialties that are listed in FM Approvals' "RoofNav" and approved for windstorm classifications specified for the Project. Identify materials with FM Approvals' markings.
- C. SPRI Wind Design Standard: Manufacture and install copings and roof-edge specialties tested according to SPRI ES-1 and capable of resisting the following design pressures:
  - 1. Design Pressure: As indicated on Drawings.
- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of thermal movements. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

## 2.2 COPINGS

- A. Metal Copings: Manufactured coping system consisting of metal coping cap in section lengths not exceeding 12 feet (3.6 m), concealed anchorage; with corner units, end cap units, and concealed splice plates with finish matching coping caps.
  1. Formed Aluminum Sheet Coping Caps: Aluminum sheet, (.050" minimum thickness) thickness as required to meet performance requirements.
    - a. Surface: Smooth, flat finish.
    - b. Finish: Three-coat fluoropolymer.
      - 1) Color: Custom color as selected by Architect from manufacturer's full range.
  2. Corners: Factory mitered and continuously welded.
  3. Coping-Cap Attachment Method: face leg hooked to continuous cleat with back leg fastener exposed, fabricated from coping-cap material. Install rivets in the backside of the drip leg into each cleat to prevent unauthorized removal of the coping caps.
    - a. Face-Leg Cleats: Concealed, continuous stainless steel.

## 2.3 ROOF-EDGE SPECIALTIES

- A. Canted Roof-Edge Fascia and Gravel Stop: Manufactured, two-piece, roof-edge fascia consisting of snap-on metal fascia cover in section lengths not exceeding 12 feet and a continuous formed galvanized-steel sheet cant, 0.028 inch thick, minimum, with extended vertical leg terminating in a drip-edge cleat. Provide matching corner units.
  1. Formed Aluminum Sheet Fascia Covers: Aluminum sheet, thickness as required to meet performance requirements, but in no case less than 0.040".
    - a. Surface: Smooth, flat finish.
    - b. Finish: Two-coat fluoropolymer.
      - 1) Color: As selected by Architect from manufacturer's full range.
- B. One-Piece Gravel Stops: Manufactured, one-piece, metal gravel stop in section lengths not exceeding 12 feet (3.6 m), with a horizontal flange and vertical leg, drain-through fascia terminating in a drip edge, and concealed splice plates of same material, finish, and shape as gravel stop. Provide matching corner units.
  1. Formed Aluminum Sheet Gravel Stops: Aluminum sheet, 0.040 inch thick.
    - a. Surface: Smooth, flat finish.
    - b. Finish: Two-coat fluoropolymer.
      - 1) Color: As selected by Architect from manufacturer's full range.

## 2.4 ROOF-EDGE DRAINAGE SYSTEMS

- A. Parapet Scuppers: Manufactured with closure flange trim to exterior, **4-inch**-wide wall flanges to interior, and base extending **4 inches** beyond cant or tapered strip into field of roof. Fasten gravel guard angles to base of scuppers.
  - 1. Formed Aluminum: 0.032 inch
- B. Cast Iron Downspout Boot: Provide downspout boots made from cast iron in sizes required to accommodate field conditions with inlets of size and shape to fit specified PVC downspout piping. Provide units with flanges and holes for countersunk anchor bolts.
  - 1. Outlet: Configured as required to connect to existing storm drainage system.
  - 2. Height above grade: Not less than 12-inches. Provide wall clamp and fasteners.
  - 3. Prime cast-iron downspout boots with zinc-rich primer. Finish with 2-coat urethane enamel system in color to match similar units on the site.
- C. PVC Downspout Piping: ASTM D2665, schedule 40 PVC plastic drainage piping sized to match existing adjacent piping and to receive existing aluminum gutter outlets. Provide fittings, offsets, angles, and other appurtenances to match the required configuration. Provide stainless steel clamps to secure the pipe to the building, spaced at not less than 48-inches vertically.
- D. Aluminum Finish: Three-coat fluoropolymer.
  - 1. Color: Custom color as selected by Architect from manufacturer's full range.

## 2.5 REGLETS AND COUNTERFLASHINGS

- A. Reglets: Manufactured units formed to provide secure interlocking of separate reglet and counterflashing pieces, from the following exposed metal:
  - 1. Formed Aluminum: 0.050 inch thick.
  - 2. Corners: Factory mitered and continuously welded.
  - 3. Surface-Mounted Type: Provide reglets with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
  - 4. Concrete Type, Embedded: Provide temporary closure tape to keep reglet free of concrete materials, special fasteners for attaching reglet to concrete forms, and guides to ensure alignment of reglet section ends.
  - 5. Masonry Type, Embedded: Provide reglets with offset top flange for embedment in masonry mortar joint.
- B. Counterflashings: Manufactured units of heights to overlap top edges of base flashings by 4 inches (100 mm) and in lengths not exceeding 12 feet, designed to snap into reglets or through-wall-flashing receivers and compress against base flashings with joints lapped, from the following exposed metal:
  - 1. Formed Aluminum: 0.024 inch thick.
- C. Accessories:

1. Flexible-Flashing Retainer: Provide resilient plastic or rubber accessory to secure flexible flashing in reglet where clearance does not permit use of standard metal counterflashing or where reglet is provided separate from metal counterflashing.
  2. Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of counterflashing lower edge.
- D. Aluminum Finish: Two-coat fluoropolymer.
1. Color: As selected by Architect from manufacturer's full range.

## 2.6 MATERIALS

- A. Aluminum Sheet: **ASTM B209 (ASTM B209M)**, alloy as standard with manufacturer for finish required, with temper to suit forming operations and performance required.
- B. Aluminum Extrusions: **ASTM B221 (ASTM B221M)**, alloy and temper recommended by manufacturer for type of use and finish indicated, finished as follows:

## 2.7 UNDERLAYMENT MATERIALS

- A. Self-Adhering, High-Temperature Sheet: Minimum **30 to 40 mils** thick, consisting of slip-resisting polyethylene-film top surface laminated to layer of butyl or SBS-modified asphalt adhesive, with release-paper backing; cold applied. Provide primer when recommended by underlayment manufacturer.
  1. Thermal Stability: ASTM D1970/D1970M; stable after testing at **240 deg F (116 deg C)**.
  2. Low-Temperature Flexibility: ASTM D1970/D1970M; passes after testing at minus **20 deg F (29 deg C)**.

## 2.8 MISCELLANEOUS MATERIALS

- A. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to meet performance requirements. Furnish the following unless otherwise indicated:
  1. Exposed Penetrating Fasteners: Gasketed screws with hex washer heads matching color of sheet metal.
  2. Fasteners for Aluminum: Series 300 stainless steel.
- B. Elastomeric Sealant for Exposed Applications: ASTM C920, elastomeric urethane sealant of type, grade, class, and use classifications required by roofing-specialty manufacturer for each application. Color shall be as selected by the Architect.
- C. Butyl Sealant for Concealed Applications: ASTM C1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type joints with limited movement.
- D. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D1187/D1187M.
- E. Asphalt Roofing Cement: ASTM D4586, asbestos free, of consistency required for application.

## 2.9 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- D. Coil-Coated Aluminum Sheet Finishes:
  - 1. High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
    - a. Three-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
    - b. Concealed Surface Finish: Apply pretreatment and manufacturer's standard acrylic or polyester backer finish consisting of prime coat and wash coat with a minimum total dry film thickness of **0.5 mil**.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
- B. Examine walls, roof edges, and parapets for suitable conditions for roof specialties.
- C. Verify that substrate is sound, dry, smooth, clean, sloped for drainage where applicable, and securely anchored.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 UNDERLAYMENT INSTALLATION

- A. Self-Adhering Sheet Underlayment: Apply primer if required by manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation. Apply wrinkle free, in shingle fashion to shed water, and with end laps of not less than **6 inches** staggered **24 inches** between courses. Overlap side edges not less than **3-1/2 inches**. Roll laps with roller. Cover underlayment within 14 days.

1. Apply continuously under copings, roof-edge specialties and reglets and counterflashings.
2. Coordinate application of self-adhering sheet underlayment under roof specialties with requirements for continuity with adjacent air barrier materials.

### 3.3 INSTALLATION, GENERAL

- A. General: Install roof specialties according to manufacturer's written instructions. Anchor roof specialties securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, underlayments, sealants, and other miscellaneous items as required to complete roof-specialty systems.
1. Install roof specialties level, plumb, true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.
  2. Provide uniform, neat seams with minimum exposure of solder and sealant.
  3. Install roof specialties to fit substrates and to result in weathertight performance. Verify shapes and dimensions of surfaces to be covered before manufacture.
  4. Torch cutting of roof specialties is not permitted.
  5. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
1. Coat concealed side of uncoated aluminum roof specialties with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
  2. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof specialties for waterproof performance.
- C. Expansion Provisions: Allow for thermal expansion of exposed roof specialties.
1. Space movement joints at a maximum of 40 feet with no joints within 18 inches of corners or intersections unless otherwise indicated on Drawings.
  2. When ambient temperature at time of installation is between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures.
- D. Fastener Sizes: Use fasteners of sizes that penetrate wood blocking or sheathing not less than 1-1/4 inches (32 mm) for nails and not less than 3/4 inch (19 mm) for wood screws.
- E. Seal concealed joints with butyl sealant as required by roofing-specialty manufacturer.
- F. Seal joints as required for weathertight construction. Place sealant to be completely concealed in joint. Do not install sealants at temperatures below 40 deg F (4 deg C).

### 3.4 COPING INSTALLATION

- A. Install cleats, anchor plates, and other anchoring and attachment accessories and devices with concealed fasteners.

- B. Anchor copings with manufacturer's required devices, fasteners, and fastener spacing to meet performance requirements.
  - 1. Interlock face and back leg drip edges of snap-on coping cap into cleated anchor plates anchored to substrate at 30-inch centers.
  - 2. Interlock face-leg drip edge into continuous cleat anchored to substrate 16-inch (406-mm) centers.

### 3.5 ROOF-EDGE SPECIALITIES INSTALLATION

- A. Install cleats, cants, and other anchoring and attachment accessories and devices with concealed fasteners.
- B. Anchor roof edgings with manufacturer's required devices, fasteners, and fastener spacing to meet performance requirements.

### 3.6 ROOF-EDGE DRAINAGE-SYSTEM INSTALLATION

- A. General: Install components to produce a complete roof-edge drainage system according to manufacturer's written instructions. Coordinate installation of roof perimeter flashing with installation of roof-edge drainage system.
- B. Parapet Scuppers: Install scuppers through parapet where indicated. Continuously support scupper, set to correct elevation, and seal flanges to interior wall face, over cants or tapered edge strips, and under roofing membrane.
  - 1. Anchor scupper closure trim flange to exterior wall and seal or solder to scupper.
  - 2. Loosely lock front edge of scupper with conductor head.
  - 3. Seal or solder exterior wall scupper flanges into back of conductor head.

### 3.7 REGLET AND COUNTERFLASHING INSTALLATION

- A. General: Coordinate installation of reglets and counterflashings with installation of base flashings.
- B. Embedded Reglets: See Division 04 Masonry Sections for installation of reglets.
- C. Surface-Mounted Reglets: Install reglets to receive flashings where flashing without embedded reglets is indicated on Drawings. Install at height so that inserted counterflashings overlap **4 inches** over top edge of base flashings.
- D. Counterflashings: Insert counterflashings into reglets or other indicated receivers; ensure that counterflashings overlap **4 inches** over top edge of base flashings. Lap counterflashing joints a minimum of **4 inches** and bed with butyl sealant. Fit counterflashings tightly to base flashings.

### 3.8 CAST IRON DRAINAGE BOOT AND PVC DOWNSPOUT PIPING INSTALLATION

- A. Install cast iron drainage boots where indicated and in accordance with the manufacturer's instructions according to the actual field conditions.

- B. Install downspout piping. All downspout joints shall be thoroughly cemented with pvc solvent adhesive. All downspout piping shall be secured to the building with clamps and screws to prevent slippage and displacement at not less than 48-inches on center vertically, but in no case less than three (3) clamps per length of run. Complete installation by connecting piping into specified downspout boot. Prime and paint PVC downspout piping with 3-coat exterior latex system, Semi-gloss sheen.

### 3.9 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder and sealants.
- C. Remove temporary protective coverings and strippable films as roof specialties are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain roof specialties in a clean condition during construction.
- D. Replace roof specialties that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION 077100



## SECTION 077200 - ROOF ACCESSORIES

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Roof curbs.
2. Equipment supports.

B. Related Sections:

1. Section 070500 "Common Work Results for Thermal and Moisture Protection."
2. Section 075419 "Polyvinyl-Chloride (PVC) Roofing."

#### 1.2 ACTION SUBMITTALS

- A. Product Data: For each type of roof accessory.
- B. Shop Drawings: For roof accessories.
- C. Samples: For each exposed product and for each color and texture specified.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Sample warranties.

#### 1.4 CLOSEOUT SUBMITTALS

- A. Operation and maintenance data.

#### 1.5 WARRANTY

- A. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finishes or replace roof accessories that show evidence of deterioration of factory-applied finishes within 20 years from date of Substantial Completion.

### PART 2 - PRODUCTS

#### 2.1 ROOF CURBS

- A. Roof Curbs: Internally reinforced roof-curb units capable of supporting superimposed live and dead loads, including equipment loads and other construction indicated on Drawings, bearing continuously on roof structure, and capable of meeting performance requirements; with welded or mechanically fastened and sealed corner joints, straight sides, stepped integral metal cant raised the thickness of roof insulation, and integrally formed deck-mounting flange at perimeter bottom.

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- B. Size: Coordinate dimensions with roughing-in information or Shop Drawings of equipment to be supported.
- C. Material:
  - 1. Except where indicated to be stainless steel, provide zinc-coated (galvanized) steel sheet, 0.064 inch thick.
  - 2. Where indicated, provide stainless steel sheet, 0.078 inch thick, manufacturer's standard finish.
- D. Construction:
  - 1. Curb Profile: Manufacturer's standard compatible with roofing system.
  - 2. Fabricate curbs to minimum height of 12 inches above roofing surface unless otherwise indicated.
  - 3. Top Surface: Level top of curb.
  - 4. Sloping Roofs: Where roof slope exceeds 1:48, fabricate curb with perimeter curb height tapered to accommodate roof slope so that top surface of perimeter curb is level. Equip unit with water diverter or cricket on side that obstructs water flow.
  - 5. Insulation: Factory insulated with 1-1/2-inch- thick glass-fiber board insulation.
  - 6. Liner: Same material as curb, of manufacturer's standard thickness and finish.
  - 7. Nailer: Factory-installed wood nailer under top flange on side of curb, continuous around curb perimeter.
  - 8. Wind Restraint Straps and Base Flange Attachment: Provide wind restraint straps, welded strap connectors, and base flange attachment to roof structure at perimeter of curb, of size and spacing required to meet wind uplift requirements.
  - 9. Platform Cap: Where portion of roof curb is not covered by equipment, provide weathertight platform cap formed from 3/4-inch-thick plywood covered with metal sheet of same type, thickness, and finish as required for curb.
  - 10. Metal Counterflashing: Manufacturer's standard, removable, fabricated of same metal and finish as curb.
  - 11. Security Grille: Provide for all units.
  - 12. Damper Tray: Provide damper tray or shelf.

## 2.2 EQUIPMENT SUPPORTS

- A. Equipment Supports: Rail-type metal equipment supports capable of supporting superimposed live and dead loads between structural supports, including equipment loads and other construction indicated on Drawings, spanning between structural supports; capable of meeting

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performance requirements; with welded corner joints, integral metal cant, and integrally formed structure-mounting flange at bottom.

- B. Size: Coordinate dimensions with roughing-in information or Shop Drawings of equipment to be supported.
- C. Material:
  - 1. Except where indicated to be stainless steel, provide zinc-coated (galvanized) steel sheet, 0.064 inch thick.
  - 2. Where indicated, provide stainless steel sheet, 0.078 inch thick, manufacturer's standard finish.
- D. Construction:
  - 1. Curb Profile: Profile as indicated on Drawings compatible with roofing system.
  - 2. Insulation: Factory insulated with 1-1/2-inch thick glass-fiber board insulation.
  - 3. Liner: Same material as equipment support, of manufacturer's standard thickness and finish.
  - 4. Nailer: Factory-installed continuous wood nailers under top flange on side of curb, continuous around support perimeter.
  - 5. Wind Restraint Straps and Base Flange Attachment: Provide wind restraint straps, welded strap connectors, and base flange attachment to roof structure at perimeter of curb of size and spacing required to meet wind uplift requirements.
  - 6. Platform Cap: Where portion of equipment support is not covered by equipment, provide weathertight platform cap formed from 3/4-inch-thick plywood covered with metal sheet of same type, thickness, and finish as required for curb.
  - 7. Metal Counterflashing: Manufacturer's standard, removable, fabricated of same metal and finish as equipment support.
  - 8. On ribbed or fluted metal roofs, form deck-mounting flange at perimeter bottom to conform to roof profile.
  - 9. Fabricate equipment supports to minimum height of 12 inches above roofing surface unless otherwise indicated.
  - 10. Sloping Roofs: Where roof slope exceeds 1:48, fabricate each support with height to accommodate roof slope so that tops of supports are level with each other. Equip supports with water diverters or crickets on sides that obstruct water flow.
  - 11. Security Grille: Provide for all units.

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2.3 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items required by manufacturer for a complete installation.
- B. Wood Nailers: Softwood lumber, pressure treated with waterborne preservatives for aboveground use, acceptable to authorities having jurisdiction, containing no arsenic or chromium, and complying with AWPA C2; not less than 1-1/2 inches thick.
- C. Security Grilles: 3/4-inch 19-mm diameter, ASTM A1011/A1011M steel bars spaced 6 inches o.c. in one direction and 12 inches o.c. in the other, shop-primed for field finish.
- D. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D1187/D1187M.
- E. Underlayment:
  - 1. Self-Adhering, High-Temperature Sheet: Minimum 30 to 40 mils thick, consisting of slip-resisting polyethylene-film top surface laminated to layer of butyl or SBS-modified asphalt adhesive, with release-paper backing; cold applied. Provide primer when recommended by underlayment manufacturer.
- F. Fasteners: Roof accessory manufacturer's recommended fasteners suitable for application and metals being fastened. Match finish of exposed fasteners with finish of material being fastened. Provide nonremovable fastener heads to exterior exposed fasteners. Furnish the following unless otherwise indicated:
- G. Gaskets: Manufacturer's standard tubular or fingered design of neoprene, EPDM, PVC, or silicone or a flat design of foam rubber, sponge neoprene, or cork.
- H. Elastomeric Sealant: ASTM C920, elastomeric polymer sealant as recommended by roof accessory manufacturer for installation indicated; low modulus; of type, grade, class, and use classifications required to seal joints and remain watertight.
- I. Butyl Sealant: ASTM C1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for expansion joints with limited movement.
- J. Asphalt Roofing Cement: ASTM D4586/D4586M, asbestos free, of consistency required for application.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General: Verify dimensions of roof openings for roof accessories. Install roof accessories according to manufacturer's written instructions.
  - 1. Install roof accessories level; plumb; true to line and elevation; and without warping, jogs in alignment, buckling, or tool marks.
  - 2. Anchor roof accessories securely in place so they are capable of resisting indicated loads.

August 3

3. Use fasteners, separators, sealants, and other miscellaneous items as required to complete installation of roof accessories and fit them to substrates.
  4. Install roof accessories to resist exposure to weather without failing, rattling, leaking, or loosening of fasteners and seals.
- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
1. Coat concealed side of stainless steel roof accessories with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
  2. Underlayment: Where installing roof accessories directly on cementitious or wood substrates, install a course of underlayment and cover with manufacturer's recommended slip sheet.
- C. Security Grilles: Weld bar intersections and, using tamper-resistant bolts, attach the ends of bars to structural frame or primary curb walls.
- D. Seal joints with elastomeric or butyl sealant as required by roof accessory manufacturer.

### 3.2 REPAIR AND CLEANING

- A. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing according to ASTM A780/A780M.
- B. Touch up factory-applied finishes according to the manufacturer's recommendations.
- C. Clean exposed surfaces according to manufacturer's written instructions.
- D. Replace roof accessories that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION 077200

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## SECTION 07 92 00 - JOINT SEALANTS

### PART 1 GENERAL

#### 1.01 SUMMARY

A. Section Includes:

1. Surface preparation.
2. Sealant and primers, backer rods, bond breakers and accessories.

B. Related Sections:

1. Section 070500 "Common Work Results for Thermal and Moisture Protection."

#### 1.02 SYSTEM DESCRIPTION

A. Work shall include providing sealant at intersection of construction components within and exterior to building, including, but not limited to the following:

1. Exterior joints in the following vertical surfaces and non-traffic horizontal surfaces:
  - a. Control and expansion joints in cast-in-place concrete.
  - b. Joints between metal panels.
  - c. Joints between different materials listed above.
  - d. Perimeter joints between materials listed above and frames of doors and windows.
  - e. Control and expansion joints in ceiling and overhead surfaces.
  - f. Under thresholds.
  - g. Refrigerant lines and other Div. 22/23 and 26 items entering building.
  - h. Joints in exposed roof counter flashing.
  - i. Other joints as indicated.
2. Exterior joints in the following horizontal traffic surfaces:
  - a. Control, expansion, and isolation joints in cast-in-place concrete slabs.
  - b. Other joints as indicated.

#### 1.03 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 01 Specification Sections.

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

- a. Include manufacturer's surface preparation and installation instructions.
  - b. List of primers recommended for each application.
2. Submit samples of each color required for each type of joint sealer exposed to view in duplicate.
  3. Certifications: Indicate compliance with standards specified in duplicate.

#### 1.04 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has specialized in installing joint sealants similar in material, design, and extent to those indicated for this Project and whose work has resulted in joint-sealant installations with a record of successful in-service performance.
- B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.
- C. All materials shall be verified by this Contractor to be compatible with adjacent materials.

#### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration date, pot life, curing time, and mixing instructions for multicomponent materials.
- B. Store and handle materials in compliance with manufacturer's written instructions to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

#### 1.06 PROJECT CONDITIONS

- A. Environmental Limitations: Do not proceed with installation of joint sealants under the following conditions:
  1. When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 40 degrees F. and greater than 100 degrees F.
  2. When joint substrates are wet.
- B. Joint-Width Conditions: Do not proceed with installation of joint sealants where joint widths are less than, or greater than, those allowed by joint sealant manufacturer for applications indicated.

#### 1.07 WARRANTY

- A. Special Warranty:



1. Submit two copies of a written guarantee agreeing to repair or replace joint sealers which fail to perform as air tight and water-tight joints; or fail in joint adhesion, cohesion, abrasion resistance weather resistance, or general durability; or appear to deteriorate or become unserviceable or causing an objectionable appearance resulting from either defective or non-conforming materials and workmanship or in any other manner not clearly specified by submitted manufacturer's data as an inherent quality of the material for the exposure indicated. Provide one-year Warranty.
  - a. Defects shall include, but are not limited to:
    - 1) Staining from abutting materials or filler.
    - 2) Migrating, bleeding into, or staining abutting materials.
    - 3) Unsightly surface deformation by causes other than movement.
    - 4) Excessive color change, chalking, or dust pick-up.
    - 5) Railing adhesively or cohesively where maximum elongation is less than 25% of designed width of exposed joints.
    - 6) Hardening to more than 25% over specified hardness.
  - b. Replace sealants which fail because of loss of cohesion or adhesion or do not cure.

## PART 2 PRODUCTS

### 2.01 MANUFACTURERS

- A. Products listed below shall be as offered by one of the following manufacturers:

1. Approved Manufacturers:
  - a. [Dow Corning Corp.](#) (800-248-2481)
  - b. [General Electric \(GE\) Silicones](#) (800-255-8886)
  - c. [BASF Building Systems](#) (952-496-6000)
  - d. [Bostik Inc.](#) (800-523-2678)
  - e. [Pecora Corp.](#) (800-523-6688)
  - f. [Tremco, Inc.](#), an RPM Company (800-562-2728)

### 2.02 JOINT SEALANTS

- A. General:

1. Colors: As shown on Interior Finish Index and Exterior Finish Index, or if not shown, match sealant material to colors of adjacent materials, as approved by [Architect] [Owner's Representative], unless indicated otherwise.

2. Elastomeric Sealant Standard: Comply with [ASTM C920](#) and other requirements indicated for each liquid-applied chemically curing sealant, including those referencing [ASTM C920](#) classifications for type, grade, class, and uses.
  3. Stain-Test-Response Characteristics: Where elastomeric sealants are specified to be non-staining to porous substrates, provide products that have undergone testing according to [ASTM C1248](#) and have not stained porous joint substrates indicated for Project.
  4. Suitability for Contact with Food: Where elastomeric sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 [CFR 177.2600](#).
- B. Exterior joints greater than 1/2":
1. Two-part non-sag, polyurethane type, meeting [ASTM C920](#), Type M, Grade NS, Class 50, Use NT, with 20 year life expectancy.
  2. Acceptable Products:
    - a. "Chem-Calk 2000"; [Bostik Inc.](#) (800-523-2678)
    - b. "Dymeric 240 or 240FC" ; [Tremco, Inc.](#), an RPM Company (800-562-2728)
    - c. "Dynatrol II"; [Pecora Corp.](#) (800-523-6688)
    - d. "MasterSeal NP2"; [BASF Building Systems](#) (952-496-6000)
- C. Sealant Materials – Glazing (Installed in Field):
1. Sealant composition shall be a silicone base, single component, solvent curing, capable of withstanding movement of up to 50 percent of joint width and shore a hardness of 26. Sealant shall conform to [ASTM C920](#).
  2. Acceptable Products:
    - a. "SILGLAZE N"; [General Electric \(GE\) Silicones](#) (800-255-8886)
    - b. "SPECTRUM 2"; [Tremco, Inc.](#), an RPM Company (800-562-2728)

## 2.03 ACCESSORIES

- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- C. Joint Filler Backer Rod: [ASTM C1330](#); round, closed cell polyethylene, non-gassing rod, with surface skin, sized to produce 25% compression when installed in joint.

D. Bond Breaker Tape:

1. Approved Manufacturers:

- a. Pressure Sensitive 470 or 481 Polyethylene"; [3M Adhesives, Coatings and Sealers Div., \(800-328-1687\)](#)
- b. Approved Substitution

E. Cleaners for Nonporous Surfaces: Provide non-staining, chemical cleaners of type which are acceptable to manufacturers of sealants and sealant backing materials, which are not harmful to substrates and adjacent nonporous materials, and which do not leave oily residues or otherwise have a detrimental effect on sealant adhesion or in-service performance.

1. Provide cleaner conditioner required for glass and glazed surfaces as recommended by sealant manufacturer.

F. Masking Tape: Provide non-staining, nonabsorbent type compatible with joint sealants and to surfaces adjacent to joints.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine joints indicated to receive joint sealers, with Installer present, for compliance with requirements for joint configuration, installation tolerances and other conditions affecting joint sealer performance. Do not proceed with installation of joint sealers until unsatisfactory conditions have been corrected. Beginning of Installation means acceptance of all existing conditions making this Contractor responsible for correcting all unsatisfactory and defective work encountered at his expense.

3.02 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealers to comply with recommendations of joint sealer manufacturers and the following requirements:
1. Remove all foreign material from joint substrates which could interfere with adhesion of joint sealer, including dust; paints, except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer; old joint sealers; oil; grease; waterproofing; water repellents; water; surface dirt; and frost.
  2. Clean concrete, masonry, unglazed surfaces of ceramic tile and similar porous joint substrate surfaces, by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealers. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air. Remove laitance and form release agents from concrete.

- B. Joint Priming: Prime joint substrates where indicated or where recommended by joint sealer manufacturer based on preconstruction joint sealer-substrate tests or prior experience. Apply primer to comply with joint sealer manufacturer's recommendations. Confine primers to areas of joint sealer bond, do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces which otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears such as masonry or EIFS materials. Remove tape immediately after tooling without disturbing joint seal.

### 3.03 INSTALLATION - JOINT SEALERS

- A. General: Comply with joint sealer manufacturers' printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply. Surfaces and air temperature shall be greater than 30 degrees F and less than 100 degrees F.
- B. Joint Priming: Prime joint substrates where recommended in writing by joint sealant manufacturer, based on reconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
  - 1. Ensure that primer fully covers surfaces to which sealant is to adhere.
  - 2. Apply with bristle brush. Do not flood surfaces.
  - 3. Allow primer to dry 30 minutes minimum or as recommended by manufacturer prior to application of backing rod and sealant.
- C. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
  - 1. Do not leave gaps between ends of sealant backings.
  - 2. Do not stretch, twist, puncture, or tear sealant backings.
  - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- D. Install bond breaker tape between sealants and joint fillers, compression seals, or back of joints where adhesion of sealant to surfaces at back of joints would result in sealant failure. Bond breaker must be used in all conditions where three-sided adhesion may be possible.
- E. Install sealants by proven techniques to comply with the following and at the same time backings are installed:
  - 1. Place sealants so they directly contact and fully wet joint substrates.

2. Completely fill recesses provided for each joint configuration.
  3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
  4. Joint Size:
    - a. Depth of joint shall not exceed width of joint.
    - b. Minimum depth: 1/4"
    - c. Maximum depth: 1/2"
- F. Tooling of Non-Sag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
1. Remove excess sealants from surfaces adjacent to joint.
  2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
    - a. Provide concave joint configuration per Figure 5A in [ASTM C 1193](#), unless otherwise indicated.
    - b. Provide flush joint configuration, per Figure 5B in [ASTM C 1193](#), where indicated.
    - c. Provide recessed joint configuration, per Figure 5C in [ASTM C 1193](#), of recess depth and at locations indicated.
      - 1) Use masking tape to protect adjacent surfaces of recessed tooled joints.
      - 2) All joints shall be free of air pockets, foreign embedded matter, ridges, and sags.

#### 3.04 CURE:

- A. Cure sealant in compliance with manufacturer's instructions and recommendations to obtain high, early bond strength, internal cohesion strength and surface durability.

#### 3.05 CLEANING:

- A. Clean off excess sealants or sealant smears adjacent to joints as work progresses by methods and with cleaning materials approved by manufacturers of joint sealers and of products in which joints occur. Remove masking material immediately following sealant application.

3.06 PROTECTION:

- A. Protect joint sealers during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage and deterioration occurs, cut out and remove damaged or deteriorated joint sealers immediately and reseal joints with new materials to produce joint sealer installations with repaired areas indistinguishable from original work.

END OF SECTION 07 92 00

SECTION 080500 – COMMON WORK RESULTS FOR OPENINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes common requirements for Division 08 Sections, including but not limited to the following:

- 1. All labor materials, tools, and equipment for compliance with fire performance, life safety, and accessibility standards required by Authorities Having Jurisdiction for the Project.

- B. Related Sections:

- 1. Section 061053 “Miscellaneous Rough Carpentry” for wood blocking, furring, and supplementary support requirements for openings.
- 2. Section 070500 “Common Work Results for Thermal and Moisture Protection.”
- 3. Section 076200 “Sheet Metal Flashing and Trim.”
- 4. Section 079200 “Joint Sealants.”

1.3 REFERENCES AND STANDARDS

- A. Refer to Division 01 and the requirements of each Division 08 Section, and as follows:
- B. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- C. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
- D. Where copies of standards are needed to perform a required construction activity, obtain copies directly from a valid publication source.

1.4 DEFINITIONS

- A. Damp Location (Interior): A location that is normally or periodically subject to condensation of moisture in, on, or adjacent to surfaces.
- B. Dry Location (Interior): A location not normally subject to dampness but which may subject to temporary dampness provided ventilation is adequate to prevent an accumulation of moisture.

- C. Wet Location (Interior): A location in which water or other liquid can drip, splash, or flow on or against a surface, including but not limited to food preparation areas, janitor closets with sinks, showers, and saunas.

#### 1.5 SUBMITTALS

- A. Schedule and manage submittals as necessary for proper sequencing and performance of the Work of this Division and related Divisions. Refer to subsequent Sections for specific submittal requirements.
- B. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- C. Shop Drawings: Include plans, elevations, sections, full-size details, and attachments to other work.
  - 1. Include details of provisions for assembly expansion and contraction and for draining moisture occurring within the assembly to the exterior.
  - 2. Include full-size isometric details of each type of vertical-to-horizontal intersection of components, showing the following:
    - a. Joinery, including concealed welds.
    - b. Anchorage.
    - c. Expansion provisions.
    - d. Glazing.
    - e. Flashing and drainage.
  - 3. Show connection to and continuity with adjacent thermal, weather, air, and vapor barriers.
  - 4. For systems incorporating electrical components, include point-to-point wiring diagrams showing the following:
    - a. Power requirements for each electrically-operated hardware component.
    - b. Location and types of switches, signal device, conduit sizes, and number and size of wires.
  - 5. Delegated-Design Submittal: Include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation, showing compliance with performance requirements indicated.
- D. Finish Samples:
  - 1. For Initial Selection: Manufacturer's color charts showing full range of available selections.
  - 2. For Verification: For each type of exposed finish required, provide specified finish applied to the specified substrates in manufacturer's standard sizes.



E. Schedules:

1. Prepare and submit a complete and coordinated door, frame, and hardware schedule to maintain clarity and accuracy of communication and review processes.

F. Refer to the Division 08 Submittal Schedule at the end of this Section

1.6 QUALITY ASSURANCE

- A. Engage experienced installers who have been trained and approved by the manufacturers of products and systems specified.
- B. Provide factory-trained field representatives to monitor installations, start-up, field quality testing, and demonstration procedures.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products wrapped or crated to provide protection during transit and job storage.
- B. Provide additional protection to prevent damage to finish of factory-finished products.
- C. Deliver welded frames with removable spreader bars across bottom of frames to maintain dimensional characteristics.
- D. Label each item, before shipping, to show location, size.
- E. Remove and replace items damaged during ship and handling.
- F. Store products at building site according to manufacturer recommendations.
  1. Place units on minimum 4-inch-high wood blocking.
  2. Avoid using non-vented plastic or canvas shelters that could create a humidity chamber. If packaging becomes wet, remove cartons immediately.
  3. Provide minimum 1/4-inch spaces between stacked items to permit air circulation.
  4. Provide a secure locked area for hardware and electrical components.

PART 2 - PRODUCTS

2.1 PRODUCTS, GENERAL

- A. Product Options: Drawings and Specifications establish requirements for aesthetic effects and performance characteristics of assemblies. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction. Do not change intended aesthetic effects except with Architect's approval. If changes are proposed, submit comprehensive explanatory data for review.

- B. Source Limitations: Obtain each type of product or group of related products from a single manufacturer.
- C. Compatibility: The Contractor is responsible for assuring the compatibility of products used throughout the Project.
- D. Defects: For the purposes of correction or warranty claims, product defects include but are not limited to:
  - 1. Workmanship that does not meet the specified requirements for appearance or function or that deviates from the manufacturer's recommendations.
  - 2. Glass breakage
  - 3. Structural failures, including, but not limited to, excessive deflection.
  - 4. Noise or vibration created by wind and thermal and structural movements.
  - 6. Deterioration of metals, and other materials beyond normal weathering.
  - 7. Air and water penetration through fixed glazing and framing areas.
  - 8. Failure of operating components.
  - 9. Loosening or weakening of fasteners, attachments, and other components.
  - 10. Deterioration of coating systems, including but not limited to:
    - a. Color fading more than 5 Hunter units when tested according to ASTM D2244.
    - b. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
    - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

## 2.2 FABRICATION

- A. Field Measurements: Verify openings by field measurements before fabrication.
- B. Hardware Preparation: Factory prepare products to receive scheduled hardware, and, when applicable, electrical wiring; include cutouts, reinforcement, mortising, drilling, and tapping according to ANSI/SDI A250.6, the Door Hardware Schedule, and templates.
  - 1. Reinforce doors and frames to receive non-templated, mortised, and surface-mounted door hardware.
  - 2. Comply with BHMA A156.115 for preparing hollow-metal doors and frames for hardware.
- C. Glazed Lites: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with mitered hairline joints.

## 2.3 FINISHES

- A. Refer to requirements of each subsequent Division 08 Section for specific finish requirements.

### PART 3 - EXECUTION

#### 3.1 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) recommended by manufacturer for optimum results. Do not install products environmental conditions outside manufacturer's absolute limits.

#### 3.2 EXAMINATION

- A. Examine surfaces and field conditions under which Work is to be performed.
- B. Document conditions of substrates which are detrimental to proper installation and timely completion of work and report them to the Construction Manager.
- C. Verify all dimensions taken at job site affecting the Work.

#### 3.3 PREPARATION

- A. Prepare rough openings for installation of products.
- B. Supplement with blocking, nailers, bracing, supplementary framing, sill sealers, gaskets, and other items required for completion of work according to the Contract Documents and the manufacturer's instructions.
- C. Take necessary measures for weatherization of openings before installation of products, including head and sill flashings and protection of jamb conditions.
- D. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry construction. Deliver such items to Project site in time for installation.
- E. Separate incompatible materials to prevent deterioration using means recommended by the product manufacturer.
  - 1. Where metal is in contact with dissimilar metals, protect against galvanic action by painting contact surfaces with materials recommended by manufacturer for this purpose or by installing nonconductive spacers.
  - 2. Where aluminum is in contact with concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.
- F. Drill and tap components to receive non-templated, mortised, and surface-mounted hardware.

#### 3.4 INSTALLATION

- A. Beginning installation will be considered the Installer's acceptance of existing conditions.
- B. Install products according to the manufacturer's instructions to achieve the work results indicated in the Contract Documents.

- C. Set continuous sill members and flashing in full sealant bed, as specified in Section 079200 "Joint Sealants," to produce weathertight installation.
- D. Install components plumb and true in alignment with established lines and grades.
- E. Install operable units level and plumb, securely anchored, and without distortion. Adjust weatherstripping contact and hardware movement to produce proper operation.
- F. Install glazing as specified in Section 088000 "Glazing."
- G. Install weatherseal sealant according to Section 079200 "Joint Sealants" and according to sealant manufacturer's written instructions to produce weatherproof joints. Install joint filler behind sealant as recommended by sealant manufacturer.
- H. Install doors to produce smooth operation and tight fit at contact points.
  - 1. Produce weathertight enclosure and tight fit at weather stripping.
  - 2. Install surface-mounted entrance door hardware according to entrance door hardware manufacturers' written instructions using concealed fasteners to greatest extent possible.

### 3.5 DEMONSTRATION AND TRAINING

- A. For systems and operating units, schedule demonstration and training activities with the Owner's personnel to review basic operating procedures, troubleshooting, and protocol for emergencies. Arrange for an authorized field representative trained by the manufacturer to conduct demonstration and training activities.

### 3.6 ADJUSTING

- A. Adjust installed work to provide for smooth and easy opening and closing, tight fit against jambs, head, and sill, and secure attachment to the work of others.
- B. Lubricate bearings and sliding parts; adjust doors, windows and other components to operate easily, free from warp, twist, or distortion and fitting weathertight for entire perimeter.

### 3.7 FINISHING

- A. Touch-Up of Pre-Applied Finishes: When acceptable to the Design-Build entity, perform touch up of factory-applied or shop-applied finishes in the field using appropriate materials. Products that cannot be satisfactorily touched up in the field shall be replaced.
- B. Field Finishing: Refer to Division 09 for field-applied finishing systems.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

3.8 PROTECTION AND CLEANING

- A. Protect installed work using adequate and suitable means during and after installation until accepted by Owner.
- B. Remove, repair or replace materials that have been damaged prior to final acceptance.
- C. Comply with Division 01 requirements for progress cleaning and final cleaning procedures.
- D. Clean installed products according to the manufacturer's maintenance instructions

3.9 FIELD QUALITY CONTROL

- A. Inspection Agency: Engage a qualified inspector to perform inspections and to prepare and distribute reports.
- B. Inspections: As required by Authorities Having Jurisdiction.
- C. Repair or remove and replace installations where inspections indicate that they do not comply with specified requirements.
- D. Reinspect repaired or replaced installations to determine if replaced or repaired assembly installations comply with specified requirements.
- E. Prepare and submit separate inspection report for each fire-rated door assembly indicating compliance with each item listed in NFPA 80 and NFPA 101.

END OF SECTION 080500

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SECTION 084113 - ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Aluminum-framed entrances.
- B. Aluminum-framed storefront framing.

1.2 RELATED REQUIREMENTS

- A. Section 070500 "Common Work Results for Thermal and Moisture Protection."
- B. Section 079200 "Joint Sealants"
- C. Section 080500 "Common Work Results for Openings."
- D. Section 088000 "Glass Glazing."

1.1 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: For aluminum-framed entrances and storefronts. Include plans, elevations, sections, full-size details, and attachments to other work.
  - 1. Include details of provisions for assembly expansion and contraction and for draining moisture occurring within the assembly to the exterior.
  - 2. Include full-size isometric details of each type of vertical-to-horizontal intersection of aluminum-framed entrances and storefronts, showing the following:
    - a. Joinery, including concealed welds.
    - b. Anchorage.
    - c. Expansion provisions.
    - d. Glazing.
    - e. Flashing and drainage.
  - 3. Show connection to and continuity with adjacent thermal, weather, air, and vapor barriers.
  - 4. Include point-to-point wiring diagrams showing the following:
    - a. Power requirements for each electrically operated door hardware.
    - b. Location and types of switches, signal device, conduit sizes, and number and size of wires.

5. Delegated-Design Submittal: Include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation, showing compliance with performance requirements indicated.
- C. Samples for Verification: For each type of exposed finish required, in manufacturer's standard sizes.
- D. Fabrication Sample: Of each vertical-to-horizontal intersection of assemblies, made from 12-inch lengths of full-size components and showing details of the following:
  1. Joinery, including concealed welds.
  2. Anchorage.
  3. Expansion provisions.
  4. Glazing.
  5. Flashing and drainage.
- E. Entrance Door Hardware Schedule: Prepared by or under supervision of supplier, detailing fabrication and assembly of entrance door hardware, as well as procedures and diagrams. Coordinate final entrance door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of entrance door hardware.

## 1.2 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For aluminum-framed entrances and storefronts to include in maintenance manuals.
- B. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of entrance door hardware.
- C. Executed warranties as specified.

## 1.3 QUALITY ASSURANCE

- A. Refer to Section 080500 "Common Work Results for Openings."

## 1.4 MOCKUPS

- A. Refer to Division 08 Mock-Up Schedule, Section 080500 "Common Work Results for Openings."

## 1.5 WARRANTIES

- A. Special Warranty: Provide Manufacturer's written agreement to repair or replace components of aluminum-framed entrances and storefronts that do not comply with requirements or that exhibit defects in materials or workmanship within specified warranty period.
  1. Defects include, but are not limited to, the following:
    - a. Structural failures, including, but not limited to, excessive deflection.



- b. Noise or vibration created by wind and thermal and structural movements.
    - c. Deterioration of metals, and other materials beyond normal weathering.
    - d. Water penetration through fixed glazing and framing areas.
    - e. Failure of operating components.
  2. Warranty Period: Five years from date of Substantial Completion.
- B. Special Finish Warranty: Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of factory-applied finishes within specified warranty period.
  1. Deterioration includes, but is not limited to, the following:
    - a. Color fading more than 5 Hunter units when tested according to ASTM D2244.
    - b. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
    - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
  2. Warranty Period: 10 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS AND PRODUCTS

- A. Basis of Design: Trifab 601/601T system manufactured by [Kawneer North America](#) (877-767-9107). Equivalent systems by other qualified manufacturers will be accepted, subject to compliance with specified requirements.
- B. Other Acceptable Manufacturers:
  1. [Oldcastle Building Envelope](#) (866-653-2278)
  2. [Tubelite](#) (800-866-2227)
  3. [YKK/AP](#) (678-838-6000)

### 2.2 PERFORMANCE REQUIREMENTS

- A. General Performance: Aluminum-framed entrances and storefronts shall withstand movements of supporting structure, including, but not limited to, twist, column shortening, long-term creep, and deflection from uniformly distributed and concentrated live loads.
- B. Structural Loads:
  1. Wind Loads: As indicated on Drawings.
  2. Other Design Loads: As indicated on Drawings.
- C. Deflection of Framing Members At Design Wind Pressure:
  1. Deflection Normal to Wall Plane: Limited to 1/175 of clear span for spans of up to 13 feet 6 inches and to 1/240 of clear span plus 1/4 inch for spans greater than 13 feet 6 inches or an amount that restricts edge deflection of individual glazing lites to 3/4 inch, whichever is less.
  2. Deflection Parallel to Glazing Plane: Limited to 1/360 of clear span or 1/8 inch, whichever is smaller.

3. Cantilever Deflection: Where framing members overhang an anchor point, as follows:
  - a. Perpendicular to Plane of Wall: No greater than  $1/240$  of clear span plus  $1/4$  inch for spans greater than 11 feet 8- $1/4$  inches or  $1/175$  times span, for spans of less than 11 feet 8- $1/4$  inches .

D. Structural Performance:

1. Test Method: ASTM E330/E330M.
2. Test Durations: As required by design wind velocity, but not less than 10 seconds.
3. Results:
  - a. When tested at positive and negative wind-load design pressures, storefront assemblies, including entrance doors, do not evidence deflection exceeding specified limits.
  - b. When tested at 150 percent of positive and negative wind-load design pressures, storefront assemblies, including entrance doors and anchorage, do not evidence material failures, structural distress, or permanent deformation of main framing members exceeding 0.2 percent of span.

E. Air Infiltration:

1. Test Method: ASTM E283.
2. Results:
  - a. Fixed Framing and Glass Area: Maximum air leakage of 0.06 cfm/sq. ft. at a static-air-pressure differential of 1.57 lbf/sq. ft.
  - b. Entrance Doors: Single Doors: Maximum air leakage of 0.5 cfm/sq. ft. at a static-air-pressure differential of 1.57 lbf/sq. ft.

F. Water Penetration under Static Pressure:

1. Test Method: ASTM E331.
2. Results: No evidence of water penetration through fixed glazing and framing areas, including entrance doors, when tested according to a minimum static-air-pressure differential of 20 percent of positive wind-load design pressure, but not less than 6.24 lbf/sq. ft.

G. Water Penetration under Dynamic Pressure:

1. Test Method: AAMA 501.1.
2. Results:
  - a. No evidence of water penetration through fixed glazing and framing areas when tested at dynamic pressure equal to 20 percent of positive wind-load design pressure, but not less than 6.24 lbf/sq. ft.

- b. Maximum Water Leakage: No uncontrolled water penetrating assemblies or water appearing on assemblies' normally exposed interior surfaces from sources other than condensation.
  - 1) Water leakage does not include water controlled by flashing and gutters, or water that is drained to exterior.
- H. Seismic Performance: Aluminum-framed entrances and storefronts shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
- I. Energy Performance: Certify and label energy performance according to NFRC as follows:
  - 1. Thermal Transmittance (U-factor): Fixed glazing and framing areas as a system shall have U-factor of not more than 0.36 Btu/sq. ft. x h x deg F as determined according to NFRC 100.
  - 2. Solar Heat Gain Coefficient (SHGC): Fixed glazing and framing areas as a system shall have SHGC of no greater than 0.36 as determined according to NFRC 200.
  - 3. Condensation Resistance: Fixed glazing and framing areas as a system shall have an NFRC-certified condensation resistance rating of no less than 75 as determined according to NFRC 500.
- J. Thermal Movements: Allow for thermal movements resulting from ambient and surface temperature changes.
  - 1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
  - 2. Thermal Cycling: No buckling; stress on glass; sealant failure; excess stress on framing, anchors, and fasteners; or reduction of performance when tested according to AAMA 501.5.
    - a. High Exterior Ambient-Air Temperature: That which produces an exterior metal-surface temperature of 180 deg F (82 deg C).
    - b. Low Exterior Ambient-Air Temperature: 0 deg F (minus 18 deg C).
    - c. Interior Ambient-Air Temperature: 75 deg F (24 deg C).

## 2.3 STOREFRONT SYSTEMS

- A. Framing Members: Manufacturer's extruded- or formed-aluminum framing members of thickness required and reinforced as required to support imposed loads.
  - 1. Exterior Framing Construction: Thermally broken.
  - 2. Glazing System: Retained mechanically with gaskets on four sides.
  - 3. Glazing Plane: Center.
  - 4. Finish: High-performance organic finish.
  - 5. Fabrication Method: Field-fabricated stick system.

6. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.

7. Steel Reinforcement: As required by manufacturer.

B. Backer Plates: Manufacturer's standard, continuous backer plates for framing members, if not integral, where framing abuts adjacent construction.

C. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with non-staining, nonferrous shims for aligning system components.

#### 2.4 ENTRANCE DOOR SYSTEMS

A. Manufacturer's standard glazed entrance doors for swing operation.

B. Door Construction: 1-3/4-inch overall thickness, with minimum 0.125-inch-thick, extruded-aluminum tubular rail and stile members. Mechanically fasten corners with reinforcing brackets that are deeply penetrated and fillet welded or that incorporate concealed tie rods.

1. Thermal Construction: Manufacturer's high-performance thermal break material separating aluminum members exposed to the exterior from members exposed to the interior.

2. Door Design: Medium stile; 3-1/2-inch nominal width with 10-inch high bottom rail.

3. Glazing Stops and Gaskets: Snap-on, extruded-aluminum stops and preformed gaskets.

a. Provide nonremovable glazing stops on outside of door.

#### 2.5 ENTRANCE DOOR HARDWARE

A. Weather Stripping: Manufacturer's standard replaceable components.

1. Compression Type: Made of ASTM D2000 molded neoprene or ASTM D2287 molded PVC.

2. Sliding Type: AAMA 701/702, made of wool, polypropylene, or nylon woven pile with nylon-fabric or aluminum-strip backing.

B. Weather Sweeps: Manufacturer's standard exterior-door bottom sweep with concealed fasteners on mounting strip.

C. Surface Closers: BHMA A156.4; rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves and forged-steel main arm. Comply with manufacturer's written instructions for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.

1. Opening-Force Requirements for Egress Doors: Not more than 15 lbf to release the latch and not more than 30 lbf to set the door in motion and not more than 15 lbf to open the door to its minimum required width.

- D. Continuous, Gear-Type Hinges: Extruded-aluminum, pinless, geared hinge leaves joined by a continuous extruded-aluminum channel cap; with concealed, self-lubricating thrust bearings.
    - 1. Hinges for Fire-Rated Assemblies: With steel fire pins to hold fire-rated doors in place if required by tested listing.
    - 2. Mounting: Full surface, with removable continuous caps over fasteners.
    - 3. Electric Feature: Electric through wires and monitor.
    - 4. Manufacturers:
      - a. Hager 780-112HD
      - b. McKinney MCK-12HD
      - c. Ives 112HD
  - E. Straight Door Pulls:
    - 1. Type: 3/4-inch constant-diameter pull.
    - 2. Mounting: Through bolted with oval-head machine screws and countersunk washers.
    - 3. Minimum Clearance: 1-1/2 inches from face of door.
    - 4. Overall Length: 10 inches.
  - F. Mortise Panic Exit Devices: BHMA A156.3, Grade 1, concealed vertical rods, lever (entrance) trim.
    - 1. Type: 3.
    - 2. Actuating Bar: Push pad.
    - 3. Material: Stainless steel.
  - G. Mortise Cylinders: Provide one for each lock. Contractor shall comply with the Owner's keying requirements.
  - H. Saddle Thresholds: BHMA A156.21; fabricated to full width of opening indicated; beveled with a slope of not more than 1:2, with maximum height of 1/2 inch.
    - 1. Type: Fluted top, barrier free.
    - 2. Base Metal: Aluminum.
  - I. Sliding-Type Weather Stripping: Woven-pile weather stripping of wool, polypropylene, or nylon pile and resin-impregnated backing fabric; complying with AAMA 701/702.
- 2.6 GLAZING
- A. Glass: Comply with Section 088000 "Glass Glazing."
  - B. Glazing Gaskets: Manufacturer's standard sealed-corner pressure-glazing system of black, resilient elastomeric glazing gaskets, setting blocks, and shims or spacers.
  - C. Glazing Sealants: As recommended by manufacturer and complying with Section 088000 "Glazing."
  - D. Weatherseal Sealants: ASTM C920 for Type S; Grade NS; Class 25; Uses NT, G, A, and O; chemically curing silicone.

## 2.7 MATERIALS

- A. Sheet and Plate: ASTM B209 (ASTM B209M).
- B. Extruded Bars, Rods, Profiles, and Tubes: ASTM B221 (ASTM B221M).
- C. Extruded Structural Pipe and Tubes: ASTM B429/B429M.
- D. Structural Profiles: ASTM B308/B308M.
- E. Steel Reinforcement:
  - 1. Structural Shapes, Plates, and Bars: ASTM A36/A36M.
  - 2. Cold-Rolled Sheet and Strip: ASTM A1008/A1008M.
  - 3. Hot-Rolled Sheet and Strip: ASTM A1011/A1011M.
  - 4. Primer: Manufacturer's standard zinc-rich, corrosion-resistant primer complying with SSPC-PS Guide No. 12.00; applied immediately after surface preparation and pretreatment. Select surface preparation methods according to recommendations in SSPC-SP COM, and prepare surfaces according to applicable SSPC standard.

## 2.8 ACCESSORIES

- A. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, non-staining, nonbleeding fasteners and accessories compatible with adjacent materials.
  - 1. Use self-locking devices where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration.
  - 2. Reinforce members as required to receive fastener threads.
  - 3. Use exposed fasteners with countersunk Phillips screw heads, finished to match framing system.
- B. Anchors: Three-way adjustable anchors that accommodate fabrication and installation tolerances in material and finish compatible with adjoining materials and recommended by manufacturer.
  - 1. Concrete and Masonry Inserts: Hot-dip galvanized cast-iron, malleable-iron, or steel inserts complying with ASTM A123/A123M or ASTM A153/A153M requirements.
- C. Concealed Flashing: Aluminum sheet, 0.040" minimum thickness, with specified bituminous coating applied to surfaces in contact with concrete or masonry.
- D. Bituminous Coating: Cold-applied asphalt-mastic paint containing no asbestos, formulated for 30-mil (0.762-mm) thickness per coat.
- E. Rigid PVC Filler.

## 2.9 FABRICATION

- A. Form or extrude aluminum shapes before finishing.
- B. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.
- C. Fabricate components that, when assembled, have the following characteristics:
  - 1. Profiles that are sharp, straight, and free of defects or deformations.
  - 2. Accurately fitted joints with ends coped or mitered.
  - 3. Physical and thermal isolation of glazing from framing members.
  - 4. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
  - 5. Provisions for field replacement of glazing from interior.
  - 6. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.
- D. Entrance Door Frames: Reinforce as required to support loads imposed by door operation and for installing entrance door hardware.
  - 1. At exterior doors, provide compression weather stripping at fixed stops.
- E. Entrance Doors: Reinforce doors as required for installing entrance door hardware.
  - 1. At exterior doors, provide weather sweeps applied to door bottoms.
- F. Entrance Door Hardware Installation: Factory install entrance door hardware to the greatest extent possible. Cut, drill, and tap for factory-installed entrance door hardware before applying finishes.
- G. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

## 2.10 ALUMINUM FINISHES

- A. High-Performance Organic Finish: Three-coat fluoropolymer finish complying with AAMA 2604 and containing not less than 70 percent PVDF resin by weight in color coat.
  - 1. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
  - 2. Color and Gloss: Custom color as determined by the Architect.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Install aluminum-framed entrances and storefronts in accordance with the manufacturer's recommendations and the Contract Documents.

### 3.2 ERECTION TOLERANCES

- A. Erection Tolerances: Install aluminum-framed entrances and storefronts to comply with the following maximum tolerances:
  - 1. Plumb: 1/8 inch in 10 feet; 1/4 inch in 40 feet.
  - 2. Level: 1/8 inch in 20 feet; 1/4 inch in 40 feet.
  - 3. Alignment:
    - a. Where surfaces abut in line or are separated by reveal or protruding element up to 1/2 inch wide, limit offset from true alignment to 1/16 inch.
    - b. Where surfaces are separated by reveal or protruding element from 1/2 to 1 inch wide, limit offset from true alignment to 1/8 inch.
    - c. Where surfaces are separated by reveal or protruding element of 1 inch wide or more, limit offset from true alignment to 1/4 inch.
  - 4. Location: Limit variation from plane to 1/8 inch in 12 feet; 1/2 inch over total length.

### 3.3 FIELD QUALITY CONTROL

- A. Inspection Agency: Contractor shall engage a qualified inspector to perform inspections and to prepare and distribute reports.
- B. Inspections:
  - 1. Egress Door Inspections: Inspect each door equipped with panic hardware according to NFPA 101, Section 7.2.1.15.
- C. Repair or remove and replace installations where inspections indicate that they do not comply with specified requirements.
- D. Reinspect repaired or replaced installations to determine if replaced or repaired assembly installations comply with specified requirements.

END OF SECTION 084113



SECTION 088000 – GLASS GLAZING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes
  - 1. Glass glazing for applications indicated on the Drawings.
  - 2. Replacement of glazing gaskets on existing windows indicated.

1.2 RELATED REQUIREMENTS

- A. Section 070500 – Common Work Results for Thermal and Moisture Protection.
- B. Section 080500 – Common Work Results for Openings.

1.3 PREINSTALLATION MEETINGS

- A. Pre-installation Conference: Refer to Section 070500 “Common Work Results for Thermal and Moisture Protection” for Building Envelope Pre-Installation Meeting requirements.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Glass Samples: 12 inches (300 mm) square, for the following products:
  - 1. Coated glass.
  - 2. Laminated glass.
  - 3. Insulating glass.
- C. Glazing Gasket Samples: 12 inches in length for each profile of gasket required.
- D. Glazing Schedule: List glass types and thicknesses for each size opening and location. Use same designations indicated on Drawings.

1.5 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For glass.
- B. Sample Warranties: For special warranties.

1.6 WARRANTIES

- A. Manufacturer's Special Warranty for Coated-Glass Products: Manufacturer agrees to replace coated-glass units that deteriorate within specified warranty period. Deterioration of coated glass

is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in coating.

1. Warranty Period: 10 years from date of Substantial Completion.

B. Manufacturer's Special Warranty for Insulating Glass: Manufacturer agrees to replace insulating-glass units that deteriorate within specified warranty period. Deterioration of insulating glass is defined as failure of hermetic seal under normal use that is not attributed to glass breakage or to maintaining and cleaning insulating glass contrary to manufacturer's written instructions. Evidence of failure is the obstruction of vision by dust, moisture, or film on interior surfaces of glass.

1. Warranty Period: 10 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 GENERAL

- A. Source Limitations for Glass: Obtain from single source from single manufacturer for each glass type.
- B. Source Limitations for Glazing Accessories: Obtain from single source from single manufacturer for each product and installation method.

### 2.2 PERFORMANCE REQUIREMENTS

- A. Installed glazing systems shall withstand normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, or installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.
- B. Structural Performance: Glazing shall withstand design loads within limits and under conditions indicated on Drawings and in compliance with the Building Code and ASTM E1300.
- C. Safety Glazing: Comply with 16 CFR 1201, Category II.
- D. Thermal and Optical Performance Properties:
  - 1. U-Factors: Center-of-glazing values, according to NFRC 100 and based on LBL's WINDOW 5.2 computer program, expressed as Btu/sq. ft. x h x deg F (W/sq. m x K).
  - 2. Solar Heat-Gain Coefficient and Visible Transmittance: Center-of-glazing values, according to NFRC 200 and based on LBL's WINDOW 5.2 computer program.
  - 3. Visible Reflectance: Center-of-glazing values, according to NFRC 300.
- E. Allow for thermal movements from ambient and surface temperature changes acting on glass framing members and glazing components.
  - 1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

## 2.3 GLASS PRODUCTS, GENERAL

- A. Glazing Publications:
  - 1. GANA Publications: "Glazing Manual."
  - 2. IGMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."
- B. Safety Glazing Labeling: Permanently mark safety glazing with certification label of the SGCC containing manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.
- C. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of IGCC.

## 2.4 GLASS PRODUCTS

- A. Clear Annealed Float Glass: ASTM C1036, Type I, Class 1 (clear), Quality-Q3.
- B. Tinted Annealed Float Glass: ASTM C1036, Type I, Class 2 (tinted), Quality-Q3.
- C. Fully Tempered Float Glass: ASTM C1048, Kind FT (fully tempered), Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.
  - 1. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed.
- D. Ceramic-Coated Vision Glass: ASTM C1048, Condition C, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3; and complying with Specification No. 95-1-31 in GANA's "Engineering Standards Manual."

## 2.5 LAMINATED GLASS

- A. Laminated Glass: ASTM C1172.
  - 1. Construction: Laminate glass with polyvinyl butyral interlayer.
  - 2. Interlayer Thickness: Provide thickness not less than that indicated and as needed to comply with requirements.
  - 3. Interlayer Color: Clear unless otherwise indicated.

## 2.6 INSULATING GLASS

- A. Insulating-Glass Units: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, qualified according to ASTM E2190.
  - 1. Sealing System: Dual seal, with approved fabricator's standard primary and secondary sealants.
  - 2. Perimeter Spacer: Thermally broken aluminum.
  - 3. Desiccant: Molecular sieve or silica gel, or a blend of both.

2.7 GLAZING SEALANTS

- A. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C920, Type S, Grade NS, Class 100/50, Use NT.

2.8 GLAZING TAPES

- A. Back-Bedding Mastic Glazing Tapes:
1. Preformed, butyl-based, 100 percent solids elastomeric tape;
  2. Non-staining and non-migrating in contact with nonporous surfaces;
  3. ASTM C1281 and AAMA 806.3 (continuous pressure).
- B. Expanded Cellular Glazing Tapes:
1. Closed-cell, PVC foam, adhesive on both surfaces;
  2. AAMA 810.1, Type 1 (tape acts as primary sealant).

2.9 REPLACEMENT GLAZING GASKETS

- A. Provide black thermoplastic vulcanite (TPV) replacement gaskets for existing windows indicated. Approved manufacturers include but are not limited to:
1. Reid Rubber Products ([www.reidrubberproducts.com](http://www.reidrubberproducts.com)).
  2. GRP ([www.glazingrubberproducts.com](http://www.glazingrubberproducts.com))
  3. Trimlok ([www.trimlok.com](http://www.trimlok.com))

2.10 MISCELLANEOUS GLAZING MATERIALS

- A. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.
- B. Setting Blocks:
1. Synthetic rubber with a Shore A durometer hardness of 85, plus or minus 5.
  2. Type recommended by sealant or glass manufacturer.
- C. Spacers: Continuous extrusions of hardness required by glass manufacturer for installation indicated.
1. Type recommended by sealant or glass manufacturer.
- D. Edge Blocks: Synthetic rubber with a Shore A durometer hardness per manufacturer's written instructions.
1. Type recommended by sealant or glass manufacturer.
- E. Cylindrical Glazing Sealant Backing: ASTM C1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.

## 2.11 FABRICATION OF GLAZING UNITS

- A. Fabricate glazing units in sizes required to fit openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing publications, to comply with system performance requirements.
- B. Clean-cut or flat-grind vertical edges of butt-glazed monolithic lites to produce square edges with slight chamfers at junctions of edges and faces.
- C. Grind smooth and polish exposed glass edges and corners.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine framing, glazing channels, and stops, with Installer present, for compliance with the following:
  - 1. Manufacturing and installation tolerances for size, squareness, and offsets at corners.
  - 2. Presence and condition of weep systems.
  - 3. Minimum required face and edge clearances.
  - 4. Effective sealing between joints of glass-framing members.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.
- B. Examine glazing units to locate exterior and interior surfaces. Label or mark units as needed so that exterior and interior surfaces are readily identifiable. Do not use materials that leave visible marks in the completed Work.

### 3.3 FIELD CONDITIONS

- A. Environmental Limitations: Do not install glazing sealants when ambient and substrate temperature conditions are outside limits permitted by sealant manufacturer or are below 40 deg F (4.4 deg C).

### 3.4 GLAZING, GENERAL

- A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials.

- B. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass includes glass with edge damage or other imperfections that, when installed, could weaken glass, impair performance, or impair appearance.
- C. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.
- D. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.
- E. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.
- F. Provide spacers for glass lites where length plus width is larger than 50 inches (1270 mm).
- G. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.
- H. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.
- I. Set glass lites with proper orientation so that coatings face exterior or interior as specified.
- J. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.
- K. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.

### 3.5 TAPE GLAZING

- A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.
- B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.
- C. Cover vertical framing joints by applying tapes to heads and sills first, then to jambs. Cover horizontal framing joints by applying tapes to jambs, then to heads and sills.
- D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.
- E. Apply heel bead of elastomeric sealant.
- F. Center glass lites in openings on setting blocks and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.

- G. Apply cap bead of elastomeric sealant over exposed edge of tape.

3.6 GASKET GLAZING (DRY)

- A. Cut and apply compression gaskets to lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.
- B. Install gaskets so they protrude past face of glazing stops.

3.7 REPLACEMENT GASKETS

- A. Remove and replace glazing gaskets at locations indicated. Use methods that will result in durable, weathertight performance.

3.8 CLEANING AND PROTECTION

- A. Immediately after installation remove nonpermanent labels and clean surfaces.
- B. Protect glass from contamination by construction operations. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction for buildup of dirt, scum, alkaline deposits, or stains.
  - 1. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended in writing by glass manufacturer. Remove and replace glass that cannot be cleaned without damage to coatings.
- C. Remove and replace glass that is damaged during construction period.
- D. Wash glass on both exposed surfaces not more than four days before date scheduled for Substantial Completion inspections.

END OF SECTION 088000

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## SECTION 093013 - CERAMIC TILING

### PART 1 GENERAL

#### 1.01 SUMMARY

A. Section Includes:

1. Ceramic Floor Tile
2. Ceramic Base
3. Membrane materials
4. Leveling Coat, Mortar, Grouts, and Adhesives

B. Related Sections:

1. Section 079200 "Joint Sealants"

#### 1.02 SUBMITTALS

- A. Product Data: For each type of product specified.
- B. Samples: Provide sample boards showing at least four (4) full-size tile units with grouted joints for each color and pattern of tile scheduled for the Project.
- C. Details for joint construction in tile work.

#### 1.03 QUALITY ASSURANCE

- A. In addition to complying with all pertinent codes and regulations, conform to ANSI A108/A118/A136.1 – "American Standard Specification for the Installation of Ceramic Tile" and ISO Classifications for Ceramic Tiles, Grouts and Adhesives and ANSI A137.1 - "Recommended Standard Specifications for Ceramic Tile".
- B. Source Limitations:
1. Obtain tile of each type and color from same production run. All tiles within the same area shall be of consistent quality in appearance and shall have the same physical characteristics.
  2. A single manufacturer shall produce all tile accessories. Obtain setting and grouting materials from a single manufacturer.
  3. Provide surface preparation products in combination with crack isolation and waterproof, setting mortar, and grout from a single manufacturer.

C. Performance Requirements:

1. DCOF AcuTest: For tile installed on walkway surfaces, provide products with the following values as determined by testing identical products per ASTM A137.1-2012:
  - a. All horizontal Surfaces:  $COF \geq 0.42$  when wet.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver packaged materials and store in original containers with seals unbroken and labels intact until time of use in accordance with manufacturer's directions. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.
- B. Comply with ANSI A137.1 for labeling sealed tile packages.
- C. Prevent damage or contamination to materials by water, freezing, foreign matter, and other causes.

1.05 PROJECT CONDITIONS

- A. Substrate shall be prepared to receive new tile in a manner acceptable to the tile manufacturer; and in accordance with ANSI Standard Installation Specification A108.1 through A108.13; and TCNA's "Handbook for Ceramic, Glass, and Stone Tile Installation".
- B. Environmental Limitations: Do not install tile until construction in spaces is completed and ambient temperature and humidity conditions are being maintained to comply with referenced standards and manufacturer's written instructions.

1.06 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with labels describing contents.
  1. Tile and Trim Units: Furnish quantity of full-size units equal to one case for each type, composition, color, pattern, and size indicated.

PART 2 PRODUCTS

2.01 CERAMIC FLOOR TILE

- A. Approved Manufacturers:
  1. American Olean
  2. Crossville.
  3. Daltile

B. Tile Base and Accessories: Provide special shapes such as bull-nose edges and other accessories as required, to match wall tile.

1. Provide matching bull-nose tile at all exposed edges.

## 2.02 CRACK SUPPRESSION MEMBRANE

A. General: Product that complies with ANSI A118.12 and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.

B. Sheet Membrane:

1. "Dal-Seal TS", Dal-Tile (800-933-Tile)
2. "Laticrete 170 Sound & Crack Isolation Mat"; Laticrete International Inc. (800-243-4788)
3. "Mapeguard 2, Crack Isolation and Sound Control"; Mapei Corp. (800-426-2734)
4. "TEC Hydraflex Waterproofing Crack Isolation Membrane", TEC Specialty Products, H.B. Fuller Construction Products, Inc. (800-832-9023)

C. Provide self-bonding elastomeric membrane capable of heavy-duty service per ASTM C627. Liquid-applied products will not be allowed.

D. Primer: As required by the membrane manufacturer.

E. Furnish in 12 inch and 36 inch wide sheets in lengths required.

## 2.03 SUBSTRATE LEVELING MATERIALS

A. Concrete Leveling and Patching Compounds:

1. "K-15/Primer P-51"; Ardex (724-203-5000)
2. "Novoplan 2/Primer"; Mapei Corp. (800-426-2734)

## 2.04 MORTAR MATERIALS: FLOOR TILE

A. Water-Cleanable, Tile-Setting Epoxy: ANSI A118.3.

B. Approved Manufacturers:

1. Laticrete International Inc. (800-243-4788)
2. Mapei Corp. (800-426-2734)
3. Bonsal America, Inc., A division of Oldcastle APG (800-738-1621)
4. Custom Building Products (800-272-8786)

5. Hydroment (Bostick Findley, Inc.) (800-523-2678)
6. TEC Specialty Products, H.B. Fuller Construction Products, Inc. (800-832-9023)
7. Ardex (724-203-5000)

B. Acceptable Products: Refer to Setting and Grout Material Schedule at end of this Section.

C. Bond Coat: Thin Set Mortar with Polymer or Acrylic/Latex Additive

## 2.05 GROUT MATERIALS

A. Latex Portland Cement Grout consisting of mortar with an acrylic latex or polymer epoxy additive. Use in conformance with ANSI A108.5 and ANSI A108.10 Materials shall conform to ANSI A118.3 and ANSI A118.7.

1. Color as shown on Interior Finish Index.

B. Approved Manufacturers:

1. Laticrete International Inc. (800-243-4788):
  - a. Epoxy Grout (All Joint Widths - Floor and Wall)
    - 1) "SpectraLOCK 2000 IG"
2. Mapei Corp. (800-426-2734):
  - a. Epoxy Grout

## 2.06 WATERPROOF MEMBRANE

C. General: Manufacturer's standard product[, **selected from the following,**] that complies with ANSI A118.10 and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.

A. Waterproof Membrane Products:

1. "Laticrete HydroBan"; Laticrete International Inc. (800-243-4788)
2. "Mapelastic AquaDefense"; Mapei Corp. (800-426-2734)
3. "DITRA"; Schluter Systems L.P. (800-472-4588)
4. "TEC Hydraflex Waterproofing Crack Isolation Membrane", TEC Specialty Construction Brands (800-832-9023).

5. "Bituthene 3100"; W.R. Grace Masonry Products (800-558-7006)

- B. Provide all required accessories including preformed inside and outside corners, cap strips, and pipe protrusion collars.

1.2 CRACK ISOLATION MEMBRANE

- A. General: Manufacturer's standard product that complies with ANSI A118.12 for high performance and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.

2.07 THRESHOLDS

- B. General: Fabricate to sizes and profiles indicated or required to provide transition between adjacent floor finishes.
  - 1. Bevel edges at 1:2 slope, with lower edge of bevel aligned with or up to **1/16 inch (1.5 mm)** above adjacent floor surface. Finish bevel to match top surface of threshold. Limit height of threshold to **1/2 inch (12.7 mm)** or less above adjacent floor surface.

2.08 OTHER MATERIALS

- A. Joint Sealant to include sealing of ceramic tile surfaces at internal and external corners, transitions in plane and where ceramic tile work abuts dissimilar materials.
  - 1. Refer to Section 079200 for sealant specifications.
- B. Other materials, including adhesives not specifically described but required for a complete and proper installation of tiles, shall be only as recommended by the manufacturer of material to which it is applied.

2.09 MIXING MORTARS AND GROUT

- A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.
- B. Add materials, water, and additives in accurate proportions.
- C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

### PART 3 EXECUTION

#### 3.01 INSPECTION

- A. Installer must examine the areas and conditions under which flooring and accessories are to be installed and notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the installer.

#### 3.02 PREPARATION

- A. Prior to laying flooring, vacuum and remove all contaminants from surfaces to be covered and inspect subfloor. Start of flooring installation indicates acceptance of subfloor conditions and full responsibility for completed work. Use leveling compound as recommended by flooring manufacturer for filling small cracks and depressions in subfloors.
  - 1. Concrete Subfloors:
    - a. Existing concrete slabs shall be mechanically prepared to a minimum IRCI CSP #3 profile, or as recommended by setting mortar manufacturer.
  - B. Apply concrete slab primer for ceramic tile, if recommended by flooring manufacturer, prior to application of adhesive. Apply in compliance with manufacturer's directions.

#### 3.03 CRACK SUPPRESSION MEMBRANE

- A. Install membrane in strict accordance with manufacturer's specifications and ANSI A108.17.
- B. Provide width of membrane as recommended by membrane manufacturer, but no less than three (3) times the width of the tile used at all control joints, existing cracks in concrete floor and other locations as required to comply with TCNA's "Handbook for Ceramic Tile Installation".

#### 3.04 TILE INSTALLATION - GENERAL

- A. Comply with the ANSI A108 Series and TCNA's "Handbook for Ceramic, Glass, and Stone Tile Installation".
- B. Handle, store, mix, and apply mortar and grout in compliance with manufacturer's instructions.
- C. Extend tile work into recesses and under equipment and fixtures to form a complete covering without interruptions. Terminate work neatly at obstructions, edges, and corners without disruption of pattern, joint alignment, or bridging of Expansion Joints or Control Joints.
- D. Install tile after finishing operations, including painting, have been completed. Moisture content of concrete slabs, building air temperature, and relative humidity must be within limits recommended by the flooring manufacturer.

- E. Expansion Joints: Provide expansion joints, control joints and pressure relieving joints of widths and locations according to TCNA Handbook Construction No. EJ171, and as approved by the Owner's Representative. Do not saw cut joints after application.
- F. Lay tile from center marks established from center of area so that tile at opposing edges of the area are of equal width. Adjust as necessary to avoid use of cut widths less than 1/2 tile at edge perimeters. Lay tile square to room axis unless otherwise shown.
- G. Match tiles for color and pattern by using tile from cartons in same sequence as manufactured and packaged. Cut tile neatly in and around all fixtures. Broken, cracked, chipped, or deformed tile are not acceptable.
- H. Lay tile with grain in tile running in same direction. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Grind cut edges of tile abutting trim, finish, or built-in items.
- I. Sound tile after setting and replace hollow sounding units.
- J. Grout tile to comply with the requirements of the ANSI A18.10 tile installation standards:

### 3.05 FLOOR TILE INSTALLATION

- A. General: Install tiles designated for floor installations in accordance with TCNA's "Handbook for Ceramic Tile Installation.
- B. Back Buttering: For installations indicated, obtain 100% mortar coverage by complying with applicable special requirements for back buttering of tile in referenced ANSI A108 series of tile installation standards:
  - 1. Vestibule tile floors.

### 3.06 GROUTING

- A. Joints shall be packed full and free of all voids or pits, joints shall not be raked. Excess grout shall be cleaned from the surface with water as work progresses. Cleaning shall be done while mortar is fresh and before it hardens on the surface.
- B. Grout shall be installed in accordance with ANSI A108.6 (epoxy) and the manufacturer's recommended procedures and precautions during application and cleaning.
  - 1. Tile shall be grouted with chemical-resistant epoxy grout in the following areas:
    - a. Vestibules and lobbies.

3.07 ADJUST AND CLEAN

- A. Clean grout and setting material from face of tile while materials are workable. Leave tile face clean and free of all foreign matter.
- B. Leave finished installation clean and free of cracked, chipped, broken, un-bonded, or otherwise defective work.
- C. Protection: When recommended by tile manufacturer, apply a protective coat of neutral protective cleaner to completed surface. Protect installed tile work with Kraft paper or other heavy covering during the construction period to prevent damage. Prohibit all foot and wheel traffic from using tiled floors for at least 3 days, preferably 7 days.
- D. Before final inspection, remove protective coverings and rinse neutral cleaner from all tile surfaces.

3.08 SETTING AND GROUT MATERIAL SCHEDULE

	Tile ( < 8" x 8")	Large Format Tile ( ≥ 8" x 8")
A. <u>Laticrete International</u>		
Mortar - Floor	"Laticrete 254 Platinum Multipurpose Thinset Mortar"	"Laticrete 255 MultiMax MultiPurpose Thinset Mortar" or "Laticrete 4XLT Thinset (Regular or Rapid)"
Grout	"Spectra LOCK Pro Epoxy Grout"	"Spectra LOCK Pro Epoxy Grout"
B. <u>Mapei Corp.</u>		
Mortar - Floor	"Ultraflex 3"	"UltraFlex LFT"
Grout	"Kerapoxy CQ"	"Kerapoxy CQ"
C. <u>Bonsal America</u>		
Mortar - Floor	"Pro Spec PermaFlex 400"	
Grout	See Note 1	See Note 1
D. <u>Hydroment</u>		
Mortar - Floor	"Hydroment Flex-A-Lastic/Tile-Mate"	
Grout	See Note 1	See Note 1
E. <u>Custom Building Prod</u>		
Mortar - Floor	"FlexBond Premium Flexible Bonding Mortar"	
Grout	See Note 1	See Note 1
F. <u>TEC</u>		
Mortar - Floor	"TEC Superflex Thinset Mortar"	"TEC Ultimate Large Tile Mortar"
Grout	See Note 1	See Note 1
G. <u>ARDEX</u>		
Mortar - Floor	"ARDEX X-5"	"ARDEX X-5"
Grout	See Note 1	See Note 1
Note 1: Laticrete "Spectra LOCK Pro Grout" and Mapei "Opticolor" are the grout products recommended.		

END OF SECTION 093000



## SECTION 099600 - HIGH-PERFORMANCE COATINGS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes:
  - 1. Surface preparation and application of high-performance coating systems on existing natural gas piping.
  - 2. Replacement labels for natural gas piping.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
  - 1. Include printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.

#### 1.4 QUALITY ASSURANCE

### PART 2 - PRODUCTS

#### 2.1 HIGH-PERFORMANCE COATINGS, GENERAL

- A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."
- B. Material Compatibility:
  - 1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
  - 2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
  - 3. Products shall be of same manufacturer for each coat in a coating system.

- C. Colors: The Architect will select all colors.

## 2.2 PRIMER

- A. Rust Conversion Coating: Conversion coating formulated for rusted metal.
  - 1. Basis of Design: "Rust Converter - One Step Rust Killer" manufactured by Interstate Products, Inc.

## 2.3 FINISH COAT

- A. Polyurethane, two component, pigmented, gloss (MPI Gloss Level 6), MPI #72.

## 2.4 NATURAL GAS PIPING LABELS

- A. 4-mil vinyl labels designed for exterior exposure use markers with directional flow arrows to meet ANSI standards.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- C. Proceed with coating application only after unsatisfactory conditions have been corrected.
  - 1. Application of coating indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. Clean substrates of substances that could impair bond of coatings, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

### 3.3 APPLICATION

- A. Apply high-performance coatings according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."

### 3.4 LABELS

- A. Replace damaged natural gas piping labels with new. Apply according to the label manufacturer's instructions.

END OF SECTION 099600

## SECTION 221423 – ROOF DRAINAGE SPECIALTIES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Roof drains.
  - 2. Deck drains
  - 3. Miscellaneous storm drainage piping specialties.
  - 4. Flashing materials.

#### 1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.

#### 1.4 QUALITY ASSURANCE

- A. Drainage piping specialties shall bear label, stamp, or other markings of specified testing agency.

### PART 2 - PRODUCTS

#### 2.1 ROOF AND DECK DRAINS

- A. Cast-Iron, Large-Sump, General-Purpose Roof Drains RD and ED:
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Josam Company.
    - b. Smith, Jay R. Mfg. Co.
    - c. Tyler Pipe; Wade Div.
    - d. Zurn Plumbing Products Group; Specification Drainage Operation.
  - 2. Standard: ASME A112.6.4, for general-purpose roof drains.
  - 3. Body Material: Cast iron.

4. Dimension of Body: Nominal 15-inch diameter.
5. Combination Flashing Ring and Gravel Stop: Required.
6. Outlet Location: Bottom.
7. Outlet Size: As indicated on drawings.
8. Extension Collars: Required.
9. Underdeck Clamp: Required.
10. Expansion Joint: Not required.
11. Dome Material: Cast Iron.

#### 2.4 FLASHING MATERIALS

- A. Copper Sheet: ASTM B 152/B 152M, 12 oz./sq. ft.
- B. Fasteners: Metal compatible with material and substrate being fastened.
- C. Metal Accessories: Sheet metal strips, clamps, anchoring devices, and similar accessory units required for installation; matching or compatible with material being installed.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Install roof drains at low points of roof areas according to roof membrane manufacturer's written installation instructions. Roofing materials are specified in Division 07 Sections.
  1. Install flashing collar or flange of roof drain to prevent leakage between drain and adjoining roofing. Maintain integrity of waterproof membranes where penetrated.
  2. Install expansion joints, if indicated, in roof drain outlets.
  3. Position roof drains for easy access and maintenance.
- C. Install conductor nozzles at exposed bottom of conductors where they spill onto grade.

#### 3.2 CONNECTIONS

- A. Connect to existing storm drainage piping systems.

#### 3.4 PROTECTION

- A. Protect drains during remainder of construction period to avoid clogging with dirt or debris and to prevent damage from traffic or construction work.
- B. Place plugs in ends of uncompleted piping at end of each day or when work stops.

ROOF REPLACEMENT/WALL REPAIR/ENTRY  
LOWER PARK HEIGHTS COMMUNITY CENTER

ISSUED FOR BID  
August 3, 2022

END OF SECTION 221423

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## SECTION 260501 – ELECTRICAL REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes requirements for electrical work required for the Project.

#### 1.3 REGULATORY REQUIREMENTS

- A. Codes: Entire installation shall comply with requirements of authorities having jurisdiction, including but not limited to:
  - 1. National Electrical Code (NEC).
  - 2. Underwriter's Laboratories (UL) labeled and listed when available.
  - 3. Interior and exterior lighting intensities as recommended by IESNA.

- B. Permits: Contractor shall pay for all permits required by work under this Division.

- C. Inspections: Contractor shall arrange for all inspections and correct non-complying installations.

#### 1.4 SUBMITTALS

- A. Material and Equipment: Prior to start of work, submit a list of all materials and equipment covered by Division 26 shall be submitted for approval. Contractor shall allow ample time for checking and processing and shall assume responsibility for delays incurred due to rejected items. No installation of material concerned shall be made until such written approval has been obtained. Approval of materials and equipment shall in no way obviate compliance with the Contract Documents. For each item proposed, give name of manufacturer, trade name, catalog data, and performance data, including but not limited to:

- 1. Manufacturer's cuts and rating data.
- 2. Serial numbers of all principal pieces of equipment.
- 3. Supplier's name, address, and phone number.
- 4. Final settings for all breakers, relays, and control devices.

- B. Record Drawings: Prepare and submit in accordance with requirements. Contractor shall make notations, neat and legible, daily as the work proceeds. Drawings shall be available for inspection at all times and kept at the job site. All buried conduit and/or indicated future connections outside any building shall be located both by depth and by accurate measurement from a permanently established landmark such as a building or structure.

- C. Spare Parts: Conform to the Submittal Section. Deliver following spare parts to Owner and obtain receipts. Submit at same time as Operating Instructions:

#### 1.5 DRAWINGS

- A. For purposes of clarity and legibility, drawings are essentially diagrammatic although size and location of equipment is drawn to scale wherever possible, Contractor shall make use of data in all the Contract Documents and verify information at building site.
- B. Routing of Conduit and Piping: The Drawings indicate the general locations. It is not intent to indicate all necessary offsets and it shall be the responsibility of the trade contractor under this Division to install conduit in such a manner as to conform to structure, avoid obstructions, preserve headroom, keep openings and passageways clear, and make all equipment requiring inspection, maintenance and repair accessible without extra cost to the Owner.
- C. Coordination with Other Trades: Check with other Divisions of the Specifications so that no interference shall occur and in order that elevations may be established for the work. Installed work which interferes with the work of other trades shall be removed and rerouted at the discretion of the Architect.

#### 1.6 DAMAGE AND REPAIRS

- A. Emergency Repairs: Owner reserves the right to make temporary repairs as necessary to keep equipment in operating condition without voiding Contractor's warranty or relieving Contractor of his responsibility during warranty period.
- B. Responsibility for Damage: Contractor shall be responsible for damage to grounds, buildings, or equipment due to work furnished or installed under this Division 26.

#### 1.7 PROTECTION, CARE, AND CLEANING

- A. Protection: Provide adequate protection for finished parts of materials and equipment against physical damage from any cause during progress of work and until final completion. Sensitive electrical equipment shall not be installed until major construction is completed.
- B. Care: During entire construction, properly cap all lines and equipment to prevent entrance of sand and dirt. Protect equipment against moisture, plaster, cement, paint or work of other trades by covering with polyethylene sheets.
- C. Cleaning: After installation is completed, clean all systems as follows in addition to requirements specified:
- D. Field Painted Items: Clean exterior of conduits and equipment exposed in completed structure; removing all rust, plaster, cement and dirt by wire brushing. Remove grease oil and similar materials by wiping with clean rags and suitable solvents.
- E. Factory Finished Items: Remove grease and oil on all factory finished items such as cabinets and controllers, and leave surfaces clean and polished.
- F. Connection: Prior to energizing, check all electrical connection hardware and torque where necessary.



## PART 2 - PRODUCTS

### 2.1 PRODUCTS:

- A. Products and materials shall match existing to be replaced.

### 2.2 MATERIALS AND EQUIPMENT

- A. Wherever possible, all materials and equipment used in installation of this work shall be of same manufacturer throughout for each class of material or equipment. Materials shall be new and bear UL label, wherever subject to such approval. Comply with ANSI, IEEE and NEMA standards, where applicable.
- B. Specification grade wiring devices with stainless steel cover plates or weatherproof covers installed on metal outlet boxes.
- C. Intermediate metal conduit (IMC) with threaded couplings and fittings shall be used in exterior walls, and for exposed surface applications to a height of 8 feet above finished floor.
- D. Electrical metallic tubing (EMT) with set screw type couplings and fittings shall be used generally for concealed applications, interior partition walls and above the 8 foot demarcation as noted above.
- E. Raceways penetrating exterior building walls shall have internal and external seals to resist moisture.
- F. Power and control wiring shall be single insulated conductors installed in raceway systems.
- G. Conductors shall be copper and sizes shall be stated in American Wire Gauge (AWG) notation. Feeders larger than #4 may be aluminum.
- H. Minimum conductor size shall be No. 12 AWG for power and lighting circuits, No. 10 AWG for all neutrals, No. 14 AWG for mechanical systems control circuits, and No. 16 AWG for auxiliary systems or as recommended by system manufacturers.
- I. Conductor insulation shall be code grade type THHN/XHHW/THWN, rated 90 degrees Celsius.

### 2.3 LUMINAIRES

- A. Match existing.

## PART 3 - EXECUTION

### 3.1 CUTTING AND PATCHING

- A. Cutting of Existing Structural Work: Holes in existing slabs and concrete walls shall be cored to the minimum size required. The Contractor shall submit Drawings showing dimensioned sizes and locations for all such holes to Architect for approval before cutting. Where required for

conduit installation, slabs on grade shall be saw-cut to minimum required width; submit cutting Drawings to the Architect for approval before cutting.

- B. Patching: Holes or chases shall be patched to match adjacent surfaces.

### 3.2 PAINTING

- A. Finish painting of electrical equipment will be as specified in Division 9, unless equipment is herein specified to be furnished with factory applied finish coats. Equipment to be field painted shall be furnished with a factory applied prime coat.
- B. Touch-Up: If factory finish on any equipment furnished under Division 26 is damaged in shipment or during construction of building, the equipment shall be refinished by Contractor to satisfaction of Architect.
- C. Concealed Equipment: Uncoated cast-iron or steel that will be concealed, or will not be accessible when installations are completed, shall be given one heavy coat of black asphaltum before installation.

### 3.3 COMPLIANCE TESTS

- A. Conduct such tests of all portions of installation as may be necessary to ensure full compliance with the Drawings and Specifications. Tests shall be made in the presence of the Owner. Costs of test shall be borne by Contractor and Contractor shall provide all instruments, equipment, labor and materials to complete all the tests. Tests may be required on any item between installation of Work and the end of 1 year warranty period. Should these tests develop any defective materials, poor workmanship or variance with requirements of Specifications, Contractor shall make any changes necessary and remedy any defects at his expense.

### 3.4 ACCEPTANCE

- A. Final Review: The Contractor shall request a final review prior to system acceptance after:
  - 1. Completion of installation of all systems required under the Contract Documents.
  - 2. Submission and acceptance of operating and maintenance data.
  - 3. Completion of identification program.
- B. Acceptance: Is contingent on:
  - 1. Completion of final review and correction of all deficiencies.
  - 2. Satisfactory completion of acceptance tests demonstrating compliance with all performance and technical requirements of Contract Documents.

### 3.5 CLEAN-UP

- A. Upon completion and at other times during progress or Work, when required, remove all surplus materials, rubbish, and debris resulting from Work of Division 26.

END OF SECTION 26 00 50