INVITATION TO BID
from
COMMUNITY COLLEGE OF ALLEGHENY COUNTY
PURCHASING DEPARTMENT
800 ALLEGHENY AVENUE, PITTSBURGH, PENNSYLVANIA 15233

BID PROPOSAL NO. 988

DESCRIPTION: REPAIR MAIN ENTRANCE AT JONES HALL – ALLEGHENY CAMPUS

Sealed proposals will be received and publicly opened by a Purchasing Agent of the Community College of Allegheny County.

Proposals must be received by the Purchasing Department, 800 Allegheny Avenue, Pittsburgh, Pennsylvania 15233

on or before 2:00 PM, on Wednesday, February 22, 2017

Proposals received after this deadline will be considered as a “late bid” and returned unopened to the offerer.

BID SCOPE

Provide all labor, material, equipment, permits and supervision required to repair main entrance at Jones Hall – Allegheny Campus in accordance with specification, terms and conditions contained herein.

A MANDATORY pre-bid meeting and site visitation will be held onsite beginning at 9:00 a.m. on Wednesday, February 15, 2017. The assembly point will be the front entrance to Jones Hall, 808 Ridge Avenue, Pittsburgh, PA 15212.

For technical questions or to view site call Ray Marks, Assistant Director of Facilities at 412.237.3072. For procedural questions, call Mike Cvetic, Director of Purchasing, at 412.237.3146

BID REQUIREMENTS (where checked)

_X_ Bid Bond. ............... 10% of total base bid amount (Submit with Bid)

_X_ Performance Bond. .... 100% of total contract amount (Awardee Only)

_X_ Payment Bond. .......... 100% of total contract amount (Awardee Only)

_X_ Master Services Agreement (Awardee Only)

_X_ No Lien Agreement (Awardee Only)

_X_ Insurance Certificate (Awardee Only)

BID BOND: Bid must include the required bid bond or certified check, which will be returned to the unsuccessful bidder approximately 45 days after the bid due date.

PERFORMANCE BOND: The successful bidder will be required to enter into a written contract with the College and to furnish a contractor’s bond conditioned for the faithful and full performance of the contract with sufficient surety in the amount stated above. Any surety cosigning the contractor’s bond shall be an Incorporated surety company approved by the Court of Common Pleas of Allegheny County. Bond with surety must be furnished within 20 days after receipt of the contract. The Board of Trustees reserves the right to reject any bond furnished where it is in the best interest of the College to do so.

The College requires Power of Attorney attached to bonds to be dated concurrently, sealed, and executed by a proper live (not facsimile) signature.

PAYMENT BOND: The bidder to whom the contract is awarded shall furnish a bond to guarantee the payment of third-party subcontractors involved in fulfillment of services rendered against College contracts. Such bonds shall be with sufficient surety and in the amount stated above. Failure on the part of the contractor to furnish such bond shall be just cause for cancellation of award.

NO LIEN AGREEMENT AND/OR INSURANCE CERTIFICATES: As required by the College, the No Lien Agreement and/or Insurance Certificate may be requested of the successful bidder.

THE BOARD OF TRUSTEES RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS.
DESCRIPTION: REPAIR MAIN ENTRANCE AT JONES HALL – ALLEGHENY CAMPUS

INVITATION TO BID
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GENERAL CONDITIONS 7 Pages
PREVAILING MINIMUM WAGE DETERMINATION Allegheny County Rates
RETURN BID PROPOSAL FORMS
BIDDER SIGNATURE FORM Return Form 1.0
PRICE FORM Return Form 2.0-2.2
NON-COLLUSION AFFIDAVIT Return Form 3.0
& INSTRUCTIONS 1 Page
MINORITY PARTICIPATION GOALS Return Form 4.0
EXTENSION OF CONTRACT EXECUTION REQUIREMENTS Return Form 5.0

DOCUMENTS REQUIRED BY Awardee ONLY
PERFORMANCE BOND Copy Attached
PAYMENT BOND Copy Attached
MASTER SERVICES AGREEMENT Copy Attached
NO-LIEN AGREEMENT Copy Attached
INSURANCE REQUIREMENTS Form B
INDEX TO SPECIFICATIONS 01010-1 thru 01740-2
RMP Architects and Interior Designers 00 01 01 thru 32 13 13
DRAWINGS G001, A101 thru A110

The CCAC Purchasing Department is now publishing all bids via the CCAC website at https://www.ccac.edu/Bid-RFP_Opportunities.aspx. It will be each vendor’s responsibility to monitor the bid activity within the given website (“Bid and RFP Opportunities”) and ensure compliance with all applicable bid documents inclusive of any issued addenda. Failure to incorporate any applicable addenda in the final submittal may result in the rejection of your bid.

NOTE: FAX OR ELECTRONIC RESPONSES TO BID PROPOSALS ARE NOT ACCEPTABLE.

In the event a sealed bid is hand carried, it is the sole responsibility of the bidder to assure the bid is in possession of the CCAC Purchasing Department prior to the time set for opening.
COMMUNITY COLLEGE OF ALLEGHENY COUNTY

INSTRUCTIONS TO BIDDERS

1. All prices quoted shall be F.O.B. destination and include all freight and delivery charges to actual point of delivery.

2. **Bids that vary from specifications/addendum(s) may be rejected by the College.** Any and all changes to specifications will be issued by addenda via fax/mail. It is the responsibility of bidders to provide the College with company name, address, telephone, and fax numbers and contact names if applicable.

3. Bidders must be recognized dealers in specified materials and qualified to advise in the application and/or use of the materials. When requested, the bidder must satisfy the Community College of Allegheny County that they have the organization, capital, and stock availability and experience to fulfill their bid offer.

4. Bids may be rejected or award cancelled by the College if a bidder intends to sublet any/all of the required work.

5. Completely executed bid documents must be submitted in a **sealed envelope bearing the offering company’s name and address; and, the bid number must appear on the sealed envelope.** No College representative will bear any responsibility for the premature opening of a bid which is not properly addressed and identified.

6. Whenever the words “Purchasing Agent” or a pronoun referring to a College Agent appears in either the specifications and/or Articles of Agreement, the Agent is acting only under the authority of and subject to the approval of the Board of Trustees of the Community College of Allegheny County.

7. The College reserves the right to award all or any items, separately or in a lump sum whichever is in the best interest of the College.

8. Bids for supplies shall be submitted to the College in accordance with the numbered item(s) on the price sheet. Unit prices(s) shall prevail where extension of prices is requested.

9. Contracts will not be awarded by the College to any corporation, firm, or individual that has failed in any former contract with the College to perform work or complete work or, in the College’s sole judgment, to satisfactorily deliver or provide the quality of materials, fulfill a guarantee(s) or complete work in accordance with the schedule for such prior contract.”

10. If the College Agent is of the opinion that the awarded work/products are unnecessarily delayed, the rate of progress of delivery is unsatisfactory, or that the corporation, firm, or individual contractor is willfully violating any of the contract requirements or conditions or is acting in bad faith, the College’s Agent shall take whatever action necessary for the completion of the work and/or delivery of the products to the College. Resulting expenses to the College will be deducted from monies due the contractor and the bondsman will be held liable for any balance due at the completion of the contract.

11. Inspection of materials and workmanship of the contractor by a College Agent will not lessen the responsibility of the contractor from the obligation to perform and deliver satisfactory work/materials to the College. The contractor is expected to pay for the cost of tests for defective materials. This cost may be deducted from any monies due the contractor from the College.

12. The contractor will not receive instructions from a College Agent relative to the work or delivery until a contract has been duly signed and the bond, if required, is approved.

13. Companies may quote price(s) on work/material to any and all bidders and may also directly submit a bid to the College for the work/material.

14. When samples are requested by the College, the bidder must supply them free of charge. Samples will not be returned to the bidder.
15. The bidder is solely at risk when using unauthorized patented material.

16. Quantities requested by the College are for bidding purposes only. The College may purchase more or less than the estimated quantities.

17. The College reserves the right to reject any and all bids, and to waive minor discrepancies in the bids or specifications, when in the best interest of the College. The College may purchase any part, all, or none of the materials specified.

18. The College will reject materials that do not meet specifications, even if the bidder lists trade names, or names of such materials on the bid.

19. All prices quoted must be held firm for the contract period. Bids containing escalation or other clauses for price change may be rejected. Discounts or other uncalled for allowances quoted will not be considered in making the award and the bid may be rejected.

20. Unless otherwise specified, materials, supplies, and/or equipment must be delivered thirty (30) days from the date of the purchase order.

21. Unless otherwise specified, materials, supplies, and/or equipment must be new, current stock, and unused.

**SIGNING OF AGREEMENT AND BOND**

22. Successful bidders are required to sign Contract Articles of Agreement and bond forms as follows:

   **If trading as an Individual:** All copies of Contract Articles of Agreement and bond(s) must be signed by the individual to whom the award is made and signature must be witnessed by the same witness.

   **If trading as a Partnership:** All copies of Contract Articles of Agreement and bond(s) must be signed by every partner comprising the Partnership, regardless of number, and these signatures must be witnessed by the same witness.

   **If trading as a Corporation:** All copies of Contract Articles of Agreement and bond(s) must be signed by the President (or Vice President) and attested by the Secretary or Assistant Secretary and Corporate seal must appear on all copies.

   The County requires that Power of Attorney forms be attached to bonds, bear the same date as that appearing on the bonds and that the forms are sealed and executed by a proper live signature.

**FICTITIOUS NAME REGISTRATION**

23. To comply with a provision of the law regarding registration under the Fictitious Name Act of the Commonwealth of Pennsylvania, successful bidders trading as an Individual or a Partnership must submit a certified copy of their Fictitious Name Registration with their contract. Fictitious Name Registration forms are issued by the Office of the Prothonotary of Allegheny County, or the county in which the business is located.

**PREVENTION OF DELAY**

24. A contractor will be considered in default if the contractor has work performed or means employed in the carrying out of the contract that would in any way cause or result in a suspension or delay of, or strike upon the work to be performed of any of the trades working in or about the premises described, or in or about any other building of the Community College of Allegheny County.

25. When trade names or catalog numbers are used, bidders may quote on any equal (unless otherwise stated by the College) but such bids must show trade names and/or catalog numbers of the products.
COMMUNITY COLLEGE OF ALLEGHENY COUNTY

GENERAL CONDITIONS

FOR

CONSTRUCTION AND RENOVATION CONTRACTS

1. **PERMITS**
   It is the responsibility of the contractor to obtain all permits and/or licenses required by Federal, State, County, City, or other local Municipalities or Authorities for work done or services performed under this contract.

2. **ROLE OF CONTRACTOR**
   In the performance of the work hereunder, the contractor shall act as an independent contractor, and all of his agents, employees, and subcontractors shall be subject solely to the control, supervision, and authority of the contractor.

3. **EMPLOYEES OF THE CONTRACTOR**
   It is understood that the contractor in signing the contract will employ only competent and first-class workmen and mechanics; that no workmen shall be regarded as competent and first-class except those who are duly skilled in their respective branches of labor.

4. **BONDS**
   The College will accept only bonds written by surety companies authorized to do business in the Commonwealth of Pennsylvania and the County of Allegheny and included on the United States Treasury Department Annual List of Surety Companies published July first of each year. Limits for those companies appearing on the United States Treasury Department's list cannot be exceeded. This list is available for inspection in the Purchasing Department, Community College of Allegheny County, Administration Building, 800 Allegheny Avenue, Pittsburgh, Pennsylvania 15233. It is also available from the Surety Bond Branch, Financial Management Services, Department of the Treasury, Washington, D.C. 20226. Phone: 1.202.634.2214.

5. **EQUAL OPPORTUNITY**
   Contractor and all subcontractors shall not discriminate against any employee or applicant for employment because of race, color, creed, national origin, or sex. Contractor and all subcontractors shall also comply with all applicable Federal, State, and local Fair Employment Practice Acts, or similar Acts, Rules, and Regulations and whether or not applicable will comply with the Federal Civil Rights Act of 1964. The Terms and Provisions of Executive Order 11246 and any Executive Order modifying or superseding same, are incorporated herein with respect to any work subject thereto.

   The contractor and all subcontractors shall, in all solicitations or advertisements for employees placed by them or their behalf state all qualified applicants will receive consideration for employment without regard to race, religion, color, sex, or national origin.
6. **MINORITY & DISADVANTAGED PARTICIPATION GOALS**

   The College's goal is to obtain **15%** combined MBE/WBE/DBE (Minority-owned Business enterprise/Woman-owned Business Enterprise/Disadvantaged Business Enterprise) participation in the work. This is to be based on the dollar value of employment, subcontracts, supplies, goods, and services as a percentage of the **total contract amount**. The bidder/contractor must demonstrate to the College prior to award of the contract, and periodically thereafter throughout the term of the contract, their compliance and continued ability to comply with these goals.

   The **contractor shall submit with their bid (on Return Form 4.0) a completed Minority & Disadvantaged Contractor Commitment Plan that will contain the details of how they plan to comply with this goal should they be awarded the contract**.

   If the plan is not submitted in the bid or is not acceptable, the College may deem the bid non-responsive and may award the work to the next lowest responsive bidder with an acceptable plan. Thus, it behooves all bidders to formulate their M/W/DBE plan **before submitting a bid**.

**Finding Certified M/W/DBE’s** - All subcontractors and suppliers of goods and services used to comply with this goal must be **certified** minority or disadvantaged firms. They may be certified by any recognized and reputable organization such as the following: African American Chamber of Commerce, Allegheny County, Port Authority of Allegheny County, City of Pittsburgh, Pittsburgh Regional Minority Purchasing Council, Commonwealth of Pennsylvania, United States Federal Government.

If the firm is not certified and desires to be certified, it is suggested that they contact one of the following organizations. These organizations may also be used as references for sourcing M/W/DBE firms.

<table>
<thead>
<tr>
<th>Organization</th>
<th>Address</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allegheny County M/W/DBE Department</td>
<td>M/W/DBE Department</td>
<td>412.350.4309</td>
</tr>
<tr>
<td>County Office Building Rm 204</td>
<td>542 Forbes Avenue</td>
<td></td>
</tr>
<tr>
<td>Pittsburgh, Pennsylvania 15219</td>
<td>425 Sixth Avenue</td>
<td>412.391.4423</td>
</tr>
<tr>
<td>Diversity Business Resource Center</td>
<td>700 River Avenue Suite 231</td>
<td>412.322.3272</td>
</tr>
<tr>
<td>Pittsburgh, PA 15212</td>
<td>412.322.3272</td>
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<tr>
<td>EMSDC</td>
<td>Regional Enterprise Tower</td>
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</tr>
<tr>
<td>City of Pittsburgh</td>
<td>412.322.3272</td>
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<tr>
<td>African American Chamber of Commerce</td>
<td>Koppers Building</td>
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<tr>
<td>Pittsbugh, PA 15219</td>
<td>436 Seventh Avenue, Suite 2220</td>
<td></td>
</tr>
<tr>
<td>412.391.0610</td>
<td>Pittsburgh, PA 15219</td>
<td></td>
</tr>
</tbody>
</table>

A list of PA certified M/W/DBE firms can be found on the Internet at [http://www.paucep.com](http://www.paucep.com).
The College expects all firms to demonstrate a good faith effort to include M/W/DBE’s when bidding on College contracts. A good faith effort as defined by the Code of Federal Regulations (49CFR26) means “efforts to achieve a DBE goal or other requirement of this part which, by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement”.

If you are not successful in securing M/W/DBE participation after a good faith effort is made, provide the following in your waiver request:

- A detailed account of your efforts;
- Your normal business practice and/or inventory profile; and
- An active diversity plan/policy

**Reporting During and After Project Completion** - The contractor shall submit with their monthly application for payment a written M/W/DBE Contractor Report demonstrating their compliance with the goal. The report shall state the dollar amount spent on labor, materials, services, and subcontracts and shall list firm names and vendor names. At the completion of the project, with final application for payment, the contractor shall submit a recap of their compliance which shall state the dollar amount spent on labor, materials, subcontracts, and services as a percentage of the total contract amount. Projects with shorter timeframes shall require a one-time only report at the completion of the project. Reports are to be accompanied by back-up documentation evidencing the business relationship with the M/W/DBE for the particular project (e.g.: copies of invoices, purchase orders, or evidence of payments).

**Failure to Comply With M/W/DBE Goals** – If the contractor fails to make a good faith effort (as determined by the College) to comply with the College’s 15% M/W/DBE goal or fails to meet their M/W/DBE commitment or to submit documentation as required by the College, the College may consider such non-compliance or breach of contract and any one or more of the following may occur:

- Rejection of the bid
- Forfeiture of bid guaranty
- Termination of the contract
- The imposing of sanctions as deemed appropriate by the College
- Contractor being barred from bidding on College contracts for up to three (3) years
- Or such other remedy as the College deems appropriate
7. **FINANCIAL INTEREST**
All bidders for construction must be established firms competent to perform the required scope of work. All bidders must satisfy the Community College of Allegheny County that they have the requisite organization, capital, plant, stock, ability, and experience to satisfactorily execute and contract in accordance with the provisions of the contract in which they are interested. If the contractor's base bid is $25,000.00 or more, the American Institute of Architects form, "Contractors Qualification Statement" form A305 - 1986 (or latest revision) may be requested by CCAC. This form is available from the American Institute of Architects, 1735 New York Avenue N.W., Washington, D.C. 20006. If requested by CCAC, a completed form A305 is to be submitted within 48 business hours and may be faxed to 412.237.3195.

8. **EMPLOYMENT OF INDEPENDENT SUBCONTRACTORS**
If you are a contractor to the College and the value of the base contract is $25,000.00 or more, you must secure approval of all proposed subcontractors from the College prior to beginning work. Information on your proposed subcontractors is to be submitted on the form entitled Proposed Subcontractors.

Each proposed subcontractor to be employed must be an independent contractor "in fact" and must meet the following criteria:

a. The subcontractor must have a Federal identification number.
b. The subcontractor must perform these same services for others.
c. The subcontractor must have an established place of business.
d. The subcontractor must use their own tools and equipment.
e. The subcontractor must pay all taxes and other items required by law to be paid by an employer with respect to compensation paid to their employees.
f. The subcontractor must provide and maintain all insurance required by law and the College.

If the proposed subcontractor does not meet all of these criteria, they will not be approved.

9. **VERBAL AUTHORIZATIONS**
No verbal agreement or understanding with any officer, agent, or employee of the College either before or after the execution of the contract shall alter, amend, modify, or rescind any of the terms or provisions contained in any of the contract documents. This provision shall not limit or affect the right to make changes or variations in the work. Any changes must be authorized in writing.

10. **APPLICABLE LAW, ACTS, AND ORDINANCES**
The contractor(s) shall agree to abide by and be bound by all applicable provisions and regulations of all laws, acts, and ordinances relating to and regulating the hours and conditions of employment.
11. **PENNSYLVANIA PREVAILING WAGE ACT**

The Pennsylvania Prevailing Wage Act shall be incorporated into and made part of all College construction related contract(s) having an estimated value of $25,000.00 or more.

It is the responsibility of the contractor to ensure that they have included the appropriate Pennsylvania prevailing wage rates in their proposal to the College. Failure to do this will not be a reason for the contractor to withdraw their bid or fail to perform the contract or to request additional payments from the College.

In accordance with the Prevailing Wage Determination Act, the contractor(s) shall:

- a. Pay no less than the wage rates including contributions for employee benefits as determined in the decision of the Secretary of Labor and Industry and shall comply with the conditions of the Pennsylvania Prevailing Wage Act approved August 15, 1961 (Act No. 442) as amended August 9, 1963 and/or subsequent amendments thereof (Act No. 342) and the regulations issued pursuant thereto.

- b. Apply all applicable provisions of the Acts and Laws to all work performed on the contract by the contractor(s) and subcontractor(s).

- c. Insert in each of his subcontracts all of the stipulations contained in these required provisions and such other stipulations as may be required.

- d. Assure that no workmen be employed on the public work except in accordance with the classifications set forth in the decisions of the Secretary. In the event that additional or different classifications are necessary, the procedure set forth in Section 7 of the above referenced Regulations shall be followed.

- e. Assure that all workmen employed or working on this contract shall be paid unconditionally regardless of whether any contractual relationship exists or the nature of any contractual relationship which may be alleged to exist between any contractor, subcontractor, and workmen not less than once a week without deduction or debate on any account either directly or indirectly except authorized deductions, the full amounts due at the time of payment computed at the rates applicable to the time worked on the appropriate classification. Nothing in this contract, the Act or these Regulations, prohibits the payment of more than the general prevailing minimum wage rates as determined by the Secretary to any workmen on public work.

- f. Each subcontractor shall post for the entire period of construction the wage determination decisions of the Secretary including the effective date of any charges thereof in a prominent and easily accessible place or places at the site of the work and at such place or places used by them to pay workmen their wages. The posted notice of wage rates must contain the following information:

  1. Name of project.

  2. Name of public body for which it is being constructed.

  3. The crafts and classifications of workmen listed in the Secretary's general prevailing minimum wage rate determination for the particular project.
4. The general prevailing minimum wage rates determined for each craft and classification and the effective date of any changes.

5. A statement advising workmen that if they have been paid less than the general prevailing minimum wage rate for their job classification or that the contractor and/or subcontractor are not complying with the Act or these Regulations in any manner whatsoever they may file a protest with the Secretary of Labor and Industry. Any Workmen paid less than the rate specified in the contract shall have a civil right of action for the difference between the wage paid and the wages stipulated in the contract, which right of action must be exercised within six months from the occurrence of the event creating such right.

g. All subcontractors shall keep an accurate record showing the name, craft, and/or classification, number of hours worked per day, and the actual hourly rate of wage paid (including employee benefits) to each workman employed by him in connection with the public work and such record must include any deductions from each workman. The record shall be preserved for two years from the date of payment and shall be open at all reasonable hours to the inspection of the public body awarding the contract and to the Secretary or his duly authorized representative.

h. Assure that apprentices shall be limited to such numbers as shall be in accordance with a bonafide apprenticeship program registered with and approved by the Pennsylvania Apprenticeship and Training Council and only apprentices whose training and employment are in full compliance with the provisions of the Apprenticeship and Training Act approved July 14, 1961 (Act No. 304) and the Rules and Regulations issued pursuant thereto shall be employed on the public work project. Any workman using the tools of a craft who does not qualify as an apprentice within the provisions of this subsection shall be paid at the rate predetermined for journeymen in that particular craft and/or classification.

i. Pay wages without any deductions except authorized deductions. Employers not parties to a contract requiring contributions for employee benefits which the Secretary has determined to be included in the general prevailing minimum wage rate shall pay the monetary equivalent thereof directly to the workmen.

j. Be advised that payment of compensation to workmen for work performed on public work on a lump sum basis, or a piece work system, or a price certain for the completion of a certain amount of work, or the production of a certain result shall be deemed a violation of the Act and these Regulations regardless of the average hourly earnings resulting therefrom.

k. Each subcontractor shall file a statement each week and a final statement at the conclusion of the work on the contract with the contracting agency under oath and in form satisfactory to the Secretary certifying that all workmen have been paid wages in strict conformity with the provisions of the contract as prescribed by Section 3 of these Regulations; or, if any wages remain unpaid, to set forth the amount of wages due and owing to each workman respectively. The College shall require the contractor and all subcontractors to file weekly wage certifications utilizing form WH-347. (Reference: Section 10(a) of Act and Section 10 of Regulations). Prior to making final payment the College will require final wage certifications from all contractors and subcontractors.

12. PAYMENT TO CONTRACTORS
The College maintains the right to withhold a percentage of monies requested by contractors for work done under this contract in accordance with the American Institute of Architects Application for Payment form G-702 as indicated in Section 01152--Applications for Payment of the technical specifications.
13. **INSURANCE REQUIREMENT**
A properly executed certificate of insurance must be submitted with the signed Contract Articles of Agreement. The certificate of insurance must show that the contractor and subcontractors comply with the College's insurance requirements. The certificate of insurance must state that in the event any coverage shown is to be cancelled the College will be given a thirty day advance notice of the cancellation.

14. **MINORITY BIDDERS**
The Community College of Allegheny County hereby notifies all bidders that it will affirmatively ensure that minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

15. **MODIFICATION AND WITHDRAWAL OF BIDS**
   a. Bids may be modified or withdrawn by an appropriate document duly executed (in the manner that a Bid must be executed) and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids.
   b. Bidders may withdraw their bid within two (2) business days of the bid opening only within accordance of Commonwealth of Pennsylvania public bidding law.

16. **TAXES**
CCAC is a governmental entity and is generally exempt from sales and use tax with respect to purchases of building machinery and equipment. A tax exemption certificate will be provided upon request. It is the bidder’s responsibility to pay any/all applicable taxes on non-exempt equipment, supplies and services in accordance with applicable law.

17. **PENNSYLVANIA STEEL PRODUCTS PROCUREMENT ACT**
Contractor acknowledges that CCAC is a public agency subject to the requirements of the Pennsylvania Steel Products Procurement Act, 73 P.S. Section 1881 et. seq (the “SPPA”). Contractor therefore represents and warrants that any and all steel products purchased, used or supplied by it in the performance of the Contract will be melted and manufactured in the United States, and that its performance hereunder will otherwise comply with requirements of the SPPA at all times. Contractor further agrees to provide CCAC with documentation and/or certification of its compliance with the foregoing requirements, as required under the SPPA, and acknowledges that it shall not be entitled to receive payment hereunder until such documentation and/or certification has been provided.

18. **MARKUPS ON CHANGE ORDERS**
Markups on change order requests shall not exceed 15%. This would apply to overhead and profit, labor, materials, equipment, etc.

Revised 5/1/15
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<tr>
<th><strong>Project Name:</strong></th>
<th>REPAIR MAIN ENTRANCE @ JONES HALL</th>
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<td>Community College of Allegheny County</td>
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<td><strong>Determination Date:</strong></td>
<td>1/31/2017</td>
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<tr>
<td><strong>Assigned Field Office:</strong></td>
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<tr>
<td><strong>Field Office Phone Number:</strong></td>
<td>(412)565-5300</td>
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<tr>
<td><strong>Toll Free Phone Number:</strong></td>
<td>(877)504-8354</td>
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<td><strong>Project County:</strong></td>
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<td>6/1/2016</td>
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<td>Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers</td>
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<td>Cement Finishers</td>
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<td>Dockbuilder, Pile Drivers</td>
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## BUREAU OF LABOR LAW COMPLIANCE
### PREVAILING WAGES PROJECT RATES

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RETURN BID PROPOSAL FORM

FOR

BID PROPOSAL NO. 988

DESCRIPTION: REPAIR MAIN ENTRANCE AT JONES HALL – ALLEGHENY CAMPUS

Complete this form and submit with your bid.

• The undersigned agrees to comply with the Instructions to Bidders and Specifications for the price(s) quoted on the Return Price Form. Price(s) quoted include all allowable cash and/or credit discounts.
• The College may reject bids quoting unspecified discounts and/or allowances.

Submitted by:

Company Name Bidding (Please print) Contact Person at Company (Please print)

Signature Title
(Handwritten signature must appear here in ink.)

Address

Telephone Number (Include Area Code.) Fax Number (Include Area Code.)

Trading as: (Check one.) Please print.

_______ Individual Owner ________________________________

_______ Partnership Partner _______________ Partner ________________

_______ Corporation Exact Name ________________________________

State Incorporated ________________________________

THE BOARD OF TRUSTEES OF THE COLLEGE RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS.

Rev: 1/01

RETURN FORM 1.0
1. **Lump Sum Bid**

Having examined the **Contract Documents** dated January 20, 2017 for the above referenced project, as prepared by Radelet McCarthy Polletta Incorporated, Registered Architects, 300 First & Market Building, 100 First Avenue, Pittsburgh PA 15222, for the construction of said project, and having inspected the site of and the conditions affecting and governing the construction of said project, the undersigned Bidders hereby proposes to furnish all labor and materials, supervision, coordination, transportation, services and equipment required to construct and properly complete the General Construction included in the Contract Documents for a lump sum of:

\[
\text{Dollars} (\$) \quad \text{words} \quad \text{numerals}
\]

\[
\text{words} \quad \text{numerals}
\]

a. Included in the above Base Bid is a lump sum for work related to the new sidewalk of:

\[
\text{Dollars} (\$) \quad \text{words} \quad \text{numerals}
\]

\[
\text{words} \quad \text{numerals}
\]

**BIDDERS NAME:** ________________________________

(Please print)

**COMPANY NAME:** ________________________________

(Please print)
RETURN BID FORM BID 988

REPAIR MAIN ENTRANCE AT JONES HALL – ALLEGHENY CAMPUS

2. **Subcontractors**

If awarded the Contract for this Project, the undersigned Bidder proposes to engage the following Subcontractors:

Concrete: 

Masonry: 

Masonry Restoration: 

Door System: 

Electrical: 

Other: 

Other: 

3. **Schedule – Base Bid and Alternates**

If awarded the Contract for this Project, the undersigned Bidder agrees to complete the work as follows and during the time period stipulated in Division 01 Section “Summary”. All punch list items shall be complete within 14 calendar days of the date of substantial completion.

a. **Base Bid**: All work substantially complete and the site ready for use by the Owner within _______ calendar days from Notice to Proceed.

Indicate the change in duration, if any, should Alternate #4 be accepted. Add / Delete _______ calendar days from Base Bid duration.

b. **Base Bid and Alternate #1**: All work substantially complete and the site ready for use by the Owner within _______ calendar days from Notice to Proceed.

c. **Base Bid, Alternate #1, and Alternate #2**: All work substantially complete and the site ready for use by the Owner within _______ calendar days from Notice to Proceed.

d. **Base Bid, Alternate #1, Alternate #2, and Alternate #3**: All work substantially complete and the site ready for use by the Owner within _______ calendar days from Notice to Proceed.

RETURN FORM 2.1
4. **Allowances**

The Bidder includes the following material allowances.

a. **Allowance #1** – Stone to be replaced on cheek walls: __________ sq ft.

b. **Allowance #2** – Stone to be replaced on curbs: __________ lineal feet.

c. **Allowance #3** – Stone to be patched on cheek walls: __________ sq ft.

d. **Allowance #4** – Stone to be patched on curbs: __________ sq ft.

5. **Unit Prices**

As specified in Division 01 Section “Unit Prices”:

a. **Unit Price #1 Sidewalk:** ADD _____ /SF DEDUCT _____ /SF

b. **Unit Price #2 Replace Stone Veneer (Cheek Wall):** ADD _____ /SF DEDUCT _____ /SF

c. **Unit Price #3 Replace Stone Block (Curb):** ADD _____ /LF DEDUCT _____ /LF

d. **Unit Price #4 Patch Stone (General):** ADD _____ /SF DEDUCT _____ /SF

6. **Alternates**

As specified in Division 01 Section “Alternates”:

a. **Base Bid:** Lump Sum Bid indicated above.

   Dollars($
   
   words
   numerals

b. **Alternate #1 – Cheek Walls and Light Fixture:** The lump sum add for this alternate is:

   Dollars($
   
   words
   numerals

c. **Alternate #2 – Stone Curbs:** The lump sum add for this alternate is:

   Dollars($
   
   words
   numerals

d. **Alternate #3 – Entrance Doors:** The lump sum add for this alternate is:

   Dollars($
   
   words
   numerals

e. **Alternate #4 – Concrete Stair Base:** The lump sum change for this alternate is:

   Add/Deduct (Circle One) $
   
   words
   numerals
COMMUNITY COLLEGE OF ALLEGHENY COUNTY

NON-COLLUSION AFFIDAVIT

Contract/Bid No. 988

State of __________________________ :          :s.s.
County of ________________________ :

I state that I am ____________________________of_____________________________________
(title)    (name of my firm)
and that I am authorized to make this affidavit on behalf of my firm, and its owners, directors, and officers. I am the person
responsible in my firm for the price(s) and the amount of this bid.

I state that:

(1) The price(s) and amount of this bid have been arrived at independently and without consultation, communication or agreement with any bidder or potential bidder.

(2) Neither the price(s) nor the amount of this bid, and neither the approximate price(s) nor approximate amount
of this bid, have been disclosed to any other firm or person who is a bidder or potential bidder, and they will not be disclosed before bid opening.

(3) No attempt has been made or will be made to induce any firm or person to refrain from bidding on this
contract, or to submit a bid higher than this bid, or to submit any intentionally high or noncompetitive bid or
other form of complementary bid.

(4) The bid of my firm is made in good faith and not pursuant to any agreement or discussion with, or
inducement from, any firm or person to submit a complementary or other noncompetitive bid.

(5) ____________________________________________________, its affiliates,
(name of my firm)
subsidiaries, officers, directors and employees are not currently under investigation by any governmental agency and have
not in the last four years been convicted or found liable for any act prohibited by State or Federal law in any jurisdiction,
involving conspiracy or collusion with respect to bidding on any public contract, except as follows:

I state that______________________________________________________ understands and
(name of my firm)
acknowledges that the above representations are material and important, and will be relied on
by the Community College of Allegheny County in awarding the contract(s) for which this
bid is submitted. I understand and my firm understands that any misstatement in this affidavit
is and shall be treated as fraudulent concealment from the Community College of Allegheny
County of the true facts relating to the submission of bids for this contract.

Signature______________________________  Title_________________________
(MUST BE SIGNED HERE IN HANDWRITING, IN INK.)

Sworn to and subscribed before me this _________ day of ________________, 20____

Notary Public_________________________ My Commission Expires: __________

RETURN FORM 3.0
INSTRUCTIONS FOR NON-COLLUSION AFFIDAVIT

1. This Non-collusion Affidavit is material to any contract awarded pursuant to this bid. According to the Pennsylvania Antibid-Rigging Act, 73 P.S. § 1611 et seq., governmental agencies may require Non-collusion Affidavits to be submitted together with bids.

2. This Non-collusion Affidavit must be executed by the member, officer or employee of the bidder who makes the final decision on prices and the amount quoted in the bid.

3. Bid rigging and other efforts to restrain competition and the making of false sworn statements in connection with the submission of bids are unlawful and may be subject to criminal prosecution. The person who signs the Affidavit should examine it carefully before signing and assure himself or herself that each statement is true and accurate, making diligent inquiry, as necessary, of all other persons employed by or associated with the bidder with responsibilities for the preparation, approval or submission of the bid.

4. In the case of a bid submitted by a joint venture, each party to the venture must be identified in the bid documents, and an Affidavit must be submitted separately on behalf of each party.

5. The term “complementary bid” as used in the Affidavit has the meaning commonly associated with that term in the bidding process, and includes the knowing submission of bids higher than the bid of another firm, any intentionally high or noncompetitive bid, and any other form of bid submitted for the purpose of giving a false appearance of competition.

6. Failure to file an Affidavit in compliance with these instructions will result in disqualification of the bid.
COMMUNITY COLLEGE OF ALLEGHENY COUNTY

MBE/WBE PARTICIPATION: CCAC encourages the participation of minority and women-owned businesses in all of its contracts and is committed to providing maximum opportunities for qualified minority and/or women-owned business enterprises ("MBE/WBEs") to participate in its work. Bidder agrees (1) if qualified, to take reasonable and timely steps to obtain appropriate certification as an MBE and/or WBE, (2) to ensure that MBE and/or WBEs are appropriately considered as subcontractors and/or suppliers under this Agreement; and (3) to report moneys spent for MBE and/or WBE subcontractors and/or suppliers for work as CCAC may from time to time reasonably request. CCAC’s goal for MBE/WBE participation is 15%. Please provide documentation as to your firm’s good faith effort to reach this goal by describing all applicable details of MBE/WBE participation that may be included in the resulting agreement.
The following must be included with your bid.

Reference: General Conditions for Construction and Renovation Contracts - Item 6, Page 2 – Minority & Disadvantaged Participation Goals

A 15% M/W/DBE work participation is established. Document your firm’s good faith effort to obtain the 15% Goal:

<table>
<thead>
<tr>
<th>M/W/DBE Company</th>
<th>Contact Person</th>
<th>Phone Number</th>
<th>$Amount or Objective %</th>
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_____ I am an M/W/DBE. (ATTACH CERTIFICATION)  

Bidder acknowledges that CCAC may communicate with listed firms to verify the extent of the contact.

Bidding Company’s Name:__________________________________________________________

Signature:__________________________  Title:__________________________

Date:__________________________

Revised: 04/30/08  RETURN FORM 4.0
COMMUNITY COLLEGE OF ALLEGHENY COUNTY

BID PROPOSAL NO. 988

COMMONWEALTH OF PENNSYLVANIA
BID AWARD & RETENTION LAW
ACT NO. 1978-317, SENATE BILL 68, NOVEMBER 26, 1978

EXTENSION OF CONTRACT EXECUTION REQUIREMENTS

In the event the contract(s)/purchase order(s) resulting from the above specified bid proposal is/are in excess of $50,000.00, the above specified Act will apply.

This Act requires the awarding of a contract to the lowest responsible bidder within sixty (60) days of the date of bid opening and the execution of a contract within thirty (30) days after award by the College Board of Trustees. Thirty (30) day extensions of the date for award and for execution are permitted by the mutual written consent of the College and the successful bidder.

Due to the extent of the approval actions required prior to award and execution of any contract, it may not be possible for the College to complete contract award and execution within the sixty (60) day and thirty (30) day periods. Accordingly, each bidder is requested to indicate their agreement with a thirty (30) day extension of the sixty (60) day award date and thirty (30) day execution date by signing this form and returning it with their bid.

Name of Company

__________________________________________   ________________________________
Authorized Company Representative         Signature         Title

MUST BE SIGNED HERE IN HANDWRITING, IN INK

RETURN FORM 5.0
PERFORMANCE BOND

Know all men by these Presents that we ___________________________ (hereinafter called “Principal”) as Principal, and ___________________________ authorized to do business in the Commonwealth of Pennsylvania (hereinafter called “Surety”) as Surety, are held and firmly bound unto the Community College of Allegheny County, through its Board of Trustees, ___________________________ in the sum of ___________________________.

To be paid to the said College aforesaid, its certain attorney, or assigns. To which payment will and truly be made, said principal and said surety to bind themselves their respective successors or assigns jointly and severally, firmly by these presents.

WITNESS our hands and seals, the ___________________________ day of ___________________________ 20__.

WHEREAS the above bounded ___________________________ has filed with the Community College of Allegheny County, proposals for the ___________________________.

The Condition of the above Obligation is such that if the said ___________________________ shall perform ___________________________

In accordance with the agreement between ___________________________ and the Community College of Allegheny County of even date herewith and the specifications and proposals attached to and made part of the agreement, and shall indemnify and save harmless the said Community College of Allegheny County from all liens, charges, demands, loss and damages of every kind and nature, whatsoever. Then this obligation to be void, otherwise to be and remain in full force and virtue.

Attest: ___________________________ (SEAL)

CONTRACTOR

___________________________ (SEAL)

SECRETARY

___________________________ (SEAL)

PRESIDENT

Signed, Sealed and delivered in presence of ___________________________ (SEAL)

SURETY COMPANY

___________________________ (SEAL)

ADDRESS

___________________________ (SEAL)

TITLE
LABOR AND MATERIAL

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS:

That we ________________ as Principal
hereinafter called Principal, and
_______________________ as Surety, hereinafter called Surety, are held and firmly bound unto the
COMMUNITY COLLEGE OF ALLEGHENY COUNTY, through its Board of Trustees as Obligee, hereinafter called Owner, for the use and benefit of claimants
as hereinbelow defined, in the amount of ________________ Dollars ($______________),
for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these
presents.

WHEREAS, Principal has by written agreement, dated ________________ 20____, entered into a contract with Owner
for
in accordance with drawings and specifications prepared by _______________________
(Here insert full name, title and address)

which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal shall promptly make payment to all claimants as
hereinbelow defined, for all labor and material used or reasonably required for use in the performance of the contract, labor and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental of equipment directly applicable to the Contract.

(1) A claimant is defined as one having a direct contract with the Principal or with a sub-contractor of the Principal for labor, material, or both used or
reasonably required for use in the performance of the contract, labor and material being construed to include that part of water, gas, power, light, heat, oil,
gasoline, telephone service or rental of equipment directly applicable to the Contract.

(2) The above-named Principal and Surety hereby jointly and severally agree with the Owner that every claimant as herein defined, who has not been paid in
full before the expiration of a period of ninety (90) days after the date on which the last of such claimant’s work or labor was done or performed, or
materials were furnished by such claimant, may sue on this bond for the use of such claimant, prosecute the suit to final judgment for such sum or sums
as may be justly due claimant, and have execution thereon. The Owner shall not be liable for the payment of any costs or expenses of any such suit.

(3) No suit or action shall be commenced hereunder by any claimant.

(a) Unless claimant, other than one having a direct contract with the Principal, shall have given written notice to any two of the following: The
Principal, the Owner, or the Surety above-named, within ninety (90) days after such claimant did or performed the last of the work or labor, or
furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party
to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same
by registered mail or certified mail, postage prepaid, in an envelope addressed to the Principal, Owner or Surety, at any place where an office is
regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the
aforesaid project is located, save that such service need not be made by a public officer.

(b) After the expiration of one (1) year following the date on which Principal ceased work on said Contract, it being understood, however, that if
any limitation embodied in this bond is prohibited by any law controlling the construction hereof such limitation shall be deemed to be amended
so as to be equal to the minimum period of limitation permitted by such law.

(c) Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the project, or any
part thereof, is situated, or in the United States District Court for the district in which the project, or any part thereof, is situated, and not
elsewhere.

(4) The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by
Surety of mechanics’ liens which may be filed of record against said improvement, whether or not claim for the amount of such lien be presented under
and against this bond.

Signed and sealed this ________________ day of ________________ 20____

By ____________________________ (Seal) Principal

Witness ____________________________

By ____________________________ (Seal) Surety

Witness ____________________________

By ____________________________

This bond is issued simultaneously with performance bond in favor of the Owner conditioned on the full and faithful performance of the Contract.

Original – January 1980
MASTER SERVICES AGREEMENT
Bid 988 REPAIR MAIN ENTRANCE AT JONES HALL – ALLEHENGY CAMPUS
“Awardee Only”

THIS MASTER SERVICES AGREEMENT ("Agreement") is made and entered into as of this ---- day of --------, 2017, by and between Community College of Allegheny County, with a business office located at 800 Allegheny Avenue, Pittsburgh, PA 15233 (hereinafter referred to as the “College”), and __________________________ (hereinafter referred to as “Contractor”).

RECITALS

WHEREAS, the College has issued a Request for Quotation, Bid Solicitation, Request for Proposal, and/or a Purchase Order (hereinafter individually and collectively referred to as the “Order”), pursuant to

<table>
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which College seeks to procure certain work and services, as more fully described on the Order; and

WHEREAS, Contractor has submitted a proposal to the College to provide the services described in the Order, a copy of which is attached hereto as Exhibit A (hereinafter the “Proposal”) and incorporated by reference;

WHEREAS, the College desires to engage Contractor to provide the services, pursuant to and in accordance with the terms and conditions that this Agreement set forth herein.

NOW, THEREFORE, in consideration of the premises and covenants that this Agreement contains, the receipt and adequacy of which are hereby acknowledged, the parties, intending to be legally bound, agree as follows:

1. **Term.** The term of this Agreement shall be as specified in the Order unless otherwise stated in the section below. If no date is specified, this Agreement shall begin with the date first stated above and terminate upon satisfactory completion of the services described herein.

2. **Services.** Contractor shall fully and faithfully perform the work and services described in the Order and the Proposal and any specifications, scope of work or other documentation attached thereto. Contractor warrants that all work and services performed by or on behalf of it under this Agreement will conform to all terms and specifications set forth in the Order and in the Proposal.

3. **Price/Fees:** The College shall pay Contractor for the services and work performed by Contractor in accordance with the fees and/or prices set forth in the Proposal.
4. **Terms and Conditions:** This Agreement, and the services to be performed by Contractor hereunder, will be subject to and governed by College’s Standard Terms and Conditions for the Purchase of Goods and Services (“Master Terms”), which are incorporated herein by reference. The Master Terms can be viewed and downloaded at https://www.ccac.edu/client/twocolumn.aspx?pageid=28676. By signing below, Contractor acknowledges its receipt and acceptance of the Master Terms.

5. **Insurance Requirements:** In addition to the Master Terms, Contractor shall comply with the insurance and indemnification requirements set forth on Exhibit B, which are incorporated herein by reference. Prior to commencing performance of the Services, Contractor shall furnish to the College a properly executed certificate(s) of insurance which evidence all insurance required by Exhibit B. Said certificate(s) of insurance shall be attached herein as Exhibit C.

6. **Assignment.** Contractor may not assign or subcontract this Agreement or its performance thereof, in whole or in part, without the College’s prior written consent.

7. **Entire Agreement; Modification.** This Agreement, together with the Exhibits and other documents referenced and incorporated herein, sets forth the entire agreement of the parties on the subject matter hereof and supersedes all previous or concurrent agreements between them, whether oral or written. Any proposal, quotation, acknowledgment, confirmation or other writing submitted by Contractor to the College shall not be deemed to amend or modify this Agreement, and will be of no legal effect except to the extent that it serves to identify the work and services to be performed by the Contractor. This Agreement, and the terms set forth in the Master Terms, will control over any conflicting terms or provisions contained in any proposal, invoice or other documentation submitted by Contractor to College. The terms of this Agreement may not be modified or changed except by a writing that both parties sign. This Agreement shall inure to the benefit of the College and Contractor and the College’s successors and assigns.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the day and year first above written.

AWARDEE ONLY – COMPANY NAME

COMMUNITY COLLEGE OF ALLEGHENY COUNTY

By: ___________________________    By: Joyce Breckenridge
Signature: ___________________________     Signature: ___________________________
Title: ___________________________    Title: Vice President for Finance
Date: ___________________________    Date: ___________________________

Revised 3/3/15

EXHIBITS - The following Exhibits are attached hereto and made a part of this Agreement for all purposes:

- [ ] Exhibit A - Contractor’s Proposal Response
- [ ] Exhibit B - Insurance Requirements
- [ ] Exhibit C - Contractor’s Certificate(s) of Insurance.
- [ ] Exhibit D - Performance and Payment Bonds
- [ ] Exhibit E - No-Lien Agreement
Made the _____ day of __________, 20__ between ____________________________

_________________________ Pittsburgh, Pennsylvania Contractor and Community College of Allegheny County,

Pittsburgh, Pennsylvania, Owner.

Whereas, by separate written contract dated and executed the day and year first above written. The Owner and Contractor have entered into a No-Lien Contract (herein described for convenience as the Contract) to furnish all labor, materials, supplies, tools, and equipment necessary to complete the Contract in accordance with the specifications prepared by the Owner, and the provisions on the Contract between the Owner and Contractor, as more particularly recited therein.

NOW, THEREFORE, in consideration of the execution of said Contract for the purchases of and delivery on the premises of the owner and terms and conditions thereof, the Contractor covenants and agrees as follows:

1. The contractor covenants and agrees that no mechanics’ claims or liens shall be entered or filed by the Contractor or by any subcontractor or materialsman or by an other person against the building or property of the Owner described more particularly hereinafter, for or on account of any work or labor done, materials, supplies, tools and equipment furnished in, upon, or about the building and property of the Owner described more particularly hereinafter.

2. Any and all right of lien is hereby waived and the Contractor, all subcontractors, all materialsmen, all persons supplying labor, and/or materials and all other persons shall look exclusively to and hold the Contractor and not the property liable for any sums due, however arising.

3. The property as to which this No-Lien Agreement is filed is located at Community College of Allegheny County, ________________________________.

Block/Lot __________

IN WITNESS WHEREOF, the parties hereto, with the intent to be bound legally thereby have duly executed this No-Lien Agreement the day and year first above written.

COMMUNITY COLLEGE OF ALLEGHENY COUNTY (OWNER)

__________________________________________
CCAC - VICE PRESIDENT FOR FINANCE (revised 3/16/15)

__________________________________________
(CONTRACTOR)                                   WITNESS
**COMMUNITY COLLEGE OF ALLEGHENY COUNTY**  
800 ALLEGHENY AVENUE PITTSBURGH, PA 15233

**INSURANCE REQUIREMENTS**

**FORM B**

**Indemnification.** To the fullest extent permitted by law, Contractor shall defend, indemnify and hold harmless the Community College of Allegheny County (CCAC), its agents, officers, employees, and volunteers from and against all claims, damages, losses, and expenses (including but not limited to attorney fees and court costs) arising from the acts, errors, mistakes, omissions, work or service of Contractor, its agents, employees, or any tier of its subcontractors in the performance of this Contract. The amount and type of insurance coverage requirements of this Contract will in no way be construed as limiting the scope of indemnification in this Paragraph.

**Insurance.** Contractor shall maintain during the term of this Contract insurance policies described below issued by companies licensed in Pennsylvania with a current A.M. Best rating of A- or better. At the signing of this Contract, and prior to the commencement of any work, Contractor shall furnish the CCAC Purchasing Department with a Certificate of Insurance evidencing the required coverages, conditions, and limits required by this Contract at the following address: Community College of Allegheny County, Purchasing Department, 800 Allegheny Avenue, Pittsburgh, PA 15233.

The insurance policies, except Workers’ Compensation and Professional Liability, shall be endorsed to name Community College of Allegheny County, its agents, officers, employees, and volunteers as Additional Insureds with the following language or its equivalent:

Community College of Allegheny County, its agents, officers, employees, and volunteers are hereby named as additional insureds as their interest may appear.

All such Certificates shall provide a 30-day notice of cancellation. Renewal Certificates must be provided for any policies that expire during the term of this Contract. Certificate must specify whether coverage is written on an Occurrence or a Claims Made Policy form.

Insurance coverage required under this Contract is:

1) **Commercial General Liability** insurance with a limit of not less than $1,000,000 per occurrence for bodily injury, property damage, personal injury, products and completed operations, and blanket contractual coverage, including but not limited to the liability assumed under the indemnification provisions of this Contract.

2) **Automobile Liability** insurance with a combined single limit for bodily injury and property damage of not less than $1,000,000 each occurrence with respect to Contractor’s owned, hired, and non-owned vehicles.

3) **Workers’ Compensation** insurance with limits statutorily required by any Federal or State law and **Employer’s Liability** insurance of not less than $100,000 for each accident, $100,000 disease for each employee, and $500,000 disease policy limit.

4) **Professional Liability** insurance (where applicable) covering acts, errors, mistakes, and omissions arising out of the work or services performed by the Contractor, or any person employed by the Contractor, with a limit of not less than $1,000,000 each claim.

Rev 4/04
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BID 988
REPAIR MAIN ENTRANCE AT JONES HALL - ALLEGHENY CAMPUS

CCAC DIVISION I - GENERAL REQUIREMENTS

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REPAIR MAIN ENTRANCE AT JONES HALL - ALLEGHENY CAMPUS

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26 56 00 – Exterior Lighting
32 13 13 – Concrete Paving

RMP DRAWINGS

G001, A101 thru A110
SUMMARY OF PROJECT

PART 1   GENERAL

1.01   REQUIREMENTS INCLUDED
   A.   Title of Project, type of contracts and Work of each separate contract.
   B.   Work by others and future work.
   C.   Work sequence.
   D.   Contractor use of premises.
   E.   Owner occupancy.
   F.   Owner-furnished items.
   G.   Field Engineering
   H.   Coordination
   I.   Reference Standards
   J.   Project Meetings

1.02   RELATED WORK
   A.   General Conditions, special conditions, instructions to bidders.
   B.   Section 01041 - Project Coordination: Coordination of work of separate contracts.

1.03   PROJECT: WORK COVERED BY CONTRACT DOCUMENTS
   A.   Work of a single prime contract for the following Project at Allegheny Campus, Ridge Avenue, Pittsburgh, Pennsylvania (15212) for the Community College of Allegheny County, Owner, further identified as the College or the Owner:
      1.   Project #16-AC-001 – Repair Main Entrance @ Jones Hall.
      2.   A mandatory prebid meeting will be held on the construction site. The date and time is indicated on the Invitation to Bid sheet. All prospective bidders must attend or their bids will be disqualified.
      3.   All Bidders are required to hold firm their price for one hundred twenty (120) days after the bid has been awarded.

1.04   CONTRACTS
   A.   Perform work under a single lump sum prime contract with Owner.
      1.   General Construction - including repair and patch paving work.
   B.   The scope of work of the Contract is identified on the drawings and in the following Articles.
   C.   The contractor shall be responsible for the removal and replacement of curbs as identified on the Drawings.
   D.   The contractor shall be responsible for obtaining all building and other required permits.
1.05 ADMINISTRATIVE & PROCEDURAL SECTIONS APPLICABLE TO ALL PRIME CONTRACTS

A. Section 01031 - Alteration Project Procedures
B. Section 01041 - Project Coordination
C. Section 01045 - Cutting and Patching
D. Section 01152 - Applications for Payment
E. Section 01153 - Change Order Procedures
F. Section 01200 - Project Meetings
G. Section 01300 - Submittals
H. Section 01400 - Quality Controls
I. Section 01500 - Construction Facilities & Temporary Controls
J. Section 01540 - Security
K. Section 01570 - Traffic Regulation
L. Section 01590 - Field Office & Sheds
M. Section 01600 - Material & Equipment: Storage & Protection Product Options and Substitutions
N. Section 01700 - Contract Closeout
O. Section 01710 - Cleaning
P. Section 01720 - Project Record Documents
Q. Section 01740 - Warranties & Bonds
R. PennDOT Spec. Pub 408 is not part of this document, but is to be considered as part of the contract specifications. Sections included are:
   1. Section 203 - Excavation
   2. Section 210 - Subgrade
   3. Section 350 - Subbase
   4. Section 676 - Cement Concrete Sidewalks
   5. Section 704 - Cement Concrete
   6. Section 705 - Joint Material
   7. Section 709.3 - Steelwelded Wire Mesh
   8. Section 711 - Concrete Curing Materials and Admixtures

1.06 TEMPORARY FACILITIES & SERVICES APPLICABLE TO PRIME CONTRACT

A. Section 01500 - Temporary Electricity, Temporary Lighting, Temporary Telephone, Temporary Water, Sanitation Facilities, Construction Aids and Temporary Enclosures.
B. Section 01500 - Construction Cleaning; Cleaning of Contract Work; delivery of debris to collection receptacles.
C. Section 01590 - Field Offices & Sheds: Field offices and sheds required for Contract Work.

1.07 GENERAL CONSTRUCTION

A. Division 1 - General Requirements:
   1. Administrative & Procedural Sections
   2. Facilities & Services Sections
1.08  WORK SEQUENCE
A. Construct work in stages to accommodate College's (Owner) intended use of the facilities. Coordinate Progress Schedule and coordinate with College's (Owner) during construction of the facility.

1.09  CONTRACTOR USE OF PREMISES
A. Contractor shall limit use of premises for work, for storage, and for access work by other contractors.
B. Coordinate use of premises under direction of the Contractor.
C. Assume full responsibility for protection and safekeeping of products under this contract.
D. Obtain and pay for use of additional storage or work areas needed for operations under this Contract.

1.10  OWNER OCCUPANCY
A. College will occupy part premises during entire period of construction for the conduct of their normal operations. Cooperate with College to minimize conflict and to facilitate Owner operations.
B. Noise and dirt may cause disruption to the College’s ability to operate normally. Any construction activity that would cause noise, dust or dirt is to be identified by the Contractor to the Owner. A mutually agreed upon schedule for said work will be coordinated by the Owner and Contractor.

1.11  FIELD ENGINEERING
A. Provide field engineering services; establish grades, lines and levels by use of recognized engineering survey practices.

1.12  COORDINATION
A. The contractor shall coordinate the work of any and all subcontractors and shall coordinate all the work of the various sections of Specifications to assure efficient and orderly sequence of installation of construction elements, as stated in the following paragraphs with provisions for accommodating items to be installed later.
B. Verify characteristics of elements of interrelated operating equipment are compatible; coordinate work of various sections having interdependent responsibilities for installing, connecting to and placing in service such equipment.
C. The contractor shall obtain all necessary permits and licenses and provide copies of same to Owner prior to start of work.
D. The contractor shall contact utility companies prior to any excavation to determine the location of any underground lines. The contractor shall be responsible for any damage to above or below ground utility lines resulting from his actions.
1.13 REFERENCE STANDARDS
A. For Products specified by association or trade standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
B. The date of the standard is that in effect as of the Bid date, except when a specific date is specified.
C. Obtain copies of standards when required by contract Documents. Maintain copy at job site during progress of the specific work.

1.14 PROJECT MEETINGS
A. Attend project meetings throughout progress of the work:
   Preconstruction meeting and progress meetings at maximum weekly intervals.
B. Attendance: Job superintendent, major subcontractors and suppliers; Owner and Architect as appropriate to agenda topics for each meeting.
C. Suggested Agenda: Review of work progress, status of progress schedule and adjustments thereto, delivery schedules, submittals, maintenance of quality standards, pending changes and substitutions and other items affecting progress of the work.

PART 2 PRODUCTS
Not Used

PART 3 EXECUTION
Not Used

END OF SECTION
PART 1   GENERAL

1.01   REQUIREMENTS INCLUDED
A. Coordinate work of trades and schedule elements of alterations and renovation work by procedures and methods to expedite completion of the work.
B. In addition to demolition specified in Section 02072, and that specifically shown, cut, move or remove items as necessary to provide access or to allow alterations and new work to proceed. Include such items as:
   1. Repair or removal of hazardous or unsanitary conditions.
   2. Removal of abandoned items and items serving no useful purpose such as abandoned piping, conduit and wiring.
   3. Cleaning of surfaces, and removal of surface finishes as needed to install new work and finishes.
C. Patch, repair and refinish existing items to remain to the specified condition for each material with a workmanlike transition to adjacent new items of construction.

1.02   RELATED REQUIREMENTS
A. Section 01010 - Summary of Project
B. Section 01045 - Cutting and Patching
C. Section 01300 - Submittals
D. Section 01500 - Construction Facilities & Temporary Controls
F. Section 01540 - Security
G. Section 01710 - Cleaning

1.03   SEQUENCE AND SCHEDULES
A. Schedule work as specified in Section 01010.
B. Submit detailed schedule for alterations work, coordinated with the Construction Schedules. Show:
   1. Area of work, and date of occupancy of area.
   2. Date of Substantial Completion for area of alterations work, as appropriate.
   3. Trades and subcontractors employed in project.

1.04   ALTERTATIONS, CUTTING AND PROTECTION
A. Assign the work of moving, removal, cutting and patching to trades qualified to perform the work in a manner to cause least damage to each type of work, and provide means of returning surfaces to appearance of new work.
B. Perform cutting and removal work to remove minimum necessary, and in a manner to avoid damage to adjacent work.
   1. Cut finish surfaces such as concrete, asphalt or metals, by methods to terminate surfaces in a straight line at a natural point of division.
C. Perform cutting and patching as specified in Section 01045.
D. Protect existing finishes, material and adjacent work which is scheduled to remain from damage.
   1. Protect existing and new work from weather and extremes of temperature.
      a. Provide weather protection, waterproofing and humidity control as needed to prevent damage to remaining existing work and to new work.
E. The CONTRACTOR shall provide temporary enclosures as specified in Section 01500, to separate work areas from the other areas occupied by Owner and to provide pedestrian protection.
F. Discoveries of construction, having a historic or private value shall remain in the possession of Owner.
   1. Promptly notify Owner.
   2. Protect discovery from damage from elements or work.
   3. Contractor shall store items to be retained by Owner in a safe, dry place on site, or shall dispose of items which Owner releases.

PART 2 PRODUCTS

2.01 PRODUCTS FOR PATCHING, EXTENDING AND MATCHING
A. General Requirements that work be Complete:
   1. Provide same products or types of construction as that in existing structure, as needed to patch, extend or match existing work.
      a. Generally Contract Documents will not define products or standards of workmanship present in existing construction; Contractor shall determine products by inspection and any necessary testing, and workmanship by use of the existing as a sample of comparison.
   2. Presence of a product, finish, or type of construction, requires that patching, extending or matching shall be performed as necessary to make work complete and consistent to identical standards of quality.
PART 3 EXECUTION

3.01 PERFORMANCE
A. Patch and extend existing work using skilled mechanics who are capable of matching existing quality of workmanship. Quality of patched or extended work shall be not less than that specified for new work.

3.02 ADJUSTMENTS
A. Where existing construction is removed and must be replaced, patch with finish materials to match existing exactly and provide smooth planes without breaks or steps. Where extreme change of plane of two inches or more occurs, request instructions from the Owner as to method of making transition.

3.03 DAMAGED SURFACES
A. Patch and replace any portion of an existing finished surface which is found to be damaged with matching material to provide adequate support of substrate prior to patching the finish.

3.04 TRANSITION FROM EXISTING TO NEW WORK
A. When new work abuts or finishes flush with existing work, make a smooth and workmanlike transition. Patched work shall match existing adjacent work in texture and appearance so that the patch or transition is invisible at a distance of five feet.
   1. When finished surfaces are cut in such a way that a smooth transition with new work is not possible, terminate existing surface in a neat manner along a straight line at a natural line of division.

3.05 CLEANING
A. Perform periodic site cleaning as specified in Section 01700.
   1. Clean areas daily.
B. At completion of work of each trade, clean area and make surfaces ready for work of successive trades.
C. At completion of work in each area, provide final cleaning and return area to a condition suitable for use by Owner.

END OF SECTION
PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED
A. The Contractor will coordinate the Work of subcontractor for the Project.

1.02 RELATED REQUIREMENTS
A. Conditions of the Contract
B. Section 01010 - Summary of Work
C. Section 01045 - Cutting and Patching
D. Section 01152 - Applications for Payments
E. Section 01200 - Project Meetings
F. Section 01300 - Submittals
G. Section 01700 - Contract Closeout
H. Section 01710 - Cleaning

1.03 CONSTRUCTION ORGANIZATION AND START UP
A. The Contractor shall establish on-site lines of communications:
   1. Obtain permits and approvals:
      a. Building permits and special permits required for Work or
         for temporary facilities.
      b. Verify that contractors and subcontractors have obtained
         inspections for Work and for temporary facilities.
   2. Control the use of Site:
      a. Supervise field engineering and site layout.
      b. Allocate space for Contractor's use for field
         offices, sheds and work and storage areas.
      c. Establish pedestrian and vehicular access, traffic and
         parking allocations and regulations.
      d. Monitor use of site during construction.

1.04 GENERAL CONTRACTOR DUTIES
A. Construction Schedules:
   1. Coordinate schedules of the contractors.
   2. Schedule and hold coordination meetings with the sub-
      contractors to review areas of work and potential problems with
      work and or schedules.
   3. Coordinate the preparation of a detailed overall schedule of
      basic operations for all contractors.
4. Monitor schedules as work progresses:
   a. Identify potential variances between schedules and probable completion dates for each phase.
   b. Recommend to Owner adjustments in schedule to meet required completion dates.
   c. Adjust schedules of Contractors as required.
   d. Document changes in schedule, submit to Owner and to involved Contractors.

B. Prepare coordination Drawings as required to resolve conflicts and to assure coordination of the Work.
   1. Submit to Owner.
   2. Reproduce and distribute copies to concerned parties after College review.

C. Monitor contractor's periodic cleaning:
   1. Enforce compliance with specifications.
   2. Resolve any conflicts.

D. Maintain Reports and Records at Job Site and make available to College.
   1. Daily log of progress of Work of the Contractor.
   2. Records:
      a. Contracts
      b. Purchase Orders
      c. Materials and Equipment Records
      d. Applicable handbooks, codes and standards.
   3. Obtain information from contractors and maintain file of record documents.
   4. Assemble documentation for handling of claims and disputes.

PART 2 PRODUCTS
Not Used

PART 3 EXECUTION
Not Used

END OF SECTION
PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED
   A. The CONTRACTOR shall be responsible for all cutting, fitting and patching required to complete the work or to:
      1. Make its several parts fit together properly.
      2. Uncover portions of the work to provide for installation of ill-timed work.
      3. Remove and replace defective work.
      4. Remove and replace work not conforming to requirements of Contract Documents.
      5. Remove samples of installed work as specified for testing.

1.02 RELATED REQUIREMENTS
   A. Section 01010 - Summary of Project
   B. Section 01031 - Alteration Project Procedures
   C. Section 01600 - Material and Equipment

1.03 SUBMITTALS
   A. Submit a written request to Owner well in advance of executing any cutting or alteration which affects:
      1. Work of the Owner or any separate contractor.
      2. Structural value or integrity of any element of the Project.
      3. Integrity or effectiveness of weather-exposed or moisture-resistant elements or systems.
      4. Efficiency, operational life, maintenance or safety of operational elements.
      5. Visual qualities of sight-exposed elements.
   B. Request shall include:
      1. Identification of the Project.
      2. Description of affected work.
      3. The necessity for cutting, alteration or excavation.
      4. Effect of work on Owner or any separate contractor, or on structural or weatherproof integrity of Project.
      5. Description of proposed work:
         a. Scope of cutting, patching, alteration or excavation.
         b. Trades who will execute the work.
         c. Products proposed to be used.
         d. Extent of refinishing to be done.
      6. Alternatives to cutting and patching.
      7. Cost proposal, when applicable.
      8. Written permission of any separate contractor whose work will be affected.
C. Should conditions of work or the schedule indicate a change of products from original installation, Contractor shall submit request for substitution as specified in Section 01600 - Material and Equipment.

D. Submit written notice to Owner designating the date and the time the work will be uncovered.

PART 2 PRODUCTS

2.01 MATERIALS
A. Comply with specifications and standards for each specific product involved.

PART 3 EXECUTION

3.01 INSPECTION
A. Inspect existing conditions of Project, including elements subject to damage or to movement during cutting and patching.
B. After uncovering work, inspect conditions affecting installation of Products or performance of work.
C. Report unsatisfactory or questionable conditions to Owner in writing; do not proceed with work until Owner has provided further instructions.

3.02 PREPARATION
A. Provide adequate temporary support as necessary to assure structural value of integrity of affected portion of work.
B. Provide devices and methods to protect other portions of Project from damage.
C. Provide protection from elements for that portion of the Project which may be exposed by cutting and patching work and maintain excavations free from water.

3.03 PERFORMANCE
A. Execute cutting and demolition by methods which will prevent damage to other work, and will provide proper surfaces to receive installation of repairs.
B. Execute excavating and backfilling by methods which will prevent settlement or damage to other work.
C. Employ proper trade to perform cutting and patching for:
   1. Weather-exposed or moisture-resistent elements.
   2. Sight-exposed finished surfaces.
D. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances and finishes.
E. Restore work which has been cut or removed; install new products to provide completed work in accord with requirements of Contract Documents.
F. Fit work airtight to pipes, sleeves, ducts, conduit and other penetrations through surfaces.
G. Refinish entire surfaces as necessary to provide an even finish to match adjacent finishes:
   1. For continuous surfaces, refinish to nearest intersection.

END OF SECTION
APPLICATIONS FOR PAYMENT

PART 1   GENERAL

1.01   REQUIREMENTS INCLUDED
   A.   Submit Applications for Payment to Owner in accord with the schedule established by Conditions of the Contract and Agreement.

1.02   RELATED REQUIREMENTS
   A.   Agreement between Owner and Contractor
   B.   Conditions of the Contract
   C.   Section 01153 - Change Order Procedures
   D.   Section 01300 - Submittals
   E.   Section 01700 - Contract Closeout

1.03   FORMAT AND DATA REQUIRED
   A.   Submit itemized applications typed on AIA Document G702, Application and Certificate for Payment, and continuation sheets G702A to:
      Community College of Allegheny County
      Attention Raymond C. Marks, Project Manager
      800 Allegheny Avenue
      Pittsburgh, PA 15233
   B.   Provide itemized data on continuation sheet:
      1.   Format, schedules, line items and value; those of the Schedule of Values accepted by Owner.

1.04   PREPARATION OF APPLICATION FOR EACH PROGRESS PAYMENT
   A.   Application Form:
      1.   Fill in required information, including that for approved Change Orders executed prior to date of submittal of application.
      2.   Fill in summary of dollar values to agree with respective totals indicated on continuation sheets.
      3.   Execute certification with signature of a responsible officer of Contract firm.
   B.   Continuation Sheets:
      1.   Fill in total list of all scheduled component items of Work with item number and scheduled dollar value for each item.
      2.   Fill in dollar value in each column for each scheduled line item when work has been performed or product stored.
         a.   Round off values to nearest dollar, or as specified for Schedule of Values.
      3.   List each approved Change Order executed prior to date of Submission at the end of the continuation sheets.
         a.   List by Change Order Number, and description, as for an original component item of work.
C. Retainage

1. The Contractor shall indicate a percentage of the completed work and stored material retained in each application for payment.

2. The retainage shall be calculated from Line Item 4 "Total Completed and Stored to Date" with the breakdown shown in Line Item 5a and 5b according to the following schedule:

<table>
<thead>
<tr>
<th>Contract Work Completed</th>
<th>Retained Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 100%</td>
<td>10%</td>
</tr>
</tbody>
</table>

3. The Contractor shall reduce the retainage as work progresses within the schedule as shown or may request in writing the reduction of retainage as job conditions warrant.

4. The College will reserve the right to approve or reject the reduction of retainage based upon the values shown in the Continuation Sheet G-703 which are in excess of the actual work completed or items which may effect the job progress or completion.

1.05 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

A. When the Owner requires substantiating data, Contractor shall submit suitable information, with a cover letter identifying:

1. Project
2. Application number and date
3. Detailed list of enclosures
4. For stored products:
   a. Item number and identification as shown on application.
   b. Description of specific material.

B. Submit one copy of data and cover letter for each copy of application.

1.06 PREPARATION OF APPLICATION FOR FINAL PAYMENT

A. Fill in Application Form as specified for progress payments.
B. Use continuation sheet for presenting the final statement of accounting as specified in Section 01700 - Contract Closeout.

1.07 SUBMITTAL PROCEDURE

A. Submit one (1) original, notarized Applications for Payment to Owner.
B. When Owner finds Application properly completed and correct, he will process Pay Application for payment.
1.08 REFUND OF SALES TAX
A. Access to Accounting Record - The Contractor shall check all materials, equipment and labor entering into the Work and shall keep such full and detailed accounts as may be necessary for proper financial management under this Agreement and the system shall be satisfactory to the Owner. The Owner, its representative or any regulatory agency shall be afforded access to all the Contractor's records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda and similar data relating to this Contract and the Contractor shall preserve all such records for a period of three years, or for such longer period as may be required by law, after the final payment.

B. Assignment of Refund Rights - The contractor agrees to assign and transfer to the Owner all its rights to sales and use tax which may be refunded as a result of a claim for refund for materials purchased in connection with this contract. The Contractor further agrees that it will not file a claim for refund for any sales or use tax which is the subject of this assignment.

C. Contracts with Subcontractors - The Contractor agrees to include the "Access to Accounting Records" and "Assignment of Refund Rights" paragraphs in full in any contracts with subcontractors.

1.09 TAXES
A. Owner is a governmental entity and is generally exempt from sales and use tax with respect to purchases of building machinery and equipment. A tax exemption certificate will be provided upon request. It is the successful Bidder's responsibility to pay any/all applicable taxes on nonexempt equipment, supplies and services in accordance with applicable law.
CHANGE ORDER PROCEDURES

SECTION 01153

CHANGE ORDER PROCEDURES

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Promptly implement change order procedures.
   1. Provide full written data required to evaluate changes.
   2. Maintain detailed records of any work authorized to be done on a time-and-material account basis.
   3. Provide full documentation for Owner on request.

B. Designate in writing the member(s) of Contractor's organization.
   1. Who is authorized to accept changes in the Work.
   2. Who is responsible for informing others in the Contractor's employ of the authorization of changes in the work.

C. Only the Owner's Facilities Management Division or its designated representative can authorize changes to contract.

D. Only fully documented, written and approved change orders will be processed for payment; any work performed without this approval process will be at the Contractor's expense.

1.02 RELATED REQUIREMENTS

A. Agreement: The amount of established unit prices.
B. Conditions of the Contract:
   1. Methods of determining cost or credit to Owner resulting from changes in Work.
   2. Contractor's claims for additional costs.

C. Section 01152 - Applications for Payment
D. Section 01300 - Submittals
E. Section 01600 - Materials and Equipment
F. Section 01700 - Contract Closeout

1.03 DEFINITIONS

A. Change Order: Any change to the original contract agreement.
B. Construction Change Authorization, AIA Document G713: A written order to the Contractor, signed by Owner, which amends the Contract Documents as described, and authorized contractor to proceed with a change which affect the Contract Sum or the Contract Time, for inclusion in a subsequent Change Order.

1.04 PRELIMINARY PROCEDURES

A. College may initiate changes by submitting a Proposal Request to Contractor. Request will include:
   1. Detailed Description of the Change, Products, and location of the change in the Project.
   2. Supplementary or revised Drawings and specifications.
   3. The projected time span for making the change and a specific statement as to whether overtime work is, or is not authorized.
4. A specific period of time during which the requested price will be considered valid.
5. Such request is for information only, and is not an instruction to execute the changes, nor to stop work in progress.

B. Contractor may initiate changes by submitting a written notice to Owner, containing:
   1. Description of the proposed changes.
   2. Statement of the reason for making the changes.
   4. Statement of the effect on the work of separate contractors.
   5. Documentation supporting any change in Contract Sum or Contract Time, as appropriate.

1.05 CONSTRUCTION CHANGE AUTHORIZATION
A. College may issue a construction change authorization for Contractor to proceed with a change for subsequent inclusion in a Change Order.
B. Authorization will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the Change, and will designate the method of determining any change in the Contract Sum and any change in Contract Time.
C. Owner will sign and date the Construction Change Authorization as authorization for the Contractor to proceed with the changes.
D. Contractor may sign and date the Construction Change Authorization to indicate agreement with the terms therein.

1.06 DOCUMENTATION OF PROPOSAL AND CLAIMS
A. Support each quotation for a lump sum proposal and for each unit price which has not previously been established, with sufficient substantiating data to allow Owner to evaluate the quotation.
B. On request provide additional data to support time and cost computations:
   1. Labor required
   2. Equipment required
   3. Products required
      a. Recommended source of purchase and unit cost
      b. Quantities required
   4. Taxes, insurance and bonds
   5. Credit for work deleted from Contract, similarly documented
   6. Overhead and profit
   7. Justification for any change in Contract Time
C. Document request for substitutions for Products as specified in Section 01600 - Material and Equipment.
1.07 PREPARATION OF CHANGE ORDERS
A. Owner will prepare each change order.
C. Change Order will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change.
D. Change Order will provide an accounting of the adjustment in the Contract Sum and in the Contract Time.

1.08 LUMP SUM/FIXED PRICE CHANGE ORDER
A. Content of Change Orders will be based on, either:
   1. College's Proposal Request and Contractor's responsive Proposal as mutually agreed between Owner and Contractor.
   2. Contractor's Proposal for a change, as recommended by College.
B. Owner will sign and date the Change Order as authorization for the Contractor to proceed with the Changes.
C. Contractor may sign and date the Change Order to indicate agreement with the terms therein.
D. Markups on Change Order requests shall not exceed fifteen (15) percent. This applies to overhead and profit, labor, materials, equipment, etc.

1.09 CORRELATION WITH CONTRACTOR'S SUBMITTALS
A. Periodically revise Schedule of Values and Request for Payment forms to record each change as a separate item of work, and to record the adjusted Contract Sum.
B. Periodically revise the Construction Schedule to reflect each change in Contract Time.
   1. Revise subschedules to show changes for other items of work affected by the changes.
C. Upon completion of work under a Change Order, enter pertinent changes in Record Documents.

PART 2 PRODUCTS
Not Used

PART 3 EXECUTION
Not Used

END OF SECTION
PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED
A. College shall schedule and administer preconstruction meeting, periodic progress meetings and specially called meetings throughout progress of the work.
   1. Prepare agenda for meetings.
   2. Distribute written notice of each meeting.
   3. Preside at meetings.
   4. Record the Minutes: Include significant proceedings and decisions.
   5. Reproduce and distribute copies of minutes after each meeting.
      a. To participants in the meeting.
      b. To parties affected by decisions made at the meeting.
B. Representatives of contractors, subcontractors and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.

1.02 RELATED REQUIREMENTS
A. Instructions to Bidders
B. Section 01300 - Submittals
C. Section 01720 - Project Record Documents

1.03 PRECONSTRUCTION MEETING
A. Schedule within fifteen (15) days after date of Notice to Proceed.
B. Location: Project site.
C. Attendance:
   1. Campus Representative
   2. Professional Consultants
   3. Contractor’s Superintendents (Contractor)
   4. Major Subcontractors as Appropriate
   5. Others as appropriate
D. Addendum:
   1. Distribution and discussion of:
      a. List of major subcontractors and suppliers.
      b. Projected Construction schedules.
   2. Critical work sequencing.
   3. Major equipment deliveries and priorities.
   4. Project Coordination
      a. Designation of responsible personnel.
   5. Procedures and processing of:
      a. Field Decisions
      b. Proposal Requests
      c. Submittals
      d. Change Orders
      e. Applications for Payment
6. Distribution of Contract Documents
7. Procedures for Maintaining Record Documents
8. Use of premises:
   a. Work and Storage Areas
   b. Owner's Requirements
9. Construction Facilities, Controls and Construction Aids
10. Temporary Utilities
11. Safety and First-aid Procedures
12. Security Procedures
13. Housekeeping Procedures

1.04 PROGRESS MEETINGS
A. Schedule regular periodic meetings, as required.
B. Hold called meetings as required by progress of the work.
C. Location of the meetings: Project field office of Contractor.

PART 2 PRODUCTS
Not Used

PART 3 EXECUTION
Not Used

END OF SECTION
PART 1  GENERAL

1.01 REQUIREMENTS INCLUDED
A. Procedures
B. Construction Progress Schedules
C. Schedule of Values
D. Shop Drawings
E. Product Data
F. Samples
G. Manufacturer's Certificates

1.02 RELATED REQUIREMENTS
A. Section 01010 - Summary of Project
B. Section 01152 - Applications for Payment: Submittal of Applications
C. Section 01600 - Material and Equipment: Manufacturers' Instructions
   Substitutions and Product Options: Contractor's List of Products
D. Section 01700 - Contract Closeout: Closeout Submittals

1.03 PROCEDURES
A. Deliver submittals to College at address listed on cover of Project Manual.
B. Transmit each item under AIA Form 810. Identify project, contractor, subcontractor, major supplier; identify pertinent Drawing sheet and detail number, and Specification section number, as appropriate. Identify deviations from Contract Documents. Provide space for Contractor and Architect review stamps.
C. Submit initial progress schedules, schedule of values, shop Drawings and product data as required within fifteen (15) days after award of contract. After review by College, revise and resubmit as required. Submit revised schedules with each Application for Payment reflecting changes since previous submittal.
D. Comply with progress schedule for submittals related to Work progress. Coordinate submittal of related items.
E. After College review of submittal, revise and resubmit as required, identifying changes made since previous submittal.
F. Distribute copies of reviewed submittals to concerned persons. Instruct recipients to promptly report any inability to comply with provisions.
1.04    CONSTRUCTION PROGRESS SCHEDULE
A. Submit horizontal bar chart with separate bar for each major trade or operation, identifying first work day of each week.
B. Show complete sequence of construction by activity, identifying work of separate stages and other logically grouped activities. Show projected percentage of completion for each item of Work as of time of each progress Application for Payment.
C. Show submittal dates required for Shop Drawings, Product Data, and Samples and Product delivery dates.
D. Submit progress schedule in duplicate.

1.05    SCHEDULE OF VALUES
A. Submit typed schedule of AIA Form G703.
B. Format: Table of Contents of the Project Manual. Identify each line item with number and title of the major Specification sections.
C. Include in each line item a directly proportional amount of Contractor's overhead and profit.
D. Provide a subschedule for each separate stage of Work.
E. Revise schedule to list change orders, for each application for payment.
F. The Schedule of Values must be provided to and accepted by the Owner prior to any approval of payment.

1.06    SHOP DRAWINGS
A. Submit the number of opaque reproductions which Contractor requires, plus three copies which will be retained by College.

1.07    PRODUCT DATA
A. Mark each copy to identify applicable Products, models, options and other data; supplement manufacturers' standard data to provide information unique to the Work. Include manufacturers' installation instructions when required by the Specification section.
B. Submit the number of copies which Contractor requires, plus three copies which will be retained by College.

1.08    SAMPLES
A. Submit full range of manufacturers' standard colors, textures and patterns for selection. Submit samples for selection of finishes within fifteen (15) days after date of Contract.
B. Submit Samples to illustrate functional characteristics of the Product, with integral parts and attachment devices. Coordinate submittal of different categories for interfacing work.
C. Include identification on each sample, giving full information.
D. Submit three (3); two (2) will be retained by the College.
1.09 MANUFACTURERS' CERTIFICATES
A. Submit certificates, in duplicate.

1.10 MBE & WBE UTILIZATION
A. Submit monthly MBE and WBE reports for Contractor.
B. These are to be submitted monthly with the Contractor’s Request for Payment to the Project Manager.

1.11 EEO
A. Submit monthly reports as required showing number of employees of Contractor and subcontractors.
B. These are to be submitted monthly with the Contractor’s Request for Payment to the Project Manager.

1.12 CERTIFIED PAYROLLS
A. Contractors, subcontractors and all lower tier subcontractors shall submit to the Project Manager weekly certified payrolls

PART 2 PRODUCTS
Not Used

PART 3 EXECUTION
Not Used

END OF SECTION
QUALITY CONTROL

PART 1  GENERAL

1.01  REQUIREMENTS INCLUDED
A.  General Quality Control
B.  Testing Laboratory Services

1.02  RELATED REQUIREMENTS
A.  Section 01010 - Summary of Work
B.  Section 01300 - Submittals: Submittal of Manufacturer's Instruction
C.  Section 03001 - Concrete: Tests required for concrete

1.03  QUALITY CONTROL, GENERAL
A.  Maintain quality control over suppliers, manufacturers, products, services, site conditions and workmanship to produce work of specified quality.

1.04  WORKMANSHIP
A.  Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
B.  Work to be performed by persons qualified to produce workmanship of specified quality.
C.  Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration and racking.

1.05  MANUFACTURERS' INSTRUCTIONS
A.  Comply with instructions in full detail, including each step in sequence. Should instructions conflict with Contract Documents, request clarification from Architect proceeding.

1.06  MANUFACTURERS' CERTIFICATES
A.  When required by individual Specifications Section, submit manufacturers' certificate, in duplicate, that products meet or exceed specified requirements.

1.07  MANUFACTURERS' FIELD SERVICES
A.  When specified in respective Specification Section, provide qualified personnel to observe field conditions, conditions of surfaces and installation, quality of workmanship and to make appropriate recommendations.
B.  Representative shall submit written report to Owner listing observations and recommendations.
1.08 TESTING LABORATORY SERVICES

A. The Contractor shall employ and pay for services of an Independent Testing Laboratory to perform inspections, tests and other services required by individual Specification Sections, of his portion of the work.

B. Services will be performed in accordance with requirements of governing authorities and with specified standards.

C. Reports will be submitted to Owner in duplicate giving observations and results of test, indicating compliance or noncompliance with specified standards and with Contract documents.

D. Contractor shall cooperate with Testing Laboratory personnel; furnish tools, samples of materials, design mix, equipment, storage and assistance as requested.

1. Notify Architect and Testing laboratory twenty-four (24) hours prior to expected time for operations requiring testing services.

2. Make arrangements with Testing Laboratory and pay for additional samples and tests for contractor's convenience.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION
CONSTRUCTION FACILITIES & TEMPORARY CONTROLS

SECTION 01500

CONSTRUCTION FACILITIES & TEMPORARY CONTROLS

PART 1   GENERAL

1.01   REQUIREMENTS INCLUDED
A.   Electricity, Lighting
B.   Telephone Service
C.   Water
D.   Sanitary Facilities
E.   Construction Aids
F.   Enclosures
G.   Barriers
H.   Cleaning During Construction

1.02   RELATED REQUIREMENTS
A.   Section 01010 - Summary of Project: Work sequence and Contractor use of premises.
B.   Section 01700 - Contract Closeout: Final Cleaning

1.03   ELECTRICITY, LIGHTING
A.   Connect to existing service, provide branch wiring and distribution system located to allow service and lighting by means of construction-type power cords. Owner will pay costs for energy used.
B.   Provide lighting for construction operations.
C.   Existing and permanent lighting may be used during construction. Maintain lighting and make routine repairs.

1.04   TELEPHONE SERVICE
A.   Use of existing service will not be permitted.

1.05   WATER
A.   Connect to existing facilities; extend branch piping with outlets located so that water is available by use of hoses. Owner will pay for water used.

1.06   SANITARY FACILITIES
A.   Designated existing facilities may be used during construction operations; maintain in sanitary condition.

1.07   CONSTRUCTION AIDS
A.   Designated existing stairs may be used by construction personnel. Coordinate use with Owner.
1.08 ENCLOSURES (EXTERIOR AND INTERIOR)
A. Provide temporary insulated weather-tight closures of openings in exterior surfaces to provide acceptable working conditions and protection for materials, to allow for temporary heating, and to prevent entry of unauthorized persons. Provide doors with self-closing hardware and locks.
B. Provide temporary partitions and closures as required to separate work areas from Owner occupied areas to prevent penetration of dust and moisture into Owner occupied areas and to prevent damage to existing areas and equipment. Construction: Framing and sheet material with closed joints and sealed edges at intersections with existing surfaces; STC rating 35 in accordance with ASTM E90 Flame Spread Rating of 25 in accordance with ASTM E84.

1.09 BARRIERS
A. Provide as required to prevent public entry to construction areas to provide for Owner's use of site, and to protect existing facilities and adjacent properties from damage from construction operations. Provide additional barriers to prevent pedestrians from walking on grass lawns.

1.10 CLEANING DURING CONSTRUCTION
A. Control accumulation of waste materials and rubbish; periodically dispose of off-site.
B. Clean areas daily and prior to start of finish work, maintain all interior areas free of dust and other contaminants during all construction operations.

1.11 REMOVAL
A. Remove temporary materials, equipment, services and construction barriers prior to Substantial Completion Inspection.
B. Clean and repair damage caused by installation or use of temporary facilities. Restore existing facilities used during construction to specified, or to original condition.

PART 2 PRODUCTS
Not Used

PART 3 EXECUTION
Not Used

END OF SECTION
PART 1   GENERAL

1.01     REQUIREMENTS INCLUDED
   A. Provide a project security program to:
      1. Protect Work, stored products and construction equipment from
         theft and vandalism.
      2. Protect project premises from entry by unauthorized persons.
   B. Protect Owner's operations at site from theft, vandalism or damage
      from Contractor's work or employees.
   C. The contractors shall comply with all security regulations of the
      College and such regulations and/or directives issued by the College
      shall be absolute.
   D. The contractors shall not cause the security of the College's
      buildings, occupants and contents thereof to be jeopardized in any way
      and shall be responsible for any losses incurred because of such
      actions.
   E. The contractor shall secure his tools and equipment in a location
      mutually agreeable to himself and the College. The College shall not
      be responsible for its security.

1.02     RELATED REQUIREMENTS
   A. Section 01200 - Project Meetings
   B. Section 01600 - Storage and Protection of Products

PART 2   PRODUCTS

Not Used

PART 3   EXECUTION

Not Used

END OF SECTION
PART 1  GENERAL

1.01  REQUIREMENTS INCLUDED
   A.  Provide, operate, maintain equipment, services and personnel, as required to expedite vehicular traffic flow and traffic control at site entrances and parking areas.
   B.  Remove temporary equipment and facilities when no longer required, restore grounds to original or to specified conditions.

1.02  RELATED REQUIREMENTS
   A.  Section 01041 - Project Coordination
   B.  Section 01500 - Construction Facilities & Temporary Controls
   C.  Section 01580 - Project Identification & Signs

1.03  TRAFFIC SIGNALS AND SIGNS
   A.  Provide and operate traffic control and directional signals required to direct and maintain an orderly flow of pedestrian and vehicular traffic in all areas under Contractor's control, or affected by Contractor's operations.
   B.  Provide traffic control and directional signs, mounted on barricades or standard posts:
       1.  At each road and sidewalk intersection.
       2.  At parking areas.

1.04  FLAGMEN
   A.  Provide qualified and suitably equipped flagmen when construction operations encroach on traffic lanes.

1.05  FLARES AND LIGHTS
   A.  Provide flares and lights during periods of low visibility:
       1.  To clearly delineate traffic lanes and to guide traffic.
       2.  For use by flagmen in directing traffic.
   B.  Provide illumination of critical traffic and walk areas.

1.06  CONSTRUCTION PARKING CONTROL
   A.  Control vehicular parking to preclude interference with public traffic or parking, access by emergency vehicles, College operations, construction operations and neighborhood use.
   B.  Monitor parking or construction personnel's private vehicles:
       1.  Maintain free vehicular access to and through parking areas.
       2.  Prohibit parking in nondesignated areas.
1.07 Haul Routes
   A. Consult with governing authorities, establish thoroughfares which will be used as haul routes.
   B. Provide traffic control at critical areas of haul routes to expedite traffic flow, to minimize interference with normal public traffic.

Part 2 Products
Not Used

Part 3 Execution
Not Used

End of Section
PART 1  GENERAL

1.01  REQUIREMENTS INCLUDED
A. The Contractor is to furnish, install and maintain temporary field offices during entire construction period to house his construction operations staff.
B. Furnish, install and maintain storage and work sheds needed for construction.

1.02  RELATED REQUIREMENTS
A. General Conditions
B. Section 01010 - Summary of Work
C. Section 01500 - Construction Facilities & Temporary Controls
D. Section 01570 - Traffic Regulation
E. Section 01580 - Project Identification & Signs
F. Section 01600 - Materials & Equipment

1.03  OTHER REQUIREMENTS
A. Prior to installation of offices and sheds, consult with College on location, access and related facilities.

1.04  REQUIREMENTS FOR FACILITIES
A. Construction:
   1. Structurally sound, weathertight, with floors raised above ground.
   2. Temperature transmission resistance: Compatible with occupancy and storage requirements.
   3. At Contractor's option, portable or mobile buildings may be used.
      a. Mobile homes, when used, shall be modified for office use.
      Space within existing structure may be used.
B. Contractor's Office and Facilities:
   1. Size: As required for general use and to provide space for project meetings.
C. Storage Sheds:
   1. To requirements of various trades.
   2. Dimensions: Adequate for storage and handling of products.
   3. Ventilation: Comply with specified and code requirements for products stored.
   4. Heating: Adequate to maintain temperatures specified in respective sections for the products stored.
PART 2 PRODUCTS

2.01 MATERIALS, EQUIPMENT & FURNISHINGS
A. May be new or used, but must be serviceable, adequate for required purpose, and must not violate applicable codes or regulations.

PART 3 EXECUTION

3.01 INSTALLATION
A. Construct temporary field offices and storage sheds on proper foundations, provide connections for utility services.
   1. Secure portable or mobile buildings when used.
   2. Provide steps and landings at entrance doors.
B. Mount thermometer at convenient outside location, not in direct sunlight.

3.02 MAINTENANCE AND CLEANING
A. Provide periodic maintenance and cleaning for temporary structures, furnishings, equipment and services.

3.03 REMOVAL
A. Remove temporary field offices, contents and services at a times no longer needed.
B. Remove storage sheds when no longer needed.
C. Remove foundations and debris; grade site to required elevations and clean the areas.
D. Regrade and reseed grass areas.

END OF SECTION
MATERIAL AND EQUIPMENT

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED
A. Products
B. Workmanship
C. Manufacturers' Instructions
D. Transportation and Handling
E. Storage and Protection
F. Substitutions and Product Options

1.02 RELATED REQUIREMENTS
A. Section 01010 - Summary of Project
B. Section 01300 - Submittals: Submittal of Manufacturers' Certificates
C. Section 01700 - Contract Closeout: Operation and Maintenance Data & Warranties and Bonds.

1.03 PRODUCTS
A. Products include material, equipment and systems.
B. Comply with Specifications and referenced standards as minimum requirements.
C. Components required to be supplied in quantity within a Specification section shall be the same and shall be interchangeable.
D. Do not use materials and equipment removed from existing structure, except as specifically required or allowed by Contract Documents.

1.04 WORKMANSHIP
A. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
B. Work to be performed work by persons qualified to produce workmanship of specified quality.
C. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration and racking.

1.05 MANUFACTURERS' INSTRUCTIONS
A. When work is specified to comply with manufacturers' instruction, submit copies as specified in Section 01300, distribute copies to persons involved and maintain one set in field office.
B. Perform work in accordance with details of instruction and specified requirements. Should a conflict exist between Specifications and instructions, consult with Owner.
1.06 TRANSPORTATION AND HANDLING
A. Transport Products by methods to avoid Product damage; deliver in undamaged condition in manufacturer’s unopened containers or packaging.
B. Provide equipment and personnel to handle Products by methods to prevent soiling or damage.
C. Promptly inspect shipments to assure that Products comply with requirements, quantities are correct and Products are undamaged.

1.07 STORAGE AND PROTECTION
A. Store Products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive Products in weather-tight enclosures; maintain within temperature and humidity ranges required by manufacturers' instructions.
B. For exterior storage or fabricated Products, place on sloped supports above ground. Cover Products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation.
C. Store loose granular materials on solid surfaces in a well-drained area; prevent mixing with foreign matter.
D. Arrange storage to provide access for inspection. Periodically inspect to assure products are undamaged, and are maintained under required conditions.
E. After installation, the Contractor shall provide coverings to protect all installed products from damage due to traffic and construction operations, remove when no longer needed. ALL damaged products shall be replaced at no cost to the College.

1.08 PRODUCT OPTIONS
A. Within fifteen (15) days after date of Contract, submit complete list of major Products proposed, with name of manufacturer, trade name and model.
B. Options:
   1. Products specified only by reference standard: Any Product meeting that standard.
   2. Products specified by naming several manufacturers: Products of any named manufacturer meeting Specifications.
   3. Products specified by naming one or more manufacturers and "or equal": Submit a request for substitution for any manufacturer not specifically named.
   4. Products specified by naming only one manufacturer: No Option.

1.09 SUBSTITUTIONS
A. Only within fifteen (15) days after date of Contract will Owner consider requests from Contractor for substitutions. Subsequently, substitutions will be considered only when a Product becomes unavailable due to no fault of Contractor.
B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
C. Request constitutes a representation that Contractor:
   1. Has investigated proposed Product and determined that it meets or exceeds in all respects, specified Product.
   2. Will provide the same warranty for substitution as for specified Product.
   3. Will coordinate installation and make other changes which may be required for Work to be complete in all respects.
   4. Waives claims for additional costs which may subsequently become apparent.

D. Substitutions will not be considered when they are indicated or implied on Shop Drawing or Product Data submittals without separate written request, or when acceptance will require substantial revision of Contract Documents.

E. Owner will determine acceptability of proposed substitution, and will notify Contractor of acceptance or rejection in writing within a reasonable time.

PART 2 PRODUCTS

2.01 PENNSYLVANIA STEEL PRODUCTS PROCUREMENT ACT

A. Contractor acknowledges that CCAC is a public agency subject to the requirements of the Pennsylvania Steel Products Procurement Act, 73 P.S. Section 1881 et. Seq (the “SPPA”). Contractor therefore represents and warrants that any and all steel products purchased, used or supplied by it in the performance of the Contract will be melted and manufactured in the United States, and that its performance hereunder will otherwise comply with requirements of the SPPA at all times. Contractor further agrees to provide CCAC with documentation and/or certification of its compliance with the foregoing requirements, as required under the SPPA, and acknowledges that it shall not be entitled to receive payment hereunder until such documentation and/or certification has been provided.

PART 3 EXECUTION

Not Used

END OF SECTION
PART 1   GENERAL

1.01 REQUIREMENTS INCLUDED
   A. Closeout Procedures
   B. Final Cleaning
   C. Project Record Documents
   D. Operation and Maintenance Data
   E. Systems Demonstration
   F. Warranties and Bonds

1.02 RELATED REQUIREMENTS
   A. Conditions of the Contract: Fiscal provisions, legal submittals and other administrative requirements.
   B. Section 01010 - Summary of Project
   C. Section 01500 - Construction Facilities & Temporary Controls: Cleaning during construction.

1.03 CLOSEOUT PROCEDURES
   A. Comply with procedures stated in General Conditions of the Contract for issuance of Certificate of Substantial Completion.
   B. Owner will occupy designated portion of Project for the purpose of conducting of business under provision stated in Certificate of Substantial Completion.
   C. When Contractor considers Work has reached final completion, submit written certification that Contract Documents have been reviewed, work has been inspected and that work is completed in accordance with Contract Documents and ready for Owner inspection.
   D. In addition to submittals required by the conditions of the Contract, provide submittals required by governing authorities, and submit a final statement of accounting giving total adjusted Contract Sum, previous payments and sum remaining due.

1.04 FINAL CLEANING
   A. Execute prior to final inspection.
   B. Clean all exterior surfaces, remove stains and foreign substances. Clean drainage systems.
   C. Clean site; sweep paved areas, rake clean other surfaces and remove all rubbish.
   D. Remove waste and surplus materials, rubbish and construction Facilities from the Project and from the site.
   E. Backfill adjacent area with topsoil and seed disturbed areas for grass as required.
1.05 PROJECT RECORD DOCUMENTS
A. Store documents separate from those used for construction.
B. Keep documents current; do not permanently conceal any work until required information has been recorded.
C. At Contract Closeout, submit documents with transmittal letter containing date, project title, Contractor's name and address, list of documents and signature of Contractor.

1.06 OPERATION AND MAINTENANCE DATA (refer to Section 01730 for details)
A. Provide data for all material and equipment used or installed.
B. Submit two (2) sets of O&M manuals to Project Manager within thirty (30) days of award of Contract. Upon completion of Contract work, submit three (3) additional sets of O&M manuals to Owner prior to final inspection which includes names, addresses and telephone numbers of subcontractor and suppliers. List:
   1. Appropriate design criteria
   2. List of equipment
   3. Parts list
   4. Operation instructions
   5. Maintenance instructions for equipment
   6. Maintenance instructions for finishes
   7. Shop drawings and product data
   8. Warranties

1.07 WARRANTIES AND BONDS
A. Provide triplicate notarized copies. Execute Contractor's submittals and assemble documents executed by subcontractors, suppliers and manufacturers. Provide table of contents and assemble in binder with durable plastic cover.
B. Submit material prior to final application for payment. For items of Work delayed materially beyond Date of Substantial Completion, provide updated submittal within ten (10) days after acceptance, listing date of acceptance as start of warranty period.

PART 2 PRODUCTS
Not Used

PART 3 EXECUTION
Not Used

END OF SECTION
PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED
   A. Execute cleaning, during progress of the Work and at completion of the Work.

1.02 RELATED REQUIREMENTS
   A. Conditions of the Contract
   B. Each Specification Section: Cleaning for specific Products of work.
   C. Section 01010 - Summary of Project.

1.03 DISPOSAL REQUIREMENTS
   A. Conduct cleaning and disposal operations to comply with codes, ordinances, regulations and antipollution laws.

PART 2 PRODUCTS

2.01 MATERIALS
   A. Use only those cleaning materials which will not create hazards to health or property and which will not damage surfaces.
   B. Use only those cleaning materials and methods recommended by manufacturer for the surface material to be cleaned.
   C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 EXECUTION

3.01 DURING CONSTRUCTION
   A. Execute cleaning to keep the Work, the site and adjacent properties free from accumulations of waste materials, rubbish and windblown debris, resulting from construction operations.
   B. Provide on-site containers for the collection of waste materials, debris and rubbish.
   C. Remove waste materials, debris and rubbish from the site and dispose of at legal disposal areas away from the site.

3.02 FINAL CLEANING
   A. Contractor: Broom clean all surfaces.

END OF SECTION
PART 1  GENERAL

1.01  REQUIREMENTS INCLUDED
   A. The Contractor shall maintain at the site for the Owner one record copy of:
      1. Drawings
      2. Specifications
      3. Addenda
      4. Change Orders and other Modifications to the Contract
      5. Approved Shop Drawings, Product Data and Samples

   1.02  RELATED REQUIREMENTS
       A. Section 01300 - Submittals
       B. Section 01740 - Warranties and Bonds

   1.03  MAINTENANCE OF DOCUMENTS AND SAMPLES
       A. Store documents and samples in locked cabinet and secure storage space apart from documents used for construction.
       B. File documents and samples in accordance with CSI 16 Division format.
       C. Maintain documents in a clean, dry, legible condition and in good order. Do not use record documents for construction purposes.
       D. Make documents and samples available at all times for inspection by Owner.

   1.04  RECORDING
       A. Label each document "Project Record" in neat large printed letters.
       B. Record information concurrently with construction progress.
          1. Do not conceal any work until required information is recorded.
       C. Drawings, legibly make to record actual construction:
          1. Depths of various elements of foundation in relation to finish first floor datum.
          2. Horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
          3. Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.
          4. Field changes of dimension and detail.
          5. Changes made by Field Order or by Change Order.
          6. Details not on original contract Drawings.
       D. Specifications and Agenda: Legibly mark each Section to record:
          1. Manufacturer, trade name, catalog number, and Supplier of each Product and item of equipment actually installed.
          2. Changes made by Field Order or by Change Order.
1.05 SUBMITTALS
A. At contract close-out, deliver Record Documents to the Owner.
B. Accompany submittals with transmittal letter in duplicate, containing:
   1. Date
   2. Project title and number
   3. Contractor's name and address
   4. Title and number of each Record Document
   5. Signature of contractor of his authorized representative.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION
WARRANTIES AND BONDS

PART 1  GENERAL

1.01  REQUIREMENTS INCLUDED
A. Compile warranties and bonds.
B. Review submittals and verify compliance with Contract Documents.

1.02  RELATED REQUIREMENTS
A. Project Contract Articles
B. Conditions of the Contract
C. Section 01700 - Contract Closeout

1.03  SUBMITTAL REQUIREMENTS
A. Contractor shall assemble warranties, bonds and service and maintenance contracts, executed by each manufacturers, suppliers and subcontractors.
B. Number of original signed copies required: Three (3) each.
C. Table of Contents: Neatly typed, in orderly sequence. Provide complete information for each item:
   1. Product or work item
   2. Firm, with name of principle, address and telephone number
   3. Scope
   4. Date of beginning of warranty, bond or service and maintenance contract and expiration date
   5. Duration of warranty, bond or service maintenance contract shall not be less than one year from date of Owner's acceptance.
   6. Provide information for Owner's personnel:
      a. Proper procedure in case of failure
      b. Instances which might affect the validity of warranty or bond.
   7. Contractor, name of responsible principle, address and telephone number.

1.04  FORM OF SUBMITTALS
A. Prepare three (3) copies in the form of an instructional manual for use by Owner’s personnel.
B. Format:
   1. Size 8-1/2" x 11", punch sheets for standard three-ring binder.
      a. Fold larger sheets to fit into binders.
   2. Cover: Identify each packet with types or printed title "Warranties and Bonds". List:
      a. Project Number and Project Name
      b. Name of Contractor
C. Binders: Commercial quality, three-ring, with durable and cleanable plastic covers.
D. Copy contents of each complete manual on a disk or flashdrive.

Project #16-AC-001
1.05 TIME OF SUBMITTALS

A. For equipment or component parts of equipment put in to service during progress of construction:
   1. Submit documents within ten (10) days after inspection and acceptance.

B. Otherwise make submittals within ten (10) days after Date of Substantial completion, prior to final request for payment.

C. For items of work, where acceptance is delayed materially beyond Date of Substantial Completion, provide updated submittals within ten (10) days after acceptance, listing date of acceptance as start of warranty period.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION
CCAC Project 16-AC-001
January 20, 2017

REPAIR MAIN ENTRANCE
JONES HALL
808 Ridge Avenue, Pittsburgh PA 15212

Community College of Allegheny County
Allegheny Campus

RMP Project 15052
REPAIR MAIN ENTRANCE – JONES HALL
CCAC Allegheny Campus
CCAC Project 16-AC-001
RMP Project 15052

DOCUMENT 00 01 01 - PROJECT TITLE PAGE

PROJECT: Repair Main Entrance – Jones Hall
CCAC Project 16-AC-001

LOCATION: 808 Ridge Avenue
Pittsburgh PA 15212

OWNER: Community College of Allegheny County
Facilities Management
800 Allegheny Avenue
Pittsburgh PA 15233
Contact: Ray Marks
412-237-3072
rmarks@ccac.edu

ARCHITECT: Radelet McCarthy Polletta Incorporated
300 First & Market Building
100 First Avenue
Pittsburgh PA 15222
Contact: Julie Polletta
412-471-4445
jpolletta@radeletmccarthy.com

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**END OF DOCUMENT 00 01 10**
The following Drawings, dated January 20, 2017 unless otherwise indicated, are issued as part of the Contract Documents and are incorporated into this Project Manual in 11x17 format.

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<tr>
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END OF DOCUMENT 00 01 15
PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Work covered by the Contract Documents.
2. Work schedule and phases.
3. Work under other contracts.
4. Use of premises.
5. Owner's occupancy requirements.

B. See Owner's General Requirements and other Contracting Documents.

C. See Division 00 Document “Project Title Page” for contact information of representatives for Owner and Architect.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification: Repair Main Entrance – Jones Hall

1. Project Location: 808 Ridge Avenue, Pittsburgh PA 15212

B. Owner: Community College of Allegheny County.

C. Architect: Radelet McCarthy Polletta Incorporated.

D. The Work consists of the following:

1. The Work includes replacement of existing stone steps and sidewalk as the Base Bid, with Alternate scopes or work as described is Division 01 Section “Alternates”.

E. Project will be constructed under a single prime contract.

F. The project site is located within the Allegheny West Historic District. The Owner has obtained a Certificate of Appropriateness for this project.
1.3 WORK SCHEDULE AND PHASES

A. Work schedule for access to premises and on-site work will be as stipulated by Owner in coordination with the academic calendar. Note the following milestones:

2. Substantial Completion: No later than Friday, August 11, 2017.
3. Final Completion and De-mobilization: No later than Tuesday, August 15, 2017.

B. Inaccessibility of Front Entrance: The front door is a required exit for Jones Hall. Schedule on-site work in order to minimize the duration of time that the front entrance will be inaccessible to Owner’s personnel, students, and the public. Coordinate with Owner so that building occupancy will be minimized. Review temporary site conditions with authorities having jurisdiction.

C. The Work shall be conducted in one phase with multiple sequences as determined in coordination with Owner and Architect.

D. Before commencing Work, submit a schedule showing the sequence, commencement and completion dates, and move-out and -in dates of Owner’s personnel for all phases of the Work.

1.4 WORK UNDER OTHER CONTRACTS

A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract. Coordinate the Work of this Contract with work performed under separate contracts.

B. Preceding Work: None anticipated.

C. Concurrent Work: None anticipated.

D. Future Work: None anticipated.

1.5 USE OF PREMISES

A. General: Contractor shall have limited use of premises for construction operations as indicated on Drawings by the Contract limits.

B. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Owner Occupancy: Allow for Owner occupancy of Project site and use by the public.
2. Driveways and Entrances: Keep driveways and entrances (except for project area) serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
   a. Schedule deliveries to minimize use of driveways and entrances.
   b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

C. Use of Existing Building: Maintain existing building in a weathertight condition throughout construction period. Repair damage caused by construction operations. Protect building and its occupants during construction period.

1.6 OWNER'S OCCUPANCY REQUIREMENTS

A. Full Owner Occupancy: Owner will occupy site and building during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day 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.

1.7 WORK RESTRICTIONS

A. Nonsmoking Building: Smoking is not permitted within the building or within 8 m (25 feet) of entrances, operable windows, or outdoor air intakes.

1.8 SPECIFICATION FORMATS AND CONVENTIONS

A. Specification Format: The Specifications are organized into Divisions and Sections using the CSI/CSC's "MasterFormat 2004" numbering system.

1. Division 01: Sections in Division 01 govern the execution of the Work of all Sections in the Specifications.

B. 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. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words
shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.

2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.

   a. 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.
SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for unit prices.

1.2 DEFINITIONS

A. Unit price is an amount proposed by bidders, stated on the Bid Form, as a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if estimated quantities of Work required by the Contract Documents are increased or decreased.

1.3 PROCEDURES

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

B. Measurement and Payment: Refer to individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.

C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.

D. List of Unit Prices: A list of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)
PART 3 - EXECUTION

3.1 LIST OF UNIT PRICES

A. Unit Price #1 - Sidewalk:
   1. Description: Remove existing sidewalk and provide new concrete sidewalk according to Division 32 Section “Concrete Paving” and as indicated on Drawings.
   2. Unit of Measurement: Square feet.

B. Unit Price #2 - Replace Stone Veneer (Cheek Walls):
   1. Description: Remove existing damaged stone and replace in kind according Division 4 Sections.
   2. Unit of Measurement: Square feet.

C. Unit Price #3 - Replace Stone Block (Curbs):
   1. Description: Remove existing damaged stone block and replace in kind according to Division 4 Sections.
   2. Unit of Measurement: Lineal feet of existing stone block depth.

D. Unit Price #4 - Patch Stone (General):
   1. Description: Patch existing damaged stone block and replace in kind according to Division 4 Sections.
   2. Unit of Measurement: Square feet.

END OF SECTION 01 22 00
SECTION 01 23 00 - ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY
   A. This Section includes administrative and procedural requirements for alternates.

1.2 DEFINITIONS
   A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

   1. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.3 PROCEDURES
   A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

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

   B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.

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

   D. Schedule: A Schedule of Alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.
PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Alternate #1 – Cheek Walls and Light Fixtures
   1. Repoint, repair, and clean existing cheek walls.
   2. Replace existing conduit, wiring, and light fixtures.

B. Alternate #2 – Stone Curbs
   1. Repoint repair, and clean existing curbs.

C. Alternate #3 – Entrance Doors
   1. Abate lead-based paint.
   2. Clean, prime, and paint existing transom.
   3. Replace existing door, frame, and hardware.

D. Alternate #4 – Concrete Stair Base
   1. In lieu of partial reconstruction of anticipated masonry stringer / support walls (Base Bid), provide concrete base for stairs as indicated on Drawings.

END OF SECTION 01 23 00
SECTION 01 26 00 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY
A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.
B. Refer to Owner’s General Requirements and other Contracting Documents.

1.2 MINOR CHANGES IN THE WORK
A. Architect will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions" or similar document.

1.3 PROPOSAL REQUESTS
A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications. Use AIA Document G709 for Proposal Requests.

1. Proposal Requests issued by Architect are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
2. Within 5 days after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
   a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
   b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
   c. Include costs of labor and supervision directly attributable to the change.
   d. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to Architect.
1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.

2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.

3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

4. Include costs of labor and supervision directly attributable to the change.

5. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

6. Comply with requirements in Division 01 Section "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.

1.4 CHANGE ORDER PROCEDURES


1.5 CONSTRUCTION CHANGE DIRECTIVE


1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 26 00
SECTION 01 29 00 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Refer to Owner’s General Requirements and other Contracting Documents.

1.2 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor’s Construction Schedule. Cost-loaded CPM Schedule may serve to satisfy requirements for the Schedule of Values.

1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including Application for Payment forms with Continuation Sheets Submittals Schedule and Contractor’s Construction Schedule.

2. Submit the Schedule of Values to Architect at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.

3. Subschedules: Where the Work is separated into phases requiring separately phased payments, provide subschedules showing values correlated with each phase of payment.

B. Format and Content: Use the 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. Submit draft of AIA Document G703 Continuation Sheets.

3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.

4. Round amounts to nearest whole dollar; total shall equal 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.

6. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

7. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
   a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.

8. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.3 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.

1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

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: Progress payments shall be submitted to Architect monthly. The period covered by each Application for Payment is one month, ending on the last day of the month.


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 of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
F. Transmittal: Submit 3 signed and notarized original copies of each Application for Payment to 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.

G. Waivers of Mechanic’s Lien: With each Application for Payment, submit waivers of mechanic’s lien from every entity who is lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.

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 final or full waivers.
3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
4. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.

H. 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. Schedule of unit prices.
5. Submittals Schedule (preliminary if not final).
6. List of Contractor's staff assignments.
7. List of Contractor's principal consultants.
10. Initial progress report.
12. Certificates of insurance and insurance policies.

I. Application for Payment at Substantial Completion: After issuing 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 Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work, less 10% retainage.
J. Final Payment Application: 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, "Contractor's Affidavit of Payment of Debts and Claims."
6. AIA Document G707, "Consent of Surety to Final Payment."
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.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 29 00
SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. Coordination Drawings.
2. Project meetings.
3. Requests for Interpretation (RFIs).

B. Refer to Owner’s General Requirements and other Contracting Documents.

C. See Division 01 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

1.2 DEFINITIONS

A. RFI: Request from Contractor seeking interpretation or clarification of the Contract Documents.

1.3 COORDINATION

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.
4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's Construction Schedule.
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. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.
9. Project closeout activities.

1.4 SUBMITTALS

A. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.

1. Content: Project-specific information, drawn accurately to scale. Do not base Coordination Drawings on reproductions of the Contract Documents or standard printed data. Include the following information, as applicable:
   
a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
b. Indicate dimensions shown on the Contract Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

2. Sheet Size: At least 215 by 280 mm (8-1/2 by 11 inches) but no larger than 750 by 1000 mm (30 by 40 inches).
3. Number of Copies: Submit three opaque copies of each submittal. Architect will return one copy.
4. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.
1.5 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.

B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.

1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Discuss items of significance that could affect progress, including the following:
   a. Tentative construction schedule.
   b. Phasing.
   c. Critical work sequencing and long-lead items.
   d. Designation of key personnel and their duties.
   e. Procedures for processing field decisions and Change Orders.
   f. Procedures for RFIs.
   g. Procedures for testing and inspecting.
   h. Procedures for processing Applications for Payment.
   i. Distribution of the Contract Documents.
   j. Submittal procedures.
   k. Preparation of Record Documents.
   l. Use of the premises and existing building.
   m. Work restrictions.
   n. Owner's occupancy requirements.
   o. Responsibility for temporary facilities and controls.
   q. Parking availability.
   r. Office, work, and storage areas.
   s. Equipment deliveries and priorities.
   t. First aid.
   u. Security.
   v. Progress cleaning.
REPAIR MAIN ENTRANCE – JONES HALL  
CCAC Allegheny Campus  
CCAC Project 16-AC-001  
RMP Project 15052

w. Working hours.

3. Minutes: Record and distribute meeting minutes.

C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.

2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

   b. Options.
   c. Related RFIs.
   d. Related Change Orders.
   e. Purchases.
   f. Deliveries.
   g. Submittals.
   h. Review of mockups.
   i. Possible conflicts.
   j. Compatibility problems.
   k. Time schedules.
   l. Weather limitations.
   m. Manufacturer's written recommendations.
   n. Warranty requirements.
   o. Compatibility of materials.
   p. Acceptability of substrates.
   q. Temporary facilities and controls.
   r. Space and access limitations.
   s. Regulations of authorities having jurisdiction.
   t. Testing and inspecting requirements.
   u. Installation procedures.
   v. Coordination with other work.
   w. Required performance results.
   x. Protection of adjacent work.
   y. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.

4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.

5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
D. Progress Meetings: Conduct progress meetings at biweekly intervals, unless otherwise determined by Owner, Contractor, and Architect. Coordinate dates of meetings with preparation of payment requests.

1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

   a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

      1) Review schedule for next period.

   b. Review present and future needs of each entity present, including the following:

      1) Interface requirements.
      2) Sequence of operations.
      3) Status of submittals.
      4) Deliveries.
      5) Off-site fabrication.
      6) Access.
      7) Site utilization.
      8) Temporary facilities and controls.
      9) Work hours.
     10) Hazards and risks.
     11) Progress cleaning.
     12) Quality and work standards.
     13) Status of correction of deficient items.
     14) Field observations.
     15) RFIs.
     16) Status of proposal requests.
     17) Pending changes.
     18) Status of Change Orders.
     19) Pending claims and disputes.
     20) Documentation of information for payment requests.

3. Minutes: Record the meeting minutes.
4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
   
   a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

1.6 REQUESTS FOR INTERPRETATION (RFIs)

A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.

   1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
   2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:

   1. Project name.
   2. Date.
   3. Name of Contractor.
   5. RFI number, numbered sequentially.
   6. Specification Section number and title and related paragraphs, as appropriate.
   7. Drawing number and detail references, as appropriate.
   8. Field dimensions and conditions, as appropriate.
   9. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
   10. Contractor's signature.
   11. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.

C. Hard-Copy RFIs: CSI Form 13.2A, or similar format.

   1. Identify each page of attachments with the RFI number and sequential page number.

D. Architect's Action: Architect will review each RFI, determine action required, and return it. Allow five working days for Architect's response for each RFI. RFIs received after 1:00 p.m. will be considered as received the following working day.

   1. The following RFIs will be returned without action:
a. Requests for approval of submittals.
b. Requests for approval of substitutions.
c. Requests for coordination information already indicated in the Contract Documents.
d. Requests for adjustments in the Contract Time or the Contract Sum.
e. Requests for interpretation of Architect's actions on submittals.
f. Incomplete RFIs or RFIs with numerous errors.

2. Architect's action may include a request for additional information, in which case
   Architect's time for response will start again.

3. Architect's action on RFIs that may result in a change to the Contract Time or the
   Contract Sum may be eligible for Contractor to submit Change Proposal according to
   Division 01 Section "Contract Modification Procedures."

   a. If Contractor believes the RFI response warrants change in the Contract Time or
   the Contract Sum, notify Architect in writing within five days of receipt of the RFI
   response.

E. On receipt of Architect's action, update the RFI log and immediately distribute the RFI
response to affected parties. Review response and notify Architect within five days if
Contractor disagrees with response.

F. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number.
Submit log at progress meetings. Use CSI Log Form 13.2B. or similar format. Include the
following:

1. Project name.
2. Name and address of Contractor.
3. Name and address of Architect.
4. RFI number including RFIs that were dropped and not submitted.
5. RFI description.
6. Date the RFI was submitted.
7. Date Architect's response was received.
8. Identification of related Minor Change in the Work, Construction Change Directive, and
   Proposal Request, as appropriate.
9. Identification of related Field Order, Work Change Directive, and Proposal Request, as
   appropriate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 31 00
SECTION 01 32 00 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Contractor's Construction Schedule.
2. Submittals Schedule.
3. Daily construction reports.
4. Field condition reports.

B. See Owner's General Requirements and other Contracting Documents.

C. See Division 01 Section "Payment Procedures" for submitting the Schedule of Values.

1.2 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.

1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
2. Predecessor Activity: An activity that precedes another activity in the network.
3. Successor Activity: An activity that follows another activity in the network.

B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.

C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

D. Float: The measure of leeway in starting and completing an activity.

1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.

E. Fragnet: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.
1.3 SUBMITTALS

A. Submittals Schedule: Submit schedule electronically, PDF format. 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. Name of subcontractor.
5. Description of the Work covered.
6. Scheduled date for Architect’s final release or approval.

B. Preliminary Network Diagram: Submit electronically, PDF format, large enough to show entire network for entire construction period. Show logic ties for activities.

C. Contractor’s Construction Schedule: Submit initial schedule electronically, PDF format, large enough to show entire schedule for entire construction period.

1. Submit an electronic copy of schedule, using software indicated, on CD-R, and labeled to comply with requirements for submittals. Include type of schedule (Initial or Updated) and date on label.

D. CPM Reports: Concurrent with CPM schedule, submit each of the following computer-generated reports electronically, PDF format. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.

1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
3. Total Float Report: List of all activities sorted in ascending order of total float.

E. Field Condition Reports: Submit electronically, PDF format at time of discovery of differing conditions.

1.4 COORDINATION

A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.
B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of prime contracts, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from parties involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

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.

1. Coordinate Submittals Schedule with list of prime contracts, list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.
2. Submit concurrently with the first complete submittal of Contractor's Construction Schedule.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Time Frame: Extend schedule from date established for Notice to Proceed to date of Final Completion.

1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

B. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:

1. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.

2. Submittal Review Time: Include review and resubmittal times indicated in Division 01 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.

3. Startup and Testing Time: Include not less than 2 days for startup and testing.
4. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.

1. Phasing: Arrange list of activities on schedule by phase.
2. Work under More Than One Contract: Include a separate activity for each contract.
3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
4. Work Restrictions: Show the effect of the following items on the schedule:
   a. Coordination with existing construction.
   b. Limitations of continued occupancies.
   c. Uninterruptible services.
   d. Partial occupancy before Substantial Completion.
   e. Use of premises restrictions.
   g. Seasonal variations.
   h. Environmental control.

5. Work Stages: Indicate important stages of construction for each major portion of the Work.

D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion

E. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragnets to demonstrate the effect of the proposed change on the overall project schedule.

2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal Gantt-chart-type, Contractor's Construction Schedule within 10 days of date established for the Notice to Proceed. Base schedule on the Preliminary Construction Schedule and whatever updating and feedback was received since the start of Project.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.

2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.

3. As the Work progresses, indicate Actual Completion percentage for each activity.

B. Distribution: Distribute copies of approved schedule electronically, PDF format, to Architect Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.

2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 01.32.00
SECTION 01 32 33 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY
   
   A. This Section includes administrative and procedural requirements for the following:
      1. Preconstruction photographs.
      2. Periodic construction photographs.
   
   B. See Owner's General Requirements and other Contracting Documents.
   
   C. See Division 01 Section "Closeout Procedures" for submitting digital media as Project Record Documents at Project closeout.

1.2 SUBMITTALS
   
   A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same label information as corresponding set of photographs.
   
   B. Construction Photographs:
      1. Digital Images: Submit a complete set of digital image electronic files with each submittal of prints on CD-ROM. Identify electronic media with date photographs were taken. Submit images that have same aspect ratio as the sensor, uncropped.
      2. Identification: On each CD-ROM, include:
         a. Name of Project.
         b. Name of Contractor.
         c. Date photograph was taken if not date stamped by camera.
         d. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
         e. Unique sequential identifier.

1.3 QUALITY ASSURANCE
   
   A. Photographer Qualifications: An individual who has been regularly engaged as a professional photographer of construction projects for not less than three years.
1.4 COORDINATION

A. Auxiliary Services: Cooperate with photographer and provide auxiliary services requested, including access to Project site and use of temporary facilities, including temporary lighting required to produce clear, well-lit photographs without obscuring shadows.

1.5 USAGE RIGHTS

A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

A. Digital Images: Provide images in uncompressed TIFF format, produced by a digital camera with minimum sensor size of 4.0 megapixels, and at an image resolution of not less than 1024 by 768 pixels.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

A. Photographer: Engage a qualified commercial photographer to take construction photographs.

B. 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.

C. Film Images:

1. Date Stamp: Unless otherwise indicated, date and time stamp each photograph as it is being taken so stamp is integral to photograph.

2. Field Office Prints: Retain one set of prints of progress photographs in the field office at Project site, available at all times for reference. Identify photographs same as for those submitted to Architect.

D. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
1. Date and Time: Include date and time in filename for each image.
2. Field Office Images: Maintain one set of images on CD-ROM in the field office at Project site, available at all times for reference. Identify images same as for those submitted to Architect.

E. Preconstruction Photographs: Before commencement of work, take digital photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.

1. Take a minimum of eight (8) photographs to show existing conditions adjacent to property before starting the Work.
2. Take a minimum of eight (8) photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.

F. Periodic Construction Photographs: Take twelve (12) digital photographs weekly, with timing each month adjusted to coincide with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.

G. Additional Photographs: Architect may issue requests for additional photographs, in addition to periodic photographs specified. Additional photographs will be paid for by Change Order and are not included in the Contract Sum.

1. Three days' notice will be given, where feasible.
2. In emergency situations, take additional photographs within 24 hours of request.
3. Circumstances that could require additional photographs include, but are not limited to, the following:
   a. Special events planned at Project site.
   b. Immediate follow-up when on-site events result in construction damage or losses.
   c. Photographs to be taken at fabrication locations away from Project site. These photographs are not subject to unit prices or unit-cost allowances.
   d. Substantial Completion of a major phase or component of the Work.
   e. Extra record photographs at time of final acceptance.
   f. Owner's request for special publicity photographs.

END OF SECTION 01 32 33
SECTION 01 33 00 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

B. See Owner’s General Requirements and other Contracting Documents.

C. See Division 01 Section “Construction Progress Documentation” for submitting schedules and reports, including Contractor’s Construction Schedule.

D. See Division 01 Section “Quality Requirements” for submitting test and inspection reports.

E. See Division 01 Section “Closeout Procedures” for submitting warranties.

F. See Division 01 Section “Project Record Documents” for submitting Record Drawings.

G. See Division 01 Section “Operation and Maintenance Data” for submitting operation and maintenance manuals.

H. See Division 01 Section “Demonstration and Training” for submitting videotapes of demonstration of equipment and training of Owner’s personnel.

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information that requires Architect’s responsive action.

B. Informational Submittals: Written information that does not require Architect’s responsive action. Submittals may be rejected for not complying with requirements.

1.3 SUBMITTAL PROCEDURES

A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

   1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

   a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

B. Submittals Schedule: Comply with requirements in Division 01 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.

C. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

   1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
   2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
   3. Resubmittal Review: Allow 15 days for review of each resubmittal.

D. Identification: Place a permanent label or title block on each submittal for identification.

   1. Indicate name of firm or entity that prepared each submittal on label or title block.
   2. Provide a space approximately 150 by 200 mm (6 by 8 inches) on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
   3. Include the following information on label for processing and recording action taken:
      a. Project name.
      b. Date.
      c. Name and address of Architect.
      d. Name and address of Contractor.
      e. Name and address of subcontractor.
      f. Name and address of supplier.
      g. Name of manufacturer.
      h. Submittal number or other unique identifier, including revision identifier.

         1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).

         i. Number and title of appropriate Specification Section.
j. Drawing number and detail references, as appropriate.
k. Location(s) where product is to be installed, as appropriate.
l. Other necessary identification.

E. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.

F. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.

1. Additional copies submitted for maintenance manuals will not be marked with action taken and will be returned.

G. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will discard submittals received from sources other than Contractor.

H. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked "Furnish As Submitted" or "Furnish as Noted."

I. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

J. Use for Construction: Use only final submittals with mark indicating "Furnish As Submitted" or "Furnish as Noted" taken by Architect.

1.4 CONTRACTOR'S USE OF ARCHITECT'S CAD FILES

1. Architect's CAD files will be not be provided to Contractor for Contractor's use in connection with Project.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual Specification Sections.
B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:
   a. Manufacturer's written recommendations.
   b. Manufacturer's product specifications.
   c. Manufacturer's installation instructions.
   d. Manufacturer's catalog cuts.
   e. Wiring diagrams showing factory-installed wiring.
   f. Printed performance curves.
   g. Operational range diagrams.
   h. Compliance with specified referenced standards.
   i. Testing by recognized testing agency.

4. Number of Copies: Submit six copies of Product Data, unless otherwise indicated. Architect will return two copies. Mark up and retain one returned copy as a Project Record Document.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
   a. Dimensions.
   b. Identification of products.
   c. Fabrication and installation drawings.
   d. Roughing-in and setting diagrams.
   e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
   f. Shopwork manufacturing instructions.
   g. Templates and patterns.
   h. Schedules.
   i. Notation of coordination requirements.
   j. Notation of dimensions established by field measurement.
   k. Relationship to adjoining construction clearly indicated.
   l. Seal and signature of professional engineer if specified.
   m. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 215 by 280 mm (8-1/2 by 11 inches) but no larger than 750 by 1000 mm (30 by 40 inches).

3. Number of Copies: Submit six opaque (bond) copies of each submittal. Architect will return two copies.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.

2. Identification: Attach label on unexposed side of Samples that includes the following:
   a. Generic description of Sample.
   b. Product name and name of manufacturer.
   c. Sample source.
   d. Number and title of appropriate Specification Section.

3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
   a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.

5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
   a. Number of Samples: Submit four sets of Samples. Architect will return two Sample sets. Mark up and retain one returned Sample set as a Project Record Sample.

E. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location.
1. Number of Copies: Submit four copies of product schedule or list, unless otherwise indicated. Architect will return two copies.

F. Submittals Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."

G. Application for Payment: Comply with requirements specified in Division 01 Section "Payment Procedures."

H. Schedule of Values: Comply with requirements specified in Division 01 Section "Payment Procedures."

I. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design.

1. Number of Copies: Submit five copies of subcontractor list, unless otherwise indicated. Architect will return two copies.

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification Sections.

1. Number of Copies: Submit two copies of each submittal, unless otherwise indicated. Architect will not return copies.

2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

3. Test and Inspection Reports: Comply with requirements specified in Division 01 Section "Quality Requirements."

B. Coordination Drawings: Comply with requirements specified in Division 01 Section "Project Management and Coordination."

C. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."

D. 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.

E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure
Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.

F. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

G. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

H. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

I. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

J. 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 in the Contract Documents.

K. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. 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.

L. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.

M. Preconstruction 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 in the Contract Documents.

N. 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.

O. 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 in the Contract Documents.
P. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."

Q. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

R. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer.

S. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
   2. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
   3. Results of operational and other tests and a statement of whether observed performance complies with requirements.

T. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

U. Material Safety Data Sheets (MSDSs): Submit information directly to Owner; do not submit to Architect.
   1. Architect will not review submittals that include MSDSs and will return them for resubmittal.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of
reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.

B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:

1. “Furnish As Submitted”
2. “Furnish As Noted”
3. “Revise and Resubmit”
4. “Rejected”

C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.

E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 01 33 00
PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes special procedures for historic treatment on Project including, but not limited to, the following:

1. Temporary protection of historic materials during construction.
2. Protection during application of chemicals.
3. Protection during use of heat-generating equipment.
4. Historic treatment procedures.
5. Removal of bird excrement.

1.2 DEFINITIONS

A. "Preservation": To apply measures necessary to sustain the existing form, integrity, and materials of a historic property. Work may include preliminary measures to protect and stabilize the property.

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

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

D. "Reconstruction": To reproduce in the exact form and detail a building, structure, or artifact as it appeared at a specific period in time.

E. "Stabilize": To apply measures designed to reestablish a weather-resistant enclosure and the structural reinforcement of an item or portion of the building while maintaining the essential form as it exists at present.

F. "Protect and Maintain": To remove deteriorating corrosion, reapply protective coatings, and install protective measures such as temporary guards; to provide the least degree of intervention.

G. "Repair": To stabilize, consolidate, or conserve; to retain existing materials and features while employing as little new material as possible. Repair includes patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading materials. Within restoration, repair also
includes limited replacement in kind, rehabilitation, and reconstruction, with compatible substitute materials for deteriorated or missing parts of features when there are surviving prototypes.

H. "Replace": To duplicate and replace entire features with new material in kind. Replacement includes the following conditions:

1. Duplication: Includes replacing elements damaged beyond repair or missing. Original material is indicated as the pattern for creating new duplicated elements.
2. Replacement with New Materials: Includes replacement with new material when original material is not available as patterns for creating new duplicated elements.
3. Replacement with Substitute Materials: Includes replacement with compatible substitute materials. Substitute materials are not allowed, unless otherwise indicated.

I. "Remove": To detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.

J. "Remove and Salvage": To detach items from existing construction and deliver them to Owner.

K. "Remove and Reinstall": To detach items from existing construction, repair and clean them for reuse, and reinstall them where indicated.

L. "Existing to Remain" or "Retain": Existing items of construction that are not to be removed and that are not otherwise indicated to be removed and salvaged, or removed and reinstalled.

M. "Material in Kind": Material that matches existing materials, as much as possible, in species, cut, color, grain, and finish.

1.3 SUBMITTALS

A. Historic Treatment Program: Submit a written plan for each phase or process including protection of surrounding materials during operations. Describe in detail materials, methods, and equipment to be used for each phase of work.

B. Alternative Methods and Materials: If alternative methods and materials to those indicated are proposed for any phase of work, provide a written description including evidence of successful use on other, comparable projects, and program of testing to demonstrate effectiveness for use on this Project.

C. Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by historic treatment operations. Submit before work begins.
1.4 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: A firm that employs personnel, including supervisory personnel, experienced and skilled in the processes and operations indicated.

B. Historic Treatment Preconstruction Conference: Conduct conference at Project site.

1.5 PROJECT-SITE CONDITIONS

A. Exterior Cleaning and Repairing:

1. Proceed with the work only when forecasted weather conditions are favorable.

   a. Wet Weather: Do not attempt repairs during rainy or foggy weather. Do not apply primer, paint, putty, or epoxy when the relative humidity is above 80 percent. Do not remove exterior elements of structures when rain is forecast or in progress.

   b. Do not perform exterior wet work when the air temperature is below 5 deg C (40 deg F).

   c. Do not begin cleaning, patching, or repairing when there is any likelihood of frost or freezing.

   d. Do not begin cleaning when either the air or the surface temperature is below 7 deg C (45 deg F) unless approved means are provided for maintaining a 7 deg C (45 deg F) temperature of the air and materials during, and for 48 hours subsequent to, cleaning.

2. Perform cleaning and rinsing of the exterior only during daylight hours.

B. Owner will occupy portions of building immediately adjacent to historic treatment area. Conduct historic treatment so Owner's operations will not be disrupted. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PROTECTION, GENERAL

A. Comply with manufacturer's written instructions for precautions and effects of products and procedures on adjacent building materials, components, and vegetation.

B. Ensure that supervisory personnel are present when work begins and during its progress.
C. Temporary Protection of Historic Materials during Construction:
   1. Protect existing materials during installation of temporary protections and
      construction. Do not deface or remove existing materials.
   2. Attachments of temporary protection to existing construction shall be approved by
      Architect prior to installation.

D. Protect landscape work adjacent to or within work areas as follows:
   1. Provide barriers to protect tree trunks.
   2. Bind spreading shrubs.
   3. Use coverings that allow plants to breathe and remove coverings at the end of each
      day. Do not cover plant material with a waterproof membrane for more than 8 hours at
      a time.
   4. Set scaffolding and ladder legs away from plants.

E. Existing Drains: Prior to the start of work or any cleaning operations, test drains and other
   water removal systems to ensure that drains and systems are functioning properly. Notify
   Architect immediately of drains or systems that are stopped or blocked. Do not begin Work
   of this Section until the drains are in working order.
   1. Provide a method to prevent solids including stone or mortar residue from entering the
      drains or drain lines. Clean out drains and drain lines that become blocked or filled by
      sand or any other solids because of work performed under this Contract.
   2. Protect storm drains from pollutants. Block drains or filter out sediments, allowing only
      clean water to pass.

3.2 PROTECTION DURING APPLICATION OF CHEMICALS

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

B. Comply with requirements in Division 01 Section “Temporary Facilities and Controls.”

C. Cover adjacent surfaces with materials that are proven to resist chemical cleaners selected for
   Project unless chemicals being used will not damage adjacent surfaces. Use covering
   materials that contain only waterproof, UV-resistant adhesives. Apply masking agents to
   comply with manufacturer's written instructions. Do not apply liquid masking agent to
   painted or porous surfaces. When no longer needed, promptly remove masking to prevent
   adhesive staining.

D. Do not clean surfaces during winds of sufficient force to spread cleaning solutions to
   unprotected surfaces.
E. Neutralize and collect alkaline and acid wastes and dispose of off Owner's property.

F. Dispose of runoff from chemical 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.

3.3 PROTECTION DURING USE OF HEAT-GENERATING EQUIPMENT

A. Comply with the following procedures while performing work with heat-generating equipment, including welding, cutting, soldering, brazing, paint removal with heat, and other operations where open flames or implements utilizing heat are used:

1. Obtain Owner's approval for operations involving use of open-flame or welding equipment.
   a. Notification shall be given for each occurrence and location of work with heat-generating equipment.

2. As far as practical, use heat-generating equipment in shop areas or outside the building.

3. Before work with heat-generating equipment commences, furnish personnel to serve as a fire watch (or watches) for location(s) where work is to be performed.

4. Do not perform work with heat-generating equipment in or near rooms or in areas where flammable liquids or explosive vapors are present or thought to be present. Use a combustible gas indicator test to ensure that the area is safe.

5. Remove and keep the area free of combustibles, including, rubbish, paper, waste, etc., within area of operations.
   a. If combustible material cannot be removed, provide fireproof blankets to cover such materials.

6. Where possible, furnish and use baffles of metal or gypsum board to prevent the spraying of sparks or hot slag into surrounding combustible material.

7. Prevent the extension of sparks and particles of hot metal through open windows, doors, holes, and cracks in floors, walls, ceilings, roofs, and other openings.

8. Inspect each location of the day's work not sooner than 30 minutes after completion of operations to detect hidden or smoldering fires and to ensure that proper housekeeping is maintained.

B. Where sprinkler protection exists and is functional, maintain it without interruption while operations are being performed. If operations are performed close to automatic sprinkler heads, shield the individual heads temporarily with guards.
3.4 HISTORIC TREATMENT PROCEDURES

A. The principal aim of preservation work is to halt the process of deterioration and stabilize the item's condition, unless otherwise indicated. Repair is required where specifically indicated. The following procedures shall be followed:

1. Retain as much existing material as possible; repair and consolidate rather than replace.
2. Use additional material or structure to reinforce, strengthen, prop, tie, and support existing material or structure.
3. Use reversible processes wherever possible.
4. Use traditional replacement materials and techniques. New work shall be distinguishable to the trained eye, on close inspection, from old work.
5. Record the work before the procedure with preconstruction photos and during the work with periodic construction photos. Photographic documentation is specified in Division 01 Section “Photographic Documentation”.

B. Prohibit smoking by personnel performing work on or near historic structures.

C. Obtain Architect's review and written approval in the form of a Constructive Change Directive or Supplemental Instruction before making changes or additions to construction or removing historic materials.

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

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

E. Where missing features are indicated to be repaired or replaced, provide features whose designs are based on accurate duplications rather than on conjectural designs, subject to the approval of Architect and Historic Treatment Specialist.

F. Where Work requires existing features to be removed, cleaned, and reused, perform these operations without damage to the material itself, to adjacent materials, or to the substrate.

G. Identify new or replacement materials and features with inconspicuous, permanent marks to distinguish them from original materials. Record the legend of identification marks and the locations of these marks on Record Drawings.

H. When cleaning, match samples of existing materials that have been cleaned and identified for acceptable cleaning levels. Avoid overcleaning to prevent damage to existing materials during cleaning.
3.5 REMOVAL OF BIRD EXCREMENT

A. General: Before disturbing accumulated bird excrement, consult with an occupational medicine physician, industrial hygienist, and authorities having jurisdiction to determine acceptable removal procedures and appropriate protective measures for personnel.

B. Removing Bird Excrement: Treat bird excrement before its removal as required by authorities having jurisdiction.

1. Prior to removal, dampen excrement to prevent it from becoming airborne.
2. Use only nonmetallic tools (plastic spatulas and brushes with natural fiber or nylon bristles, or their equivalent) to remove excrement.
3. Collect removed excrement and legally disposed of off site.
4. Perform bird excrement removal work from the outside of the building with windows and other openings in the building closed.

END OF SECTION 01 35 91
SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for quality assurance and quality control.

B. See Owner's General Requirements and other Contracting Documents.

C. Testing and inspecting 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. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.

2. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

D. See Divisions 02 through 49 Sections for specific test and inspection requirements.

1.2 DEFINITIONS

A. 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.

B. 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. Services do not include contract enforcement activities performed by Architect.

C. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.

D. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.
E. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.

F. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

G. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

H. 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, and similar operations.

1. Using a term such as “carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.

I. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.3 CONFLICTING REQUIREMENTS

A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be 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 Architect for a decision before proceeding.

1.4 SUBMITTALS

A. Qualification Data: 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.

B. Reports: Prepare and submit certified written reports that include the following:
1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number 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.
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 inspecting.
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.

C. Permits, Licenses, and Certificates: For Owner's records, 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.

1.5 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Installer Qualifications: A firm or individual experienced in installing, erecting, 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.

C. 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.

D. 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.

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 to those indicated for this Project in material, design, and extent.
F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirement for specialists shall not supersede building codes and regulations governing the Work.

G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.

1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

1.6 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
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.

B. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. 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.

1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
   a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. 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 Division 01 Section "Submittal Procedures."

D. 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.

   1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
   2. Determine the location 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 any duties of Contractor.

F. Associated Services: Cooperate with agencies 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 inspecting. 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 inspecting equipment at Project site.
G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.7 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Owner will engage a qualified testing agency or special inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner.

B. Special Tests and Inspections: Conducted by a qualified testing agency or special inspector as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:

1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, 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. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
2. Comply with the Contract Document requirements for Division 01 Section "Cutting and Patching."
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.

END OF SECTION 01 40 00
PART 1 - GENERAL

1.1 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.

C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."

D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

H. "Provide": Furnish and install, complete and ready for the intended use.

I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.2 INDUSTRY STANDARDS

A. 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.
B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.3 ABBREVIATIONS AND ACRONYMS

A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Thomson Gale's "Encyclopedia of Associations" or in Columbia Books' "National Trade & Professional Associations of the U.S."

B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.

AA Aluminum Association, Inc. (The)
AAADM American Association of Automatic Door Manufacturers
AABC Associated Air Balance Council
AAMA American Architectural Manufacturers Association
AASHTO American Association of State Highway and Transportation Officials
AATCC American Association of Textile Chemists and Colorists (The)
ABAA Air Barrier Association of America
ABMA American Bearing Manufacturers Association
ACI ACI International (American Concrete Institute)
ACPA American Concrete Pipe Association
AEIC Association of Edison Illuminating Companies, Inc. (The)
AF&PA American Forest & Paper Association
AGA American Gas Association
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Name</th>
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<tbody>
<tr>
<td>AGC</td>
<td>Associated General Contractors of America (The)</td>
</tr>
<tr>
<td>AHA</td>
<td>American Hardboard Association (Now part of CPA)</td>
</tr>
<tr>
<td>AHAM</td>
<td>Association of Home Appliance Manufacturers</td>
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<tr>
<td>AI</td>
<td>Asphalt Institute</td>
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<tr>
<td>AIA</td>
<td>American Institute of Architects (The)</td>
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<tr>
<td>AISC</td>
<td>American Institute of Steel Construction</td>
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<tr>
<td>AISI</td>
<td>American Iron and Steel Institute</td>
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<tr>
<td>AITC</td>
<td>American Institute of Timber Construction</td>
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<tr>
<td>ALCA</td>
<td>Associated Landscape Contractors of America (Now PLANET - Professional Landcare Network)</td>
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<tr>
<td>ALSC</td>
<td>American Lumber Standard Committee, Incorporated</td>
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<td>AMCA</td>
<td>Air Movement and Control Association International, Inc.</td>
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<td>ANSI</td>
<td>American National Standards Institute</td>
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<tr>
<td>AOSA</td>
<td>Association of Official Seed Analysts, Inc.</td>
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<tr>
<td>APA</td>
<td>Architectural Precast Association</td>
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<tr>
<td>APA</td>
<td>APA - The Engineered Wood Association</td>
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<tr>
<td>APA EWS</td>
<td>APA - The Engineered Wood Association; Engineered Wood Systems</td>
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<tr>
<td>API</td>
<td>American Petroleum Institute</td>
</tr>
<tr>
<td>ARI</td>
<td>Air-Conditioning &amp; Refrigeration Institute</td>
</tr>
<tr>
<td>ARMA</td>
<td>Asphalt Roofing Manufacturers Association</td>
</tr>
<tr>
<td>ASCE</td>
<td>American Society of Civil Engineers</td>
</tr>
<tr>
<td>ASCE/SEI</td>
<td>American Society of Civil Engineers/Structural Engineering Institute (See ASCE)</td>
</tr>
<tr>
<td>ASHRAE</td>
<td>American Society of Heating, Refrigerating and Air-Conditioning Engineers</td>
</tr>
</tbody>
</table>
ASME  ASME International  (The American Society of Mechanical Engineers International)
ASSE  American Society of Sanitary Engineering
ASTM  ASTM International  (American Society for Testing and Materials International)
AWCI  AWCI International  (Association of the Wall and Ceiling Industry International)
AWCMA  American Window Covering Manufacturers Association  (Now WCSC)
AWI  Architectural Woodwork Institute
AWS  American Welding Society
AWWA  American Water Works Association
BHMA  Builders Hardware Manufacturers Association
BIA  Brick Industry Association (The)
BIFMA  BIFMA International  (Business and Institutional Furniture Manufacturer’s Association International)
BISSC  Baking Industry Sanitation Standards Committee
CCC  Carpet Cushion Council
CDA  Copper Development Association
CFFA  Chemical Fabrics & Film Association, Inc.
CGA  Compressed Gas Association
CIMA  Cellulose Insulation Manufacturers Association
CISCA  Ceilings & Interior Systems Construction Association
CISPI  Cast Iron Soil Pipe Institute
CLFMI  Chain Link Fence Manufacturers Institute
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>CRRC</td>
<td>Cool Roof Rating Council</td>
</tr>
<tr>
<td>CPA</td>
<td>Composite Panel Association</td>
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<tr>
<td>CPPA</td>
<td>Corrugated Polyethylene Pipe Association</td>
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<tr>
<td>CRI</td>
<td>Carpet &amp; Rug Institute (The)</td>
</tr>
<tr>
<td>CRSI</td>
<td>Concrete Reinforcing Steel Institute</td>
</tr>
<tr>
<td>CSA</td>
<td>Canadian Standards Association</td>
</tr>
<tr>
<td>CSA</td>
<td>CSA International (Formerly: IAS - International Approval Services)</td>
</tr>
<tr>
<td>CSI</td>
<td>Cast Stone Institute</td>
</tr>
<tr>
<td>CSI</td>
<td>Construction Specifications Institute (The)</td>
</tr>
<tr>
<td>CTI</td>
<td>Cooling Technology Institute (Formerly: Cooling Tower Institute)</td>
</tr>
<tr>
<td>DHI</td>
<td>Door and Hardware Institute</td>
</tr>
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<td>EIA</td>
<td>Electronic Industries Alliance</td>
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<tr>
<td>EIMA</td>
<td>EIFS Industry Members Association</td>
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<td>EJCDC</td>
<td>Engineers Joint Contract Documents Committee</td>
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<tr>
<td>EJMA</td>
<td>Expansion Joint Manufacturers Association, Inc.</td>
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<td>FM Approvals</td>
<td>FM Approvals</td>
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<td>FM Global</td>
<td>FM Global (Formerly: FMG - FM Global)</td>
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<td>FMRC</td>
<td>Factory Mutual Research (Now FM Global)</td>
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<tr>
<td>FSA</td>
<td>Fluid Sealing Association</td>
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<tr>
<td>Abbreviation</td>
<td>Full Name</td>
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<tr>
<td>FSC</td>
<td>Forest Stewardship Council</td>
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<tr>
<td>GA</td>
<td>Gypsum Association</td>
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<td>GANA</td>
<td>Glass Association of North America</td>
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<tr>
<td>GRI</td>
<td>(Now GSI)</td>
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<tr>
<td>GS</td>
<td>Green Seal</td>
</tr>
<tr>
<td>GSI</td>
<td>Geosynthetic Institute</td>
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<tr>
<td>HI</td>
<td>Hydraulic Institute</td>
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<tr>
<td>HI</td>
<td>Hydronics Institute</td>
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<td>HMMA</td>
<td>Hollow Metal Manufacturers Association (Part of NAAMM)</td>
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<tr>
<td>HPVA</td>
<td>Hardwood Plywood &amp; Veneer Association</td>
</tr>
<tr>
<td>HPW</td>
<td>H. P. White Laboratory, Inc.</td>
</tr>
<tr>
<td>IAS</td>
<td>International Approval Services (Now CSA International)</td>
</tr>
<tr>
<td>IBF</td>
<td>International Badminton Federation</td>
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<tr>
<td>ICEA</td>
<td>Insulated Cable Engineers Association, Inc.</td>
</tr>
<tr>
<td>ICRI</td>
<td>International Concrete Repair Institute, Inc.</td>
</tr>
<tr>
<td>IEC</td>
<td>International Electrotechnical Commission</td>
</tr>
<tr>
<td>IEEE</td>
<td>Institute of Electrical and Electronics Engineers, Inc. (The)</td>
</tr>
<tr>
<td>IESNA</td>
<td>Illuminating Engineering Society of North America</td>
</tr>
<tr>
<td>IEST</td>
<td>Institute of Environmental Sciences and Technology</td>
</tr>
<tr>
<td>IGCC</td>
<td>Insulating Glass Certification Council</td>
</tr>
<tr>
<td>IGMA</td>
<td>Insulating Glass Manufacturers Alliance</td>
</tr>
<tr>
<td>ILI</td>
<td>Indiana Limestone Institute of America, Inc.</td>
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</tbody>
</table>
ISO  International Organization for Standardization

ISSFA  International Solid Surface Fabricators Association

ITS  Intertek Testing Service NA

ITU  International Telecommunication Union

KCMA  Kitchen Cabinet Manufacturers Association

LMA  Laminating Materials Association
(Now part of CPA)

LPI  Lightning Protection Institute

MBMA  Metal Building Manufacturers Association

MFMA  Maple Flooring Manufacturers Association, Inc.

MFMA  Metal Framing Manufacturers Association, Inc.

MH  Material Handling
(Now MHIA)

MHIA  Material Handling Industry of America

MIA  Marble Institute of America

MPI  Master Painters Institute

MSS  Manufacturers Standardization Society of The Valve and Fittings Industry Inc.

NAAMM  National Association of Architectural Metal Manufacturers

NACE  NACE International
(National Association of Corrosion Engineers International)

NAIMA  North American Insulation Manufacturers Association

NBGQA  National Building Granite Quarries Association, Inc.

NCAA  National Collegiate Athletic Association (The)

NCMA  National Concrete Masonry Association
<table>
<thead>
<tr>
<th>Code</th>
<th>Association Name</th>
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<tbody>
<tr>
<td>NCPI</td>
<td>National Clay Pipe Institute</td>
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<tr>
<td>NCTA</td>
<td>National Cable &amp; Telecommunications Association</td>
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<tr>
<td>NEBB</td>
<td>National Environmental Balancing Bureau</td>
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<tr>
<td>NECA</td>
<td>National Electrical Contractors Association</td>
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<tr>
<td>NeLMA</td>
<td>Northeastern Lumber Manufacturers' Association</td>
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<td>NEMA</td>
<td>National Electrical Manufacturers Association</td>
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<td>NETA</td>
<td>InterNational Electrical Testing Association</td>
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<td>NFHS</td>
<td>National Federation of State High School Associations</td>
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<td>NFPA</td>
<td>NFPA (National Fire Protection Association)</td>
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<td>NFRC</td>
<td>National Fenestration Rating Council</td>
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<td>National Glass Association</td>
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<td>National Hardwood Lumber Association</td>
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<td>NLGA</td>
<td>National Lumber Grades Authority</td>
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<td>NOFMA</td>
<td>NOFMA: The Wood Flooring Manufacturers Association</td>
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<td>NRCA</td>
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<td>NRMCA</td>
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<td>NSSGA</td>
<td>National Stone, Sand &amp; Gravel Association</td>
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<td>NTMA</td>
<td>National Terrazzo &amp; Mosaic Association, Inc. (The)</td>
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<tr>
<td>NTRMA</td>
<td>National Tile Roofing Manufacturers Association</td>
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<td></td>
<td>(Now TRI)</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
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<tr>
<td>NWWDNA</td>
<td>National Wood Window and Door Association (Now WDMA)</td>
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<tr>
<td>PCI</td>
<td>Precast/Prestressed Concrete Institute</td>
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<td>PDCA</td>
<td>Painting &amp; Decorating Contractors of America</td>
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<td>PDI</td>
<td>Plumbing &amp; Drainage Institute</td>
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<td>PGI</td>
<td>PVC Geomembrane Institute</td>
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<td>PLANET</td>
<td>Professional Landcare Network (Formerly: ACLA - Associated Landscape Contractors of America)</td>
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<td>PTI</td>
<td>Post-Tensioning Institute</td>
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<td>RCSC</td>
<td>Research Council on Structural Connections</td>
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<td>RFCI</td>
<td>Resilient Floor Covering Institute</td>
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<td>RIS</td>
<td>Redwood Inspection Service</td>
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<td>Steel Deck Institute</td>
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<td>SDI</td>
<td>Steel Door Institute</td>
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<td>SEFA</td>
<td>Scientific Equipment and Furniture Association</td>
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<td>SEI/ASCE</td>
<td>Structural Engineering Institute/American Society of Civil Engineers (See ASCE)</td>
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<td>SIA</td>
<td>Security Industry Association</td>
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<td>SIGMA</td>
<td>Sealed Insulating Glass Manufacturers Association (Now IGMA)</td>
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<td>SJI</td>
<td>Steel Joist Institute</td>
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<td>SMA</td>
<td>Screen Manufacturers Association</td>
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<td>SMACNA</td>
<td>Sheet Metal and Air Conditioning Contractors' National Association</td>
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<td>Acronym</td>
<td>Full Name</td>
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<td>SPFA</td>
<td>Spray Polyurethane Foam Alliance</td>
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<td>(Formerly: SPI/SPFD - The Society of the Plastics Industry, Inc.; Spray Polyurethane Foam Division)</td>
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<td>SPIB</td>
<td>Southern Pine Inspection Bureau (The)</td>
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<td>SPRI</td>
<td>Single Ply Roofing Industry</td>
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<td>SSINA</td>
<td>Specialty Steel Industry of North America</td>
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<tr>
<td>SSIPC</td>
<td>SSIPC: The Society for Protective Coatings</td>
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<tr>
<td>SWI</td>
<td>Steel Window Institute</td>
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<td>SWRI</td>
<td>Sealant, Waterproofing, &amp; Restoration Institute</td>
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<td>TCA</td>
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<td>TIA/EIA</td>
<td>Telecommunications Industry Association/Electronic Industries Alliance</td>
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<td>TMS</td>
<td>The Masonry Society</td>
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<td>TPI</td>
<td>Truss Plate Institute, Inc.</td>
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<td>TPI</td>
<td>Turfgrass Producers International</td>
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<td>TRI</td>
<td>Tile Roofing Institute</td>
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<td>UL</td>
<td>Underwriters Laboratories Inc.</td>
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<td>UNI</td>
<td>Uni-Bell PVC Pipe Association</td>
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<td>USGBC</td>
<td>U.S. Green Building Council</td>
</tr>
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<td>USITT</td>
<td>United States Institute for Theatre Technology, Inc.</td>
</tr>
<tr>
<td>WASTEC</td>
<td>Waste Equipment Technology Association</td>
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<td>WCMA</td>
<td>Window Covering Manufacturers Association</td>
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<tr>
<td></td>
<td>(Now WCSC)</td>
</tr>
<tr>
<td>WCSC</td>
<td>Window Covering Safety Council</td>
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<tr>
<td></td>
<td>(Formerly: WCMA - Window Covering Manufacturers Association)</td>
</tr>
</tbody>
</table>
WDMA  Window & Door Manufacturers Association  
(Formerly: NWWDA - National Wood Window and Door Association)

WI     Woodwork Institute (Formerly: WIC - Woodwork Institute of California)

WIC    Woodwork Institute of California  
(Now WI)

WMMPA  Wood Moulding & Millwork Producers Association

WSRCA  Western States Roofing Contractors Association

WWPA   Western Wood Products Association

Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.

IAPMO  International Association of Plumbing and Mechanical Officials

ICBO   International Conference of Building Officials  
(See ICC)

ICBO ES ICBO Evaluation Service, Inc.  
(See ICC-ES)

ICC    International Code Council

ICC-ES ICC Evaluation Service, Inc.

UBC    Uniform Building Code  
(See ICC)

Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list.

ADAAG  Americans with Disabilities Act (ADA)  
Architectural Barriers Act (ABA)

CFR    Code of Federal Regulations

DOD    Department of Defense Military Specifications and Standards
REPAIR MAIN ENTRANCE – JONES HALL
CCAC Allegheny Campus
CCAC Project 16-AC-001
RMP Project 15052

FED-STD  Federal Standard
         (See FS)

FS       Federal Specification

FTMS     Federal Test Method Standard
         (See FS)

MIL      (See MILSPEC)
MIL-STD

MILSPEC  Military Specification and Standards

UFAS     Uniform Federal Accessibility Standards

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 42 00
SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes requirements for temporary support facilities, security, and protection facilities.

B. See Owner's General Requirements and other Contracting Documents.

C. See Division 01 Section “Summary”.

D. See Division 01 Section "Execution" for progress cleaning requirements.

1.2 DEFINITIONS

A. Permanent Enclosure: As determined by Architect, permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

1.3 USE CHARGES

A. General: Cost or use charges for temporary facilities shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's representatives and vendors, Architect and its consultants, occupants of Project, testing agencies, and authorities having jurisdiction.

B. Water Service: 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.

C. Electric Power Service: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.4 SUBMITTALS

A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
B. Floor Plan and Details: Show locations and construction detail of temporary partitions. Indicate provisions for temporary exiting and signage.

1.5 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.6 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Lumber and Plywood: Comply with requirements in Division 06 Section "Miscellaneous Rough Carpentry."

B. Gypsum Board: Minimum 12.7 mm (1/2 inch) thick by 1219 mm (48 inches) wide by maximum available lengths; regular-type panels with tapered edges. Comply with ASTM C 36/C 36M.

C. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.

2.2 TEMPORARY FACILITIES

A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

B. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. HVAC Equipment: Not applicable.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide incombustible construction for offices, shops, and sheds located within construction area or within 9 m (30 feet) of building lines. Comply with NFPA 241.

2. Maintain support facilities until near Substantial Completion. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Project Identification and Temporary Signs: Provide Project identification and other signs. Install signs in quantities and locations as requested by Owner to inform public and individuals seeking entrance to Project. Unauthorized signs are not permitted.

1. Provide temporary, directional signs for construction personnel and visitors.

2. Maintain and touchup signs so they are legible at all times.

C. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

D. Existing Elevator Use: Not applicable.

E. Existing Interior Stair Usage: Not applicable.
3.3 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

B. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

C. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

D. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.

   1. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.

E. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner from fumes and noise.

   1. Construction temporary partitions as indicated on Drawings.
   2. Provide walk-off mats at each entrance through temporary partition.

F. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.

   1. Prohibit smoking.
   2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
   3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

3.4 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar
facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
2. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

END OF SECTION 01 50 00
SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.

B. See Owner's General Requirements and other Contracting Documents.

C. See Division 01 Section "Closeout Procedures" for submitting warranties for Contract closeout.

D. See Divisions 02 through 49 Sections for specific requirements for warranties on products and installations specified to be warranted.

1.2 DEFINITIONS

A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

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. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.

3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.
1.3 SUBMITTALS

A. Substitution Requests: Submit three copies of each request for consideration. Identify 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 CSI Form 13.1A or similar format.

2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
   a. Statement indicating why specified material or product cannot be provided.
   b. Coordination information, including a list of changes or modifications 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 substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
   d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
   e. Samples, where applicable or requested.
   f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
   g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
   h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
   i. Detailed comparison of Contractor's Construction Schedule using proposed substitution 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 lack of availability or delays in delivery.
   j. Cost information, including a proposal of change, if any, in the Contract Sum.
   k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
   l. 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 7 days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
a. Form of Acceptance: Change Order.
b. Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.

B. Comparable Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.

   a. Form of Approval: As specified in Division 01 Section "Submittal Procedures."
   b. Use product specified if Architect cannot make a decision on use of a comparable product request within time allocated.

C. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

1.4 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. 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 ensure compliance with the Contract Documents and to ensure 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. Store cementitious products and materials on elevated platforms.
5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Protect stored products from damage and liquids from freezing.

1.6 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.

1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
3. Refer to Divisions 2 through 16 Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."
PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Architect will make selection.
5. Where products are accompanied by the term "match sample," sample to be matched is Architect's.

B. Product Selection Procedures:

1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
7. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system. Comply with provisions in Part 2 "Product Substitutions" Article for consideration of an unnamed product or system.
8. **Basis-of-Design Product:** Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.

9. **Visual Matching Specification:** Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

   a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.

10. **Visual Selection Specification:** Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.

   a. **Standard Range:** Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.

   b. **Full Range:** Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

**2.2 PRODUCT SUBSTITUTIONS**

A. **Timing:** Architect will consider requests for substitution if received within 30 days after the Notice of Award. Requests received after that time may be considered or rejected at discretion of Owner.

B. **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:

1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.

2. Requested substitution does not require extensive revisions to the Contract Documents.
3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
4. Substitution request is fully documented and properly submitted.
5. Requested substitution will not adversely affect Contractor's Construction Schedule.
6. Requested substitution has received necessary approvals of authorities having jurisdiction.
7. Requested substitution is compatible with other portions of the Work.
8. Requested substitution has been coordinated with other portions of the Work.
9. Requested substitution provides specified warranty.

2.3 COMPARABLE PRODUCTS

A. Conditions: Architect will consider Contractor's request for comparable product 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:

1. Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 60 00
SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:

2. General installation of products.
3. Progress cleaning.
4. Starting and adjusting.
5. Protection of installed construction.
6. Correction of the Work.

B. See Owner’s General Requirements and other Contracting Documents.

C. See Division 01 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

1.2 SUBMITTALS

A. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

1.3 QUALITY ASSURANCE

A. Land Surveyor Qualifications: Not applicable.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate
and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.

1. Before construction, verify the location and points of connection of utility services.

B. Acceptance of Conditions: 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. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
2. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
3. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
4. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. 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.

B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.


3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.

B. General: Lay out the Work using accepted construction practices.

1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
3. Inform installers of lines and levels to which they must comply.
4. Check the location, level and plumb, of every major element as the Work progresses.
5. Notify Architect when deviations from required lines and levels exceed allowable tolerances.

3.4 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
   1. Make vertical work plumb and make horizontal work level, unless otherwise indicated.
   2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
   3. 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 subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

G. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
   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.
H. 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.

I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.5 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.

2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 27 deg C (80 deg F).
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

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: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

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 assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.6 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeguards. Replace damaged and malfunctioning controls and equipment.

D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 01 Section "Quality Requirements."

3.7 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. Comply with manufacturer's written instructions for temperature and relative humidity.

3.8 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 01 Section "Cutting and Patching."

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 01 73 00
SECTION 01 73 29 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes procedural requirements for cutting and patching.

B. See Divisions 2 through 16 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.2 SUBMITTALS

A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:

1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.

2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.

3. Products: List products to be used and firms or entities that will perform the Work.

4. Dates: Indicate when cutting and patching will be performed.

5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.

6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.

7. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.3 QUALITY ASSURANCE

A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.

B. 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.
C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related 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.

D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces 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.

1.4 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.

1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.
3.2 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

B. 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.

C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

3.3 PERFORMANCE

A. 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.

B. 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.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.

3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.

4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.

5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.

6. Proceed with patching after construction operations requiring cutting are complete.

C. 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 possible. Provide materials and comply with installation requirements specified in other Sections.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate 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 eliminate 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.

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.

D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 01 73 29
SECTION 01 74 19 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 SUMMARY
A. This Section includes administrative and procedural requirements for the following:
   1. Disposing of nonhazardous demolition and construction waste.

1.2 DEFINITIONS
A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
D. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.3 SUBMITTALS
A. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SALVAGING DEMOLITION WASTE
A. Salvaged Items for Reuse in the Work:
1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until installation.
4. Protect items from damage during transport and storage.
5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.

B. Storage or sale of removed items or materials on-site is not permitted.

3.2 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials.

C. Disposal: Transport waste materials off Owner's property and legally dispose of them.

END OF SECTION 01 74 19
SECTION 01 77 00 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Inspection procedures.
2. Warranties.
3. Final cleaning.

B. See Owner's General Requirements and other Contracting Documents.

C. See Division 01 Section "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.

D. See Division 01 Section "Project Record Documents" for submitting Record Drawings.

E. See Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.

F. See Division 01 Section "Demonstration and Training" for requirements for instructing Owner's personnel.

G. See Divisions 02 through 49 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1.2 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Advise Owner of pending insurance changeover requirements.
3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
5. Prepare and submit Project Record Documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
8. Complete startup testing of systems.
10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
11. Advise Owner of changeover in heat and other utilities.
12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
13. Complete final cleaning requirements, including touchup painting.
14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for Final Completion.

1.3 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit a final Application for Payment according to Division 01 Section "Payment Procedures."
2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit pest-control final inspection report and warranty.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.4 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit four copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize list of spaces in sequential order.
2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.

1.5 WARRANTIES

A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 215-by-280-mm (8-1/2-by-11-inch) paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

C. Provide additional copies of each warranty to include in operation and maintenance manuals.
PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Provide 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.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:

   a. 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.
   b. Remove tools, construction equipment, machinery, and surplus material from Project site.
   c. 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.
   d. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
   e. Sweep concrete floors broom clean in unoccupied spaces.
   f. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
   g. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
   h. Remove labels that are not permanent.
i. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.

1) Do not paint over “UL” and similar labels, including mechanical and electrical nameplates.

j. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.

k. Replace parts subject to unusual operating conditions.

l. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.

m. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.

n. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

o. Leave Project clean and ready for occupancy.

C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner’s property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 01 77 00
SECTION 01 78 39 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:

1. Record Drawings.

1.2 SUBMITTALS

A. Record Drawings: Submit two set(s) of marked-up Record Prints.

B. Record Specifications: Submit two copies of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit two copies of each Product Data submittal.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.

1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.

a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.

b. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.

2. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
3. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.

4. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.

2.2 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.

B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

END OF SECTION 01 78 39
SECTION 02 83 33 - LEAD-CONTAINING PAINT REMOVAL AND DISPOSAL

PART 1 - GENERAL

1.1 DESCRIPTION
A. This section specifies basic requirements related to abatement and disposal of lead-based paint (LBP) and controls needed to limit occupational and environmental exposure to lead hazards.
B. The Contractor shall engage an experienced and qualified firm to prepare a job-specific removal and disposal plan for the work and to perform such activities.

1.2 RELATED WORK
A. Division 01 Section “Historic Treatment Procedures.”

1.3 APPLICABLE PUBLICATIONS
A. Comply with applicable federal, state, and local requirements, including but not limited to the publications listed below. The publications are referred to in the text by basic designation only.
B. National Fire Protection Association (NFPA):
   NFPA 701-2004 ........................ Methods of Fire Test for Flame-Resistant Textiles and Films
C. Occupational Safety and Health Administration (OSHA)
   OSHA Standard 29 CFR 1926.62
   OSHA Booklet 3142.................... Lead in Construction
D. Underwriters Laboratories (UL)
   UL 586-1996 (Rev 2009) .............. High-Efficiency, Particulate, Air Filter Units
E. American National Standards Institute
   Z9.2-2006................................. Fundamentals Governing the Design and Operation of Local Exhaust Systems
   Z88.6-2006............................... Respiratory Protection

1.5 QUALITY ASSURANCE
A. CIH Responsibilities: The Contractor shall employ a certified Industrial Hygienist who will be responsible for the following:
   1. Certify Training.
   2. Review and approve lead-containing paint removal plan for conformance to the applicable referenced standards.
3. Inspect lead-containing paint removal work for conformance with the approved plan.
4. Direct monitoring.
5. Ensure work is performed in strict accordance with specifications at all times.
6. Ensure hazardous exposure to personnel and to the environment are adequately controlled at all times.

B. Training: Train each employee performing paint removal, disposal, and air sampling operations prior to the time of initial job assignment.

C. Training Certification: Submit certificates signed and dated by the CIH and by each employee stating that the employee has received training.

D. Respiratory Protection Program:
   1. Furnish each employee required to wear a negative pressure respirator or other appropriate type with a respirator fit test at the time of initial fitting and at least every 6 months thereafter.
   2. Establish and implement a respiratory protection program.

E. Hazard Communication Program: Establish and implement a Hazard Communication Program.

F. Hazardous Waste Management: The Hazardous Waste Management plan shall comply with applicable requirements of Federal, State, and local hazardous waste regulations and address:
   1. Identification of hazardous wastes associated with the work.
   2. Estimated quantities of wastes to be generated and disposed of.
   3. Names and qualifications of each contractor that will be transporting, storing, treating, and disposing of the wastes. Include the facility location and a 24-hour point of contact. Furnish two copies of applicable federal, state, and local permits, including Identification numbers.
   4. Names and qualifications (experience and training) of personnel who will be working on-site with hazardous wastes.
   5. List of waste handling equipment to be used in performing the work, to include cleaning, volume reduction, and transport equipment.
   6. Spill prevention, containment, and cleanup contingency measures to be implemented.
   7. Work plan and schedule for waste containment, removal and disposal. Wastes shall be cleaned up and containerized daily.
   8. Cost for hazardous waste disposal according to this plan.
G. Safety and Health Compliance: In addition to the detailed requirements of this specification, comply with laws, ordinances, rules, and regulations of federal, state, and local authorities regarding removing, handling, storing, transporting, and disposing of lead waste materials. Comply with the applicable requirements of the authorities having jurisdiction.

H. Pre-Construction Conference: Along with the CIH, meet with the Contractor, Architect, and Owner to discuss in detail the lead-containing paint removal work plan, including work procedures and precautions for the work plan.

1.6 SUBMITTALS

A. Manufacturer's Product Data: Vacuum filters; Respirators.

C. Instructions: Paint removal materials. Include applicable material safety data sheets.

D. Statements Certifications and Statements:

1. Qualifications of CIH (Certified Industrial Hygienist): Submit name, address, and telephone number of the CIH selected to perform responsibilities in paragraph entitled "CIH Responsibilities." Provide previous experience of the CIH. Submit proper documentation that the Industrial Hygienist is certified by the American Board of Industrial Hygiene in comprehensive practice, including certification number and date of certification/recertification.

2. Testing Laboratory: Submit the name, address, and telephone number of the testing laboratory selected to perform the monitoring, testing, and reporting of airborne concentrations of lead. Provide proper documentation that persons performing the analysis have been judged proficient by successful participation within the last year in the National Institute for Occupational Safety and Health (NIOSH) Proficiency Analytical Testing (PAT) Program. The laboratory shall be accredited by the American Industrial Hygiene Association (AIHA). Provide AIHA documentation along with date of accreditation/reaccreditation.

3. Lead-Containing Paint Removal Plan:

   a. Submit a detailed job-specific plan of the work procedures to be used in the removal of lead-containing paint. The plan shall include a sketch showing the location, size, and details of lead control areas, location and details of decontamination rooms, change rooms, shower facilities, and mechanical ventilation system.
b. Include in the plan, eating, drinking, smoking and restroom procedures, interface of trades, sequencing of lead related work, collected wastewater and paint debris disposal plan, air sampling plan, respirators, protective equipment, and a detailed description of the method of containment of the operation to ensure that airborne lead concentrations of 30 micrograms per cubic meter of air are not exceeded outside of the lead control area.

4. **Field Test Reports: Monitoring Results:** Submit monitoring results to the Contracting Officer within 3 working days, signed by the testing laboratory employee performing the air monitoring, the employee that analyzed the sample, and the CIH.

5. **Records:**
   a. Completed and signed hazardous waste manifest from treatment or disposal facility.
   b. Certification of Medical Examinations.
   c. Employee training certification.

**PART 2 PRODUCTS**

PAINT REMOVAL PRODUCTS: Submit applicable Material Safety Data Sheets for paint removal products used in paint removal work. Use the least harsh and least toxic product, suitable for the job and acceptable to the Industrial Hygienist.

**PART 3 EXECUTION**

3.1 **PROTECTION**

A. **Notification:** Notify the Architect and Owner 14 days prior to the start of any paint removal work.

B. **Lead Control Area Requirements.**
   1. Establish a lead control area by completely enclosing with containment screens the area or structure where lead-containing paint removal operations will be performed.
   2. Contain removal operations by the use of a negative pressure full containment system with at least one change room and with HEPA filtered exhaust.

C. **Protection of Existing Work to Remain:** Perform paint removal work without damage or contamination of adjacent areas. Where existing work is damaged or contaminated, restore work to its original condition.
D. Boundary Requirements: Provide physical boundaries around the lead control area by roping off the area or providing curtains, portable partitions or other enclosures to ensure that airborne concentrations of lead will not reach 30 micrograms per cubic meter of air outside of the lead control area.

E. Not used.

F. Change Room and Shower Facilities: Provide clean change rooms and shower facilities within the physical boundary around the designated lead control area in accordance with applicable regulations.

G. Mechanical Ventilation System:
   1. Use adequate ventilation to control personnel exposure to lead in accordance with applicable regulations.
   2. To the extent feasible, use fixed local exhaust ventilation connected to HEPA filters or other collection systems, approved by the industrial hygienist. Local exhaust ventilation systems shall be designed, constructed, installed, and maintained in accordance with ANSI Z9.2.
   3. If air from exhaust ventilation is recirculated into the work place, the system shall have a high efficiency filter with reliable back-up filter and controls to monitor the concentration of lead in the return air and to bypass the recirculation system automatically if it fails. Air may be recirculated only where exhaust to the outside is not feasible.

H. Personnel Protection: Personnel shall wear and use protective clothing and equipment as specified herein. Eating, smoking, or drinking is not permitted in the lead control area. No one will be permitted in the lead control area unless they have been given appropriate training and protective equipment.

I. Warning Signs: Provide warning signs at approaches to lead control areas. Locate signs at such a distance that personnel may read the sign and take the necessary precautions before entering the area. Signs shall comply with the applicable regulations.

3.2 WORK PROCEDURES

A. Perform removal of lead-containing paint in accordance with approved lead-containing paint removal plan. Use procedures and equipment required to limit occupational and environmental exposure to lead when lead-containing paint is removed in accordance with applicable regulations,
except as specified herein. Dispose of removed paint chips and associated waste in compliance with Environmental Protection Agency (EPA), federal, state, and local requirements.

B. Personnel Exiting Procedures:
   1. Whenever personnel exist the lead-controlled area, they shall perform the following procedures and shall not leave the work place wearing any clothing or equipment worn during the work day:
      a. Vacuum themselves off.
      b. Remove protective clothing in the decontamination room, and place them in an approved impermeable disposal bag.
      c. Shower.
      d. Change to clean clothes prior to leaving the physical boundary designated around the lead-contaminated job site.
   
C. Monitoring: Monitoring of airborne concentrations of lead shall be in accordance with applicable regulations. Air monitoring, testing, and reporting shall be performed by a CIH or an Industrial Hygiene (IH) Technician who is under the direction of the CIH:
   1. The CIH or the IH Technician under the direction of the CIH shall be on the job site directing the monitoring, and inspecting the lead-containing paint removal work to ensure that the requirements of the Contract have been satisfied during the entire lead-containing paint removal operation.
   2. Take personal air monitoring samples on employees who are anticipated to have the greatest risk of exposure as determined by the CIH. In addition, take air monitoring samples on at least 25 percent of the work crew or a minimum of two employees, whichever is greater, during each work shift.
   3. Submit results of air monitoring samples, signed by the CIH, within 24 hours after the air samples are taken. Notify the Contracting Officer immediately of exposure to lead at or in excess of the action level of 30 micrograms per cubic meter of air outside of the lead control area.
   
D. Monitoring During Paint Removal Work:
   1. Perform personal and area monitoring during the entire paint removal operation. Sufficient area monitoring shall be conducted at the physical boundary to ensure unprotected personnel
are not exposed above 30 micrograms per cubic meter of air at all times. If the outside boundary lead levels are at or exceed 30 micrograms per cubic meter of air, work shall be stopped and the CIH shall immediately correct the condition(s) causing the increased levels and notify the Contracting Officer immediately.

2. The CIH shall review the sampling data collected on that day to determine if condition(s) requires any further change in work methods. Removal work shall resume when approval is given by the CIH. The Contractor shall control the lead level outside of the work boundary to less than 30 micrograms per cubic meter of air at all times. As a minimum, conduct area monitoring daily on each shift in which lead paint removal operations are performed in areas immediately adjacent to the lead control area.

3. For outdoor operations, at least one sample on each shift shall be taken on the downwind side of the lead control area. If adjacent areas are contaminated, clean and visually inspect contaminated areas. The CIH shall certify that the area has been cleaned of lead contamination.

### 3.3 Lead-Containing Paint Removal

A. Remove paint within the areas designated on the drawings in order to completely expose the substrate. Take whatever precautions are necessary to minimize damage to the underlying substrate.

B. Not used.

C. Mechanical Paint Removal and Blast Cleaning: Perform mechanical paint removal and blast cleaning in lead control areas using negative pressure full containments with HEPA filtered exhaust. Collect paint residue and spent grit (used abrasive) from blasting operations for disposal in accordance with EPA, state and local requirements.

D. Outside Lead Paint Removal: Select removal processes to minimize contamination of work areas with lead-contaminated dust or other lead-contaminated debris/waste. Describe the paint removal process in the lead-containing paint removal plan. Perform manual sanding and scraping to the maximum extent feasible.

### 3.4 Surface Preparations

Not used.
3.5 CLEANUP AND DISPOSAL

A. Cleanup: Maintain surfaces of the lead control area free of accumulations of paint chips and dust. Restrict the spread of dust and debris; keep waste from being distributed over the work area. Do not dry sweep or use compressed air to clean up the area. At the end of each shift and when the paint removal operation has been completed, clean the area of visible lead paint contamination by vacuuming with a HEPA filtered vacuum cleaner and wet mopping the area.

B. Certification: The CIH shall certify in writing that the inside and outside the lead control area air monitoring samples are less than 30 micrograms per cubic meter of air, the respiratory protection for the employees was adequate, the work procedures were performed in accordance with applicable regulations, and that there were no visible accumulations of lead-contaminated paint and dust on the worksite. Do not remove the lead control area or roped-off boundary and warning signs prior to the Contracting Officer's receipt of the CIH's certification. Reclean areas showing dust or residual paint chips.

C. Not used.

D. Disposal:

1. Collect lead-contaminated waste, scrap, debris, bags, containers, equipment, and lead-contaminated clothing, which may produce airborne concentrations of lead particles.

2. Store removed paint, lead-contaminated clothing and equipment, and lead-contaminated dust and cleaning debris into U.S. Department of Transportation (49 CFR 178) approved 55-gallon drums. Properly labels each drum to identify the type of waste (49 CFR 172) and the date lead-contaminated wastes were first put into the drum. Complete the Uniform Hazardous Waste Manifest forms. Comply with land disposal restriction notification requirements as required by applicable regulations.

E. Disposal Documentation Submit written evidence that the hazardous waste treatment, storage, or disposal facility (TSD) is approved for lead disposal by the EPA and state or local regulatory agencies. Submit one copy of the completed manifest, signed and dated by the initial transporter in accordance with applicable regulations.

END OF SECTION 02 83 33
SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY
   A. This Section specifies cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes.
   B. See Division 32 Section "Concrete Paving" for sidewalk.

1.2 SUBMITTALS
   A. Product Data: For each type of product indicated.
   B. Design Mixtures: For each concrete mixture.
   C. Shop Drawings: For steel reinforcement. Material test reports and certificates.

1.3 QUALITY ASSURANCE
   A. 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.
      1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
   B. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
      1. ACI 301, "Specification for Structural Concrete," Sections 1 through 5.
      2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
   C. Preinstallation Conference: Conduct conference at Project site.

PART 2 - PRODUCTS

2.1 FORM-FACING MATERIALS
   A. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.
2.2 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.

B. Reinforcing Bars: ASTM A 706/A 706M, Grade 60, deformed (Weldable).

C. Plain-Steel Welded Wire Reinforcement: ASTM A 185, plain, fabricated from as-drawn steel wire into flat sheets.


E. Galvanized-Steel Welded Wire Reinforcement: ASTM A 185, plain, fabricated from galvanized steel wire into flat sheets.

F. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice."

2.3 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:

1. Portland Cement: ASTM C 150, Type I/II. Supplement with the following:
   a. Fly Ash: ASTM C 618, Class C or F.
   b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.


B. Normal-Weight Aggregates: ASTM C 33, graded, nominal maximum coarse-aggregate size as indicated on drawings.

1. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

C. Water: ASTM C 94 and potable.


E. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. 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.
6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

2.4 VAPOR RETARDERS
A. Plastic Vapor Retarder: ASTM E 1745, Class A. Include manufacturer's recommended adhesive or pressure-sensitive tape.

2.5 CURING MATERIALS
A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.
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, dissipating.
F. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, nondissipating, certified by curing compound manufacturer to not interfere with bonding of floor covering.

2.6 RELATED MATERIALS

2.7 CONCRETE MIXTURES
A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
B. Cementitious Materials: Use fly ash, pozzolan, ground granulated blast-furnace slag, and silica fume as needed to reduce the total amount of portland cement, which would otherwise be used, by not less than 40 percent.

C. Proportion normal-weight concrete mixture for foundations, walls, and piers as follows:
   1. Minimum Compressive Strength: 4000 psi at 28 days.
   2. Maximum Water-Cementitious Materials Ratio: 0.50.
   3. Slump Limit: 8 inches for concrete with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch.

2.8 FABRICATING REINFORCEMENT
   A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.9 CONCRETE MIXING
   A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and ASTM C 1116, and furnish batch ticket information.
      1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 FORMWORK
   A. Design, erect, shore, brace, and maintain formwork according to ACI 301 to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.

   B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

   C. Chamfer exterior corners and edges of permanently exposed concrete.

3.2 EMBEDDED ITEMS
   A. Place and secure anchorage devices and other embedded items required for adjoining work that is 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. Plastic Vapor Retarders: Place, protect, and repair vapor retarders according to ASTM E 1643 and manufacturer's written instructions.

   1. Lap joints **6 inches** and seal with manufacturer's recommended tape.

3.4 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for placing 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: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.

C. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated, and as recommended by ACI publications. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows:

   1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of **1/8 inch**. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool 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: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated, and as recommended by ACI publications.

3.6 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

B. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes...
of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.

1. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.

C. Cold-Weather Placement: Comply with ACI 306.1.

D. Hot-Weather Placement: Comply with ACI 301.

3.7 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x 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. Cure concrete according to ACI 308.1, by one or a combination of the following methods:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days.
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.

a. After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer unless manufacturer certifies curing compound will not interfere with bonding of floor covering used on Project.

4. Curing and Sealing Compound: Apply uniformly to floors and slabs 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.
3.8 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.

3.9 FIELD QUALITY CONTROL

A. Testing and Inspecting: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.

1. Testing Services: Tests shall be performed according to ACI 301.

END OF SECTION 03 30 00
SECTION 04 43 00 - STONE MASONRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes the following applications of stone masonry:
   1. Anchored to concrete backup.
   2. Anchored to unit masonry backup.

B. Related Sections:
   1. Division 01 Section “Alternates” and Division 03 Section “Cast-in-Place Concrete” for work related to concrete stair base.
   2. Division 04 Section "Masonry Cleaning and Restoration" for work related to existing stone masonry.
   3. Division 05 Section “Decorative Metal Railings” for work related to new railings.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.
   1. For stone varieties proposed for use on Project, include test data indicating compliance with physical properties specified or required by referenced ASTM standards.

B. Samples:
   1. For each stone type indicated.
   2. For each color of mortar required.

1.3 PROJECT CONDITIONS

A. Protection of Stone Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work.

B. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

   1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 4 deg C (40 deg F) and above and will remain so until masonry has dried.

1.4 MOCK-UPS

A. Clean and point an area of existing stone approximately 4-feet by 4-feet. Field locate test area with Owner and Architect prior to proceeding. This area will become the benchmark for matching new stone to existing stone.

PART 2 - PRODUCTS

2.1 LIMESTONE

A. Limestone: Comply with ASTM C 568.

1. Products: Provide stone to match characteristics of existing stone, including but not limited to, color, texture, grain, pattern, and surface tooling.

2.2 MORTAR MATERIALS

A. Portland Cement: ASTM C 150, 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. Low-Alkali Cement: Not more than 0.60 percent total alkali when tested according to ASTM C 114.

B. Hydrated Lime: ASTM C 207, Type S.

C. Masonry Cement: ASTM C 91.

D. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes. Use only pigments with a record of satisfactory performance in stone masonry mortar.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

   a. Davis Colors; True Tone Mortar Colors.
   b. Lanxess Corporation; Bayferrox Iron Oxide Pigments.
   c. Solomon Colors; SGS Mortar Colors.
E. Colored Cement Product: Packaged blend made from portland cement and lime or colored masonry cement and mortar pigments, all complying with specified requirements, and containing no other ingredients.

1. Formulate blend as required to produce color indicated or, if not indicated, as selected from manufacturer's standard colors.

2. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

   a. Colored Portland Cement-Lime Mix:
      1) Holcim (US) Inc.; Rainbow Mortamix Custom Color Cement/Lime.
      2) Lafarge North America; Eaglebond.
      3) Lehigh Cement Company; Lehigh Custom Color Portland/Lime Cement.

   b. Colored Masonry Cement:
      1) Essroc, Italcementi Group; Brixment-in-Color.
      2) Holcim (US) Inc.; Rainbow Mortamix Custom Color Masonry Cement.
      3) Lehigh Cement Company; Lehigh Custom Color Masonry Cement.

F. Aggregate: ASTM C 144 and as follows:

1. For pointing mortar, use aggregate graded with 100 percent passing 1.18-mm (No. 16) sieve.

2. White Aggregates: Natural white sand or ground white stone.

3. Colored Aggregates: Natural-colored sand or ground marble, granite, or other sound stone; of color necessary to produce required mortar color.

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

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

   b. Bonsal.
   c. Bostik Findley Inc.
   d. C-Cure.
   e. Custom Building Products.
   f. DAP Inc.
   g. Laticrete International, Inc.
   h. MAPEI Corp.
   i. Summitville Tiles, Inc.
   j. TEC Specialty Construction Brands; H. B. Fuller Company.
H. Water: Potable.

2.3 VENEER ANCHORS

A. Materials:
   2. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304.

B. Wire Veneer Anchors: Wire ties formed from W1.7 or 3.8-mm- (0.148-inch-) diameter, stainless-steel wire.

2.4 EMBEDDED FLASHING MATERIALS

A. Metal Flashing: Provide metal flashing, where flashing is exposed or partly exposed and where indicated, complying with SMACNA's "Architectural Sheet Metal Manual and as follows:

   1. Stainless Steel: ASTM A 240/A 240M, Type 304, 0.4 mm (0.016 inch) thick.

B. Flexible Flashing: For flashing not exposed to the exterior, use the following unless otherwise indicated:

   1. Rubberized-Asphalt Flashing: Composite flashing product consisting of a pliable, adhesive rubberized-asphalt compound, bonded to a high-density, cross-laminated polyethylene film to produce an overall thickness of not less than 0.8 mm (0.030 inch).

   a. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

      1) Advanced Building Products Inc.; Peel-N-Seal.
      2) Carlisle Coatings & Waterproofing; CCW-705-TWF Thru-Wall Flashing.
      3) Dur-O-Wal, a Dayton Superior Company; Dur-O-Barrier-44.
      5) Heckmann Building Products Inc.; No. 82 Rubberized-Asphalt Thru-Wall Flashing.
      6) Hohmann & Barnard, Inc.; Textroflash.
      7) Polyguard Products, Inc.; Polyguard 300.
      8) Polytite Manufacturing Corporation; Poly-Barrier Self-Adhering Wall Flashing.
2.5 MISCELLANEOUS MASONRY ACCESSORIES

A. Cementitious Dampproofing: Cementitious formulations that are recommended by ILI and that are nonstaining to stone, compatible with joint sealants, and noncorrosive to veneer anchors and attachments.

B. Asphalt Dampproofing: Cut-back asphalt complying with ASTM D 4479, Type I or asphalt emulsion complying with ASTM D 1227, Type III or IV.

C. Weep Hole/Vent Products: Use one of the following unless otherwise indicated:
   1. Wicking Material: Absorbent rope, made from UV-resistant synthetic fiber, 6 to 10 mm (1/4 to 3/8 inch) in diameter, in length required to produce 50-mm (2-inch) exposure on exterior and 450 mm (18 inches) in cavity behind stone masonry. Use only for weep holes.
   2. Round Plastic Tubing: Medium-density polyethylene, 10-mm (3/8-inch) OD by thickness of stone masonry.

2.6 MASONRY CLEANERS

A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar and grout stains, efflorescence, and other new construction stains from stone masonry surfaces without discoloring or damaging masonry surfaces; expressly approved for intended use by cleaner manufacturer and stone producer.
   1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      a. Diedrich Technologies, Inc.
      b. Dominion Restoration Products.
      c. EaCo Chem, Inc.
      d. Hydrochemical Techniques, Inc.
      e. Prosoco, Inc.

2.7 MORTAR MIXES

A. General: Do not use admixtures unless otherwise indicated.
   1. Do not use calcium chloride.
   2. Limit cementitious materials in mortar to portland cement and lime.
   3. Mixing Pointing Mortar: Thoroughly mix cementitious and aggregate materials together before adding water. Then mix again, adding only enough water to produce a damp, unworkable mix that will retain its form when pressed into a ball. Maintain mortar in this dampened condition for one to two hours. Add remaining water in small
portions until mortar reaches desired consistency. Use mortar within 30 minutes of final mixing; do not retemper or use partially hardened material.

   1. Mortar for Setting Stone:
      a. Type S or Type N as required to be softer than stone provided.
   2. Mortar for Pointing Stone:
      a. Type N or Type O as required to be softer than stone provided.

C. Latex-Modified Portland Cement Setting Mortar: Proportion and mix portland cement, aggregate, and latex additive to comply with latex-additive manufacturer's written instructions.

D. Cement-Paste Bond Coat: Mix either neat cement and water or cement, sand, and water to a consistency similar to that of thick cream.
   1. For latex-modified portland cement setting-bed mortar, substitute latex admixture for part or all of water, according to latex-additive manufacturer's written instructions.

E. 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 by weight.

2.8 FABRICATION

A. Cut stone to produce pieces of thickness, size, and shape indicated, including details on Drawings. Dress joints (bed and vertical) straight and at right angle to face unless otherwise indicated.

B. Gage backs of stones for adhered veneer if more than 522 sq. cm (81 sq. in.) in area.

C. Shape stone for type of masonry (pattern) as required to match existing condition, layout, pattern, and dimension.

D. Finish exposed faces and edges of stone to comply with requirements indicated for finish and to match approved samples and mockups.

PART 3 - EXECUTION

3.1 PREPARATION

A. Coat concrete and unit masonry backup with asphalt dampproofing.
3.2 SETTING OF STONE MASONRY, GENERAL

A. Perform necessary field cutting and trimming as stone is set.
   1. Use power saws to cut stone that is fabricated with saw-cut surfaces.
   2. Use hammer and chisel to split stone that is fabricated with split surfaces.

B. Sort stone before it is placed in wall to remove stone that does not comply with requirements relating to aesthetic effects, physical properties, or fabrication, or that is otherwise unsuitable for intended use.

C. Arrange stones with color and size variations uniformly dispersed for an evenly blended appearance.

D. Maintain uniform joint widths except for variations due to different stone sizes and where minor variations are required to maintain bond alignment if any. Lay walls with joints not less than 6 mm (1/4 inch) at narrowest points or more than 10 mm (3/8 inch) at widest points.

E. Provide sealant joints of widths and at locations indicated.
   1. Keep sealant joints free of mortar and other rigid materials.
   2. Sealing joints is specified in Division 07 Section "Joint Sealants."

F. Install embedded flashing and weep holes at shelf angles, lintels, ledges, other obstructions to downward flow of water in wall, and where indicated.
   1. At multiwythe masonry walls, including cavity walls, extend flashing through stone masonry, turned up a minimum of [100 mm (4 inches)] [200 mm (8 inches)] [300 mm (12 inches)] [400 mm (16 inches)], and extend into inner wythe.
   2. Extend sheet metal flashing 13 mm (1/2 inch) beyond face of masonry at exterior and turn flashing down to form a drip.
   3. Cut flexible flashing flush with face of wall after masonry wall construction is completed.

G. Coat limestone with cementitious dampproofing as follows:
   1. Stone at Grade: Beds, joints, and back surfaces to at least 300 mm (12 inches) above finish-grade elevations.
   2. Stone Extending below Grade: Beds, joints, back surfaces, and face surfaces below grade.

H. Place weep holes and vents in joints where moisture may accumulate, including at base of cavity walls, above shelf angles, and at flashing.
   1. Space weep holes 400 mm (16 inches) o.c.
   2. Trim wicking material used in weep holes flush with outside face of wall after mortar has set.
3.3 CONSTRUCTION TOLERANCES

A. Variation from Plumb: For vertical lines and surfaces, do not exceed 6 mm in 3 m (1/4 inch in 10 feet), 10 mm in 6 m (3/8 inch in 20 feet), or 13 mm in 12 m (1/2 inch in 40 feet) or more. For external corners, expansion joints, control joints, and other conspicuous lines, do not exceed 6 mm in 6 m (1/4 inch in 20 feet) or 13 mm in 12 m (1/2 inch in 40 feet) or more.

B. Variation from Level: For bed joints and lines of copings and other conspicuous lines, do not exceed 6 mm in 6 m (1/4 inch in 20 feet) or 13 mm in 12 m (1/2 inch in 40 feet) or more.

C. Variation of Linear Building Line: For position shown in plan, do not exceed 13 mm in 6 m (1/2 inch in 20 feet) or 19 mm in 12 m (3/4 inch in 40 feet) or more.

3.4 INSTALLATION OF ANCHORED STONE MASONRY

A. Anchor stone masonry to concrete with stainless steel anchors unless otherwise indicated. Embed anchors as indicated on Drawings.

B. Anchor stone masonry to unit masonry with individual wire veneer anchors unless otherwise indicated. Embed anchors in unit masonry mortar joints or grouted cells for distance at least one-half of unit masonry thickness.

C. Embed veneer anchors in mortar joints of stone masonry at least halfway, but not less than 38 mm (1-1/2 inches), through stone masonry and with at least 16-mm (5/8-inch) cover on outside face.

D. Space anchors not more than 400 mm (16 inches) o.c. vertically and 600 mm (24 inches) o.c. horizontally. Install additional anchors within 300 mm (12 inches) of openings, sealant joints, and perimeter at intervals not exceeding 300 mm (12 inches).

E. Set stone in full bed of mortar with full head joints unless otherwise indicated. Build anchors into mortar joints as stone is set.

F. Rake out joints for pointing with mortar to depth of not less than 19 mm (3/4 inch). Rake joints to uniform depths with square bottoms and clean sides.

3.5 POINTING

A. Prepare stone-joint surfaces for pointing with mortar by removing dust and mortar particles. Where setting mortar was removed to depths greater than surrounding areas, apply pointing mortar in layers not more than 10 mm (3/8 inch) deep until a uniform depth is formed.

B. Point stone joints by placing and compacting pointing mortar in layers not more than 10 mm (3/8 inch) deep. Compact each layer thoroughly and allow to become thumbprint hard before applying next layer.
C. Tool joints, when pointing mortar is thumbprint hard, with a smooth jointing tool to produce the following joint profile:

1. Joint Profile: Match existing joint profile, as accepted in mock-up.

3.6 ADJUSTING AND CLEANING

A. In-Progress Cleaning: Clean stone masonry as work progresses. Remove mortar fins and smears before tooling joints.

B. Final Cleaning: After mortar is thoroughly set and cured, clean stone masonry as follows:

1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
2. Test cleaning methods on mockup; leave one-half of panel uncleaned for comparison purposes.
3. Protect adjacent stone and nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent, polyethylene film, or waterproof masking tape.
4. Wet wall surfaces with water before applying cleaner; remove cleaner promptly by rinsing thoroughly with clear water.
5. Clean stone masonry by bucket and brush hand-cleaning method described in BIA Technical Note No. 20 Revised II, using job-mixed detergent solution.
6. Clean stone masonry with proprietary acidic cleaner applied according to manufacturer's written instructions.
7. Clean limestone masonry to comply with recommendations in ILI's "Indiana Limestone Handbook."

3.7 EXCESS MATERIALS AND WASTE

A. Disposal as Fill Material: Dispose of clean masonry waste, including mortar and excess or soil-contaminated sand, by crushing and mixing with fill material as fill is placed.

1. Do not dispose of masonry waste as fill within 450 mm (18 inches) of finished grade.
SECTION 04 90 00 - MASONRY CLEANING AND RESTORATION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes repair, repointing, and surface cleaning and repointing of the following masonry substrates:
   1. Stone.
   2. Ornamental stone.

B. Related Sections:
   1. Division 01 Section “Unit Prices.”
   2. Division 01 Section “Alternates.”
   3. Division 01 Section “Historic Treatment Procedures.”

1.2 SUBMITTALS

A. Restoration Program: Written narrative describing each type of restoration and cleaning process to be employed. Also include description of site logistics, protection of surrounding surfaces on buildings and site, and materials, methods, and equipment to be used for each phase of the Work.

B. Product Data: For each product indicated, including manufacturer's application recommendations for each.

C. Samples: For each kind of new exposed masonry, mortar, and patching material to be used for replacing existing materials. Include in each set of samples the full range of colors and textures to be expected in the completed Work.

D. Qualification data of restoration specialist. Include a list of completed projects with addresses, names of Architects and Owners, and kind of restoration and cleaning work involved.

1.3 QUALITY ASSURANCE

A. Restoration Specialist: Engage an experienced masonry restoration and cleaning. At Contractor's option, the work may be divided between two specialist firms: one for cleaning work and one for repair work.
1. Qualifications include at least ten years experience in the types of work required for this Project.

B. Field-Constructed Mockups: Prepare the following sample panels on the building where directed by Architect. Retain acceptable panels in an undisturbed condition, suitably marked, during construction as a standard for judging the completed Work, including but not limited to level of cleanliness, workmanship, finish colors, and texture.

1. Cleaning: Areas as designated on site by Owner and Architect.
2. Repointing: Two separate sample areas approximately 3 feet high by 6 feet wide for each type of repointing required, one for demonstrating mortar removal and the other for pointing.
3. Repair with Composite Patch: Area as designated on site by Owner and Architect.

1.4 PROJECT-SITE CONDITIONS

A. Proceed with the work only when forecasted weather conditions are favorable.

1. Do not perform exterior wet work unless the air temperature is at least 5 deg C (40 deg F) and rising.
2. Do not begin cleaning, patching, or repairing when there is any likelihood of frost or freezing.
3. Do not begin cleaning unless either the air or the surface temperature is at least 7 deg C (45 deg F) and rising; otherwise, provide approved means for maintaining a 7 deg C (45 deg F) and rising temperature of the air and materials during, and for 48 hours subsequent to, cleaning.
4. Perform cleaning and rinsing of the exterior only during daylight hours.

PART 2 - PRODUCTS

2.1 MATERIALS – POINTING

A. Portland Cement: ASTM C 150, Type I or Type II.

1. Provide nonstaining white cement complying with staining requirement of ASTM C 91 for not more than 0.03 percent water-soluble alkali.

B. Hydrated Lime: ASTM C 207, Type S.

C. Aggregate for Mortar: ASTM C 144, unless otherwise indicated.

1. Colored Mortar Aggregate: Natural or manufactured sand selected to produce mortar color indicated.
2. Match size, texture and gradation of existing mortar as closely as possible.

D. Colored Mortar Pigment: Natural and synthetic iron oxides and chromium oxides, compounded for mortar mixes.

E. Water: Clean, free of oils, acids, alkalis, and organic matter.

F. Mortar Mixes: Measure cementitious and aggregate material in a dry condition by volume or equivalent weight and mix in a clean mechanical mixer. Provide as follows:

1. Perform analysis of existing mortar to determine composition. For repointing mortar, match color and texture.
2. Mixing Pointing Mortar: Mix dry materials, then add only enough water to produce a damp, unworkable mix that will retain its form when pressed into a ball. Maintain mortar in this dampened condition for 1 to 2 hours. Add remaining water in small portions until reaching mortar of desired consistency. Use mortar within 30 minutes of final mixing; do not retemper or use partially hardened material.
3. Colored Mortar Pigment: Do not exceed pigment-to-cement ratio of 1:10, by weight.
4. Do not use admixtures of any kind in mortar, unless otherwise indicated.
5. Pointing Mortar for Stone: Type N.
   a. Add colored mortar pigment to product mortar colors required.
6. Rebuilding Mortar: Same as pointing mortar.

2.2 MATERIALS – CLEANING

A. Water: Clean, free of oils, acids, alkalis, and organic matter.

B. Job-Mixed Detergent Solution: Mix 3 oz. of trisodium phosphate (TSP), 1 oz. of laundry detergent (Tide, All, etc.), 1 quart of 5 percent sodium hypochlorite (bleach), and 3 quarts of warm water for each gallon of solution.

C. Nonacidic Gel Cleaner: Manufacturer's standard nonacidic gel, containing detergents and chelating agents, formulated for cleaning masonry surfaces.

1. Available Product: Subject to compliance with requirements, provide Sure Klean 942 Masonry Cleaner, ProSoCo, Inc.

D. Alkaline Prewash Cleaner: Manufacturer's standard alkaline cleaner for prewash followed by the manufacturer's recommended neutralizing afterwash.
1. Available Product: Subject to compliance with requirements, provide Sure Klean 766 Prewash, ProSoCo, Inc.

E. Liquid Strippable Masking Agent: Manufacturer's standard product for protecting surfaces from acidic and alkaline masonry cleaners.

1. Available Products: Subject to compliance with requirements, provide one of the following:
   a. Diedrich Acid Guard, Diedrich Technologies, Inc.
   b. Sure Klean Acid Stop, ProSoCo, Inc.

F. Spray Equipment for Water: Equipment capable of controlled spray application of water at pressures, volume, and temperature indicated, with not less than a 15-degree fan-shaped spray tip.

2.3 MATERIALS – MASONRY REPAIRS

A. Patching:

1. Available Manufacturers:
   a. E.I. DuPont de Nemours & Co., Inc.
   b. Sika Corporation.
   c. Thoro System Products.

2. Patching Systems: Use system recommended for field condition.
   a. Composite Patching: Manufacturer's standard system of applying multiple coats of composite material to reconstruct missing stone surfaces.
   b. Through-Surface Patching: Manufacturer's standard system of adhesive grout and countersunk pins to retain delaminated stone and to repair surfaces which are not suitable for composite patching.


4. Lime: ASTM C 207, Type S, high plasticity.

5. Sand: Local natural sand, graded; or, masonry mortar conforming to ASTM C 144.

6. Stone: Include stone removed from the area to be patched; prepare stone as recommended by manufacturer.

7. Pigments: Dry pigments may be used when available stone from project site is not sufficient to produce a color match. Use stable fade-proof mineral oxide pigments, either natural- or synthetic-fade.

8. Water: Clean and potable.

9. Additives: Manufacturer's recommended acrylic additives which are non-reemulfiable.

10. Mixes: Slurry coat, scratch coat, and finish coat per manufacturer's recommendation.

11. Pins and other anchors: Stainless steel, Type 304.

B. Stone Replacement:

1. Stone: See Division 04 Section “Stone Masonry”.

MASONRY CLEANING AND RESTORATION 04 90 00 - 4
2. Mortar: As specified herein.
   a. For “Dutchmen”, provide polymer admixture as recommended by manufacturer for intended installation (Basis of Design Manufacturer: Laticrete).
3. Metal anchors: Stainless steel, Type 304.

PART 3 - EXECUTION

3.1 PROTECTION, GENERAL

A. Comply with manufacturer's written instructions for precautions and effects of products and procedures on adjacent building materials, components, and vegetation.

B. Comply with requirements in Division 01 Section “Temporary Facilities and Controls.”

C. Cover adjacent surfaces with materials that are proven to resist chemical cleaners selected for Project unless chemicals being used will not damage adjacent surfaces. Use covering materials that contain only waterproof, UV-resistant adhesives. Apply masking agents to comply with manufacturer's written instructions. Do not apply liquid masking agent to painted or porous surfaces. When no longer needed, promptly remove masking to prevent adhesive staining.

D. Do not clean surfaces during winds of sufficient force to spread cleaning solutions to unprotected surfaces.

E. Ensure that supervisory personnel are present when work begins and during its progress.

F. Protect persons, motor vehicles, surrounding surfaces of building whose masonry surfaces are being restored, building site, plants, and surrounding buildings from injury resulting from masonry restoration work.

G. Protect landscape work adjacent to or within work areas as follows:
   1. Provide barriers to protect tree trunks.
   2. Bind spreading shrubs.
   3. Use coverings that allow plants to breathe and remove coverings at the end of each day. Do not cover plant material with a waterproof membrane for more than 8 hours at a time.
   4. Set scaffolding and ladder legs away from plants.

H. Existing Drains: Prior to the start of work or any cleaning operations, test drains and other water removal systems to ensure that drains and systems are functioning properly. Notify Architect immediately of drains or systems that are stopped or blocked. Do not begin Work of this Section until the drains are in working order.
1. Provide a method to prevent solids including stone or mortar residue from entering the drains or drain lines. Clean out drains and drain lines that become blocked or filled by sand or any other solids because of work performed under this Contract.

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

I. Evaluate water-tightness of existing masonry. Take precautions to ensure that the water does not penetrate the surface, including joints.

3.2 CLEANING, GENERAL

A. 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.

1. Rinse off chemical residue and soil by working upwards from bottom to top of each treated area at each stage or scaffold setting.

B. Match mock-up samples of existing materials that have been cleaned and identified for acceptable cleaning levels. Avoid overcleaning to prevent damage to existing materials during cleaning.

C. Where Work requires existing features to be removed, cleaned, and reused, perform these operations without damage to the material itself, to adjacent materials, or to the substrate.

D. Notify Architect and Owner's Project Manager of visible changes in the integrity of material or components whether due to environmental causes including biological attack, UV degradation, freezing, or thawing; or due to structural defects including cracks, movement, or distortion.

1. Submit photographs and written description of existing field conditions.

2. Do not proceed with the work in question until directed by Owner's Project Manager.

E. Removing Plant Growth: Remove plant, moss and shrub growth completely from masonry surfaces by cutting at roots and allowing to dry as long as possible prior to removal. Remove loose soil or debris from open masonry joints to whatever depth it occurs.

1. Apply ammonium sulfamate or another acceptable root-killing material to plant roots according to manufacturer's instructions.

F. Removing Accumulated Bird Excrement:

1. General: Before disturbing accumulated bird excrement, consult with an occupational medicine physician, industrial hygienist, and authorities having jurisdiction to
determine acceptable removal procedures and appropriate protective measures for personnel.

2. Removing Bird Excrement: Treat bird excrement before its removal as required by authorities having jurisdiction.
   a. Prior to removal, dampen excrement to prevent it from becoming airborne.
   b. Use only nonmetallic tools (plastic spatulas and brushes with natural fiber or nylon bristles, or their equivalent) to remove excrement.
   c. Collect removed excrement and legally disposed of off site.
   d. Perform bird excrement removal work from the outside of the building with windows and other openings in the building closed.

G. Water Spray Pressures: Comply with the following requirements:

1. Low-Pressure Spray: 100 to 400 psi; 3 to 6 gal. per minute.
2. Medium-Pressure Spray: 400 to 800 psi; 3 to 6 gal. per minute.
3. High-Pressure Spray: 800 to 1200 psi; 3 to 6 gal. per minute.

H. Non-ionic Detergent Cleaning: Clean masonry with a non-ionic detergent solution as follows:

1. Wet masonry with cold water applied by low-pressure spray.
2. Scrub masonry with detergent solution using medium-soft non-metallic brushes until soil is thoroughly dislodged and can be removed by rinsing.
3. Rinse masonry with cold water applied by medium-pressure spray.

I. Test rinse water residue on masonry surface with pH-indicating test strips and record results daily. Where test indicates residual acidity or alkalinity on surface, re-rinse/clean with clear water; re-test masonry surface.

J. After completion of masonry cleaning and restoration, clean doors, frames, windows, glass, and other surfaces adjacent to the project area.

3.3 REPOINTING MASONRY

A. Joint Cutting and Raking:

1. Cut out old mortar to indicated depth and condition by hand using hammer and chisel without causing damage to adjacent materials, including overcuts to adjacent surfaces.
2. Rake out mortar by hand to a depth equal to 2-1/2 times the joint width but not less than 1/2 inch from face of brick and 3/4 inch from face of limestone, as required to expose sound mortar. Leave clean joints with bond surfaces of masonry exposed and reveals with square backs.
3. Rinse joint surfaces to remove dust and mortar particles, leaving surfaces damp but free of standing water.
4. Remove all metal fittings such as nails, brackets, and clips on both horizontal and vertical surfaces.
5. Carefully clean out the prepared face with soft non-metallic bristle brush or blow joints clean with low-pressure compressed air (40-60 psi).

B. Filling Joints:

1. Dampen masonry surfaces and joints to control suction and evaporation before placing repointing mortars. Assure that there is no free water present prior to repointing.
2. Repoint by hand. Apply pointing mortar first to areas where existing mortar was removed to depths greater than surrounding areas. After joints have been filled to a uniform depth, place remaining pointing mortar in successive layers not more than 3/8-inch deep.
3. Compact each layer and allow it to become thumbprint hard before applying the next layer.
4. Fill joints so that they are slightly recessed from the masonry face. Do not leave a joint which is visually wider than the actual historical appearance.
5. Continuously keep all excess and spilled mortar brushed off the faces of masonry, ledges, and other surfaces before it sets in or stains the work.

C. Joint Finishing and Curing:

1. When mortar is thumbprint hard, tool joints to match original appearance of joints, including texture; do not featheredge joints.
2. Damp-cure mortar for 72 hours.
3. Protected finished work from direct sun and rain until the face has dried and hardened.

D. Final Cleaning:

1. After mortar has fully hardened, thoroughly clean exposed masonry using stiff nylon or bristle brushes and clean water, spray-applied at a low pressure.
2. Not Acceptable: Use of metallic scrapers or brushes; use of acid or alkali cleaning agents.

MASONRY REPAIRS

A. General: Field assess existing stone and identify which repair method will be applied to each area of damaged stone.

B. Patching:

1. Determine extent of damage to be repaired.
2. Cut or chip out all loose stone with hammer and cold chisel to a minimum thickness of ½-inch. Undercut stone so that patch will bond firmly.
3. Composite Patch: Proceed per manufacturer’s written instructions.
4. Through-Surface Patch: Proceed per manufacturer's written instructions.
5. Assure that patch material does not extend continuously between separate masonry units.
6. Finish the surface repair with the manufacturer’s recommended method for matching the texture of existing adjacent masonry, including tool marks and patterns if applicable.

C. Removing and Replacing Deteriorated Stone Masonry:

1. Field assess project areas with Owner and Architect to verify which existing stone will be replaced and which will be repaired with a “Dutchman” (new or salvaged stone fitted into existing stone façade).
   a. As much as possible, use salvaged stone. New stone shall match existing.
   b. Field measure stone required prior to fabrication.
2. Carefully remove by hand the shifted, damaged, spalled or deteriorated stonework.
3. Cleanly cut out damaged portion by hand in a manner to permit patching or replacement with full-size units. Remove mortar, loose particles, and other debris in preparation for resetting.
4. For installation of “Dutchman”: Provide mechanically locking anchors in addition to adhesive and mortar. Install not less one anchor for every two square feet of stone face and no fewer than two anchors per stone.
5. Thoroughly wet the cavity with water; dampen the new or salvaged stone with water.
6. Spread a ½-inch thick mortar bed into the open cavity. Butter vertical joints for full width before setting; set unit(s) in full bed of mortar unless otherwise indicated.
7. Fill, tool, and repoint new joints to comply with specified requirements for repointing masonry, except that joints shall be raked before the mortar sets. Clean excess mortar as work progresses.
8. Perform final cleaning to comply with specified requirements for repointing masonry.

END OF SECTION 04 90 00
SECTION 05 73 00 - DECORATIVE METAL RAILINGS

PART 1 - GENERAL

1.1 SUMMARY
A. This Section includes the following:
   1. Steel and iron ornamental railings.
B. Related Work: Division 09 Section, “Exterior Painting”.

1.2 PERFORMANCE REQUIREMENTS
A. Structural Performance: Provide railings capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
   1. Handrails:
      a. Uniform load of 0.73 kN/m (50 lbf/ft.) applied in any direction.
      b. Concentrated load of 0.89 kN (200 lbf) applied in any direction.
      c. Uniform and concentrated loads need not be assumed to act concurrently.
B. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

1.3 SUBMITTALS
A. Product Data: For railings assembled from standard components, grout, anchoring cement, and paint products.
B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other Work.
   1. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
C. Samples: For each exposed finish required.
D. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, according to ASTM E 894 and ASTM E 935.
1.4 QUALITY ASSURANCE

A. Product Options: Information on Drawings and in Specifications establishes requirements for system's aesthetic effects and performance characteristics. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval.

PART 2 - PRODUCTS

2.1 PRODUCTS

A. Manufacturers: Subject to compliance with requirements, provide Basis-of-Design products specified or comparable product by one of the following manufacturers, subject to approval by Architect and Owner. Substitution request must be made during the bidding period; substitutions will not be considered after bids are received.

1. Steel and Iron Ornamental Railings:
   b. Blum, Julius & Co., Inc.
   c. Livers Bronze Co.

B. Basis-of-Design:

1. Manufacturer: Julius Blum & Co., Inc.
2. Handrail: 4441 with straight lamb’s tail fitting as indicated (S).
3. Starting Post: 345L (1-1/2-inch square) with base 369.
5. Top Channel and Bottom Rail: Manufacturer’s standard square profile suitable for indicated assembly; side dimension shall be 3/4-inch.
   a. Provide metal filler between top rail and top of ornamental collar.
6. Configuration of Railing Assembly: As indicated on Drawings.

C. General: Provide anchor sleeves, channels, fasteners, and other components and accessories required for a complete installation.

D. Railing Assembly: Comply with ASTM E985 and requirements of authorities having jurisdiction.

1. Allow for expansion and contraction of members and building movement without damage to connections or members.

2. Provide anchors and other components as required to attach to structure, made of same materials as railing components unless otherwise indicated. Where exposed fasteners are unavoidable, prove flush countersunk fasteners.
   a. For anchorage to masonry, provide post inserts to be embedded in masonry.
3. Provide slip-on or non-weld mechanical fittings to join lengths, seal open ends, and conceal exposed mounting bolts and nuts, including but not limited to elbows, T-shapes, splice connectors, flanges, escutcheons, and brackets.

4. Spindles: Tack weld indicated ornamental collar to spindle post.

2.2 METALS

A. Brackets, Flanges, and Anchors: Same metal and finish as supported rails, unless otherwise indicated.

B. Steel and Iron:

1. Tubing: ASTM A 500 (cold formed) or ASTM A 513, Type 5 (mandrel drawn).
3. Plates, Shapes, and Bars: ASTM A 36/A 36M.
4. Castings: Either gray or malleable iron, unless otherwise indicated.
   a. Gray Iron: ASTM A 48/A 48M, Class 30, unless another class is indicated or required by structural loads.
   b. Malleable Iron: ASTM A 47/A 47M.

2.3 MISCELLANEOUS MATERIALS

A. Fasteners: Provide concealed fasteners, unless exposed fasteners are unavoidable.

2. Dissimilar Metals: Type 304 stainless-steel fasteners.

B. Zinc-Rich Primer: Complying with SSPC-Paint 20 or SSPC-Paint 29 and compatible with materials specified in Division 09 Section “Exterior Painting”.

C. Grout and Anchoring Cement: Factory-packaged, nonshrink, nonmetallic grout complying with ASTM C 1107, or water-resistant, nonshrink, anchoring cement; recommended by manufacturer for exterior use.

2.4 FABRICATION

A. General: Fabricate railings to comply with design, dimensions, and details indicated, but not less than that required to support structural loads.

B. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.
C. Mechanical Connections: Connect members with concealed mechanical fasteners and fittings.

D. Form changes in direction by bending.

E. Form curves by bending in jigs to produce uniform curvature; maintain cross section of member throughout bend without cracking or otherwise deforming exposed surfaces.

F. Close exposed ends of hollow railing members with prefabricated end fittings.

G. Provide wall returns at ends of wall-mounted handrails, unless otherwise indicated.

H. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect railing members to other work, unless otherwise indicated.

2.5 FINISHES

A. Steel and Iron:
   1. Shop-Primed Steel Finish: Prepare surfaces to comply with SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning" and apply primer to comply with SSPC-PA 1.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Perform cutting, drilling, and fitting required for installing railings. Set railings accurately in location, alignment, and elevation.
   1. Set posts plumb within a tolerance of 2 mm in 1 m (1/16 inch in 3 feet).
   2. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 5 mm in 3 m (1/4 inch in 12 feet).
   3. Carefully align extrusions and cast fittings, which may have different tolerances, so to provide properly matched butt joints.

B. Anchor posts in concrete by inserting into core-drilled holes and grouting annular space.

C. Touchup Painting: Immediately after erection, clean abraded areas and paint exposed areas with same material as used for shop painting.

END OF SECTION 05 73 00
SECTION 0792 00 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Silicone joint sealants.
   2. Urethane joint sealants.

B. Related Work: Division 32 Section “Concrete Paving”.

1.2 PRECONSTRUCTION TESTING

A. Preconstruction Compatibility and Adhesion Testing: Submit to joint-sealant manufacturers eight samples of materials that will contact or affect joint sealants. Use manufacturer's standard test method to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.


1.3 SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Samples: For each kind and color of joint sealant required.

C. Joint-Sealant Schedule: Include the following information:

   1. Joint-sealant application, joint location, and designation.
   2. Joint-sealant manufacturer and product name.

D. Product test reports.

E. Preconstruction compatibility and adhesion test reports.
F. Preconstruction field-adhesion test reports.
G. Field-adhesion test reports.
H. Warranties.

1.4 QUALITY ASSURANCE
A. Testing Agency Qualifications: Qualified according to ASTM C 1021 to conduct the testing indicated.

1.5 WARRANTY
A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

B. Special Manufacturer's Warranty: Manufacturer's standard form in which joint-sealant manufacturer agrees to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

1.6 PROJECT SITE CONDITIONS
A. Do not perform work on wet surfaces.
B. Do not begin work unless surface temperature is at least 20 degrees F and rising.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL
A. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

1. Suitability for Immersion in Liquids. Where sealants are indicated for Use I for joints that will be continuously immersed in liquids, provide products that have undergone
testing according to ASTM C 1247. Liquid used for testing sealants is deionized water, unless otherwise indicated.

B. Stain-Test-Response Characteristics: Where sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

2.2 SILICONE JOINT SEALANTS

A. Mildew-Resistant Silicone Joint Sealant: ASTM C 920.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. BASF Building Systems.
      b. Pecora Corporation.
      c. Sika Corporation; Construction Products Division.
      d. Tremco Incorporated.
   2. Type: Single component (S).
   3. Grade: Nonsag (NS).
   4. Class: 100/50.
   5. Uses Related to Exposure: Nontraffic (NT).

2.3 URETHANE JOINT SEALANTS

A. Urethane Joint Sealant: ASTM C 920.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. BASF Building Systems.
      b. Pecora Corporation.
      c. Sika Corporation; Construction Products Division.
      d. Tremco Incorporated.
   2. Type: Single component (S).
   3. Grade: Nonsag (NS).
   4. Class: 100/50.
   5. Uses Related to Exposure: Nontraffic (NT).

2.4 JOINT SEALANT BACKING

A. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), Type O (open-cell material), Type B (bicellular material with a surface skin), or any of the
preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer.

2.5 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer’s written instructions.
   1. Remove laitance and form-release agents from concrete.
   2. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction 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.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.
3.2 INSTALLATION

A. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

B. Install sealant backings of kind 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.

C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

D. Install sealants using proven techniques that 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 in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs 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 sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.

F. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.3 FIELD QUALITY CONTROL

A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:

1. Extent of Testing: Test completed and cured sealant joints as follows:

   a. Perform 10 tests for the first 300 m (1000 feet) of joint length for each kind of sealant and joint substrate.
b. Perform 1 test for each 300 m (1000 feet) of joint length thereafter or 1 test per each floor per elevation.


B. Evaluation of Field-Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.4 JOINT-SEALANT SCHEDULE

   1. Joint Locations:
      a. Perimeter joints between masonry materials and metal frames of doors and windows.
      b. Other masonry-to-metal joints.

   1. Joint Locations:
      a. Control and expansion joints in unit masonry.
      b. Joints in dimension stone cladding.
      c. Joints in cement plaster.
      d. Joints between different materials listed above.
      e. Other masonry-to-masonry joints.

END OF SECTION 079200
SECTION 08 41 26 - ALL-GLASS ENTRANCES AND STOREFRONTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Exterior manual-swinging all-glass entrance doors.

B. Related Sections:
   1. Division 07 Section “Joint Sealing” for joint sealants installed at interface of all-glass system and other building components.

1.2 PERFORMANCE REQUIREMENTS

A. General Performance: All-glass systems shall withstand the effects of the following performance requirements without exceeding performance criteria or failure due to defective manufacture, fabrication, installation, or other defects in construction.

B. Delegated Design: Design all-glass systems, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.

C. Structural Performance: All-glass systems shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated according to SEI/ASCE 7.

   2. Deflection Limits: Deflection normal to glazing plane is limited to 1/175 of clear span or 19 mm (3/4 inch), whichever is smaller.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: Show fabrication and installation details, including the following:

   1. Plans, elevations, and sections.
   2. Details of fittings and glazing, including isometric drawings.
3. Door hardware quantities, locations, mounting heights, and installation requirements.

C. Samples: For each type of exposed finish indicated.
   1. Metal Finishes: 6-inch- (150-mm) long sections of patch fittings, rails and other items.
   2. Glass: 6 inches (150 mm) square, showing exposed-edge finish and a sample of etching.

D. Other Action Submittals:
   1. Entrance Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of entrance door hardware, as well as procedures and diagrams.

E. Delegated-Design Submittal: For all-glass systems indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

F. Product test reports.

G. Maintenance data.

H. Warranty: Sample of special warranty.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

B. Engineering Responsibility: Prepare data for all-glass systems, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in systems similar to those indicated for this Project.

C. Source Limitations: Obtain all-glass systems from single source from single manufacturer.


E. Preinstallation Conference: Conduct conference at Project site.

F. Field Measurements: Verify actual locations of walls and other construction contiguous with all-glass systems by field measurements before fabrication and indicate measurements on Shop Drawings.
1.5 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of all-glass systems that do not comply with requirements or that fail in materials or workmanship within specified warranty period. Failures include, but are not limited to, the following:

1. Structural failures.
2. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

B. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product: Subject to compliance with requirements, provide 250 Series by Blumcraft of Pittsburgh, a division of C.R. Laurence Co., Inc. or comparable product by one of the following:

1. ACI Distribution; a division of Vitro America, Inc.
2. Arch Aluminum & Glass Co., Inc.
3. Guardina Industries Corp., Float Glass Division
4. Oldcastle Glass, Inc.

2.2 MATERIALS

A. Glass: ASTM C 1048, Kind FT (fully tempered), Condition A (uncoated surfaces), Type I (transparent), tested for surface and edge compression per ASTM C 1048 and for impact strength per 16 CFR 1201 for Category II materials.

1. Class 1: Clear monolithic.
   a. Thickness: 13 mm (1/2 inch)
2. Exposed Edges: Machine ground and flat polished.
5. Safety Marking: Provide 2 etched or sandblasted bands, one at 36-inches above finish floor and one at 66-inches above finish floor, on the interior side of each glass door, sidelight, and glass walls, in a 2-inch wide pattern to be selected by Architect.

B. Aluminum Extrusions: ASTM B 221M (ASTM B 221), with strength and durability characteristics of not less than Alloy 6063-T5.

2.3 METAL COMPONENTS

A. Fitting Configuration:
   1. Manual-Swinging, All-Glass Entrance Doors: Patch fittings at head and sill on pivot side, and for lock at sill of swing side

B. Patch Fittings: Bronze-alloy-clad aluminum.
   1. Finish: Statuary US10B.

C. Rail Fittings:
   1. Material: Match patch-fitting metal and finish.
   2. Top Rail: 89 mm (3-1/2 inches).
   3. Bottom Rail: 89 mm (3-1/2 inches).
   4. Profile: Square.
   5. End Caps: Manufacturer's standard precision-fit end caps for rail fittings.

D. Accessory Fittings: Match patch- and rail-fitting metal and finish for the following:
   1. Overhead doorstop.
   2. Center-housing lock.

E. Anchors and Fastenings: Concealed.

F. Weather Stripping: Pile type; replaceable without removing all-glass entrance doors from pivots.

2.4 ENTRANCE DOOR HARDWARE

A. General: Heavy-duty entrance door hardware units in sizes, quantities, and types recommended by manufacturer for all-glass entrance systems indicated. For exposed parts, match metal and finish of patch and rail fittings.

B. Concealed Floor Closers and Top Pivots: Center hung; BHMA A156.4, Grade 1; including cases, bottom arms, top walking beam pivots, plates, and accessories required for complete installation.
      a. Positive Dead Stop: Coordinated with hold-open angle if any, or at angle selected.
3. Delayed Action Closing: Comply with requirements of authorities having jurisdiction or the US Architectural & Transportation Barriers Compliance Board’s “Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG),” whichever are more stringent.

4. Opening-Force Requirements:
   a. Exterior Hinged Doors: Not more than 67 N (15 lbf) to release the latch and not more than 133 N (30 lbf) to set the door in motion and not more than 67 N (15 lbf) to open the door to its minimum required width.
   b. Interior Doors: Not more than 22.2 N (5 lbf).

C. Concealed Overhead Holder: BHMA A156.8, Grade 1 with dead-stop setting.

D. Push-Pull Set: As indicated.

E. Single-Door and Active-Leaf Locksets: Rail mount, top secured deadbolt (exterior handle).
   1. Deadbolt operated by key outside and thumb turn inside.

F. Cylinders: Six-pin cylinder, BHMA A156.5, Grade 1.

G. Exit Devices: UL 305.
   1. Function: Operation by push-pull when inside operator is locked down (dogged).
   2. Latching: At door head.
   3. Style: Concealed vertical rod in housing style indicated.
   4. Provide exit devices on both leaves of pairs of doors.

H. Threshold: Not more than 13 mm (1/2 inch) high with beveled edge(s) providing floor-level change with slope of not more than 1:2.
   1. Material: Bronze; finish to match door system.

I. Hardware Schedule as specified herein.

2.5 FABRICATION

A. Provide holes and cutouts in glass to receive hardware, fittings, and accessory fittings before tempering glass. Do not cut, drill, or make other alterations to glass after tempering.
   1. Fully temper glass using horizontal (roller-hearth) process, and fabricate so that when glass is installed, roll-wave distortion is parallel with bottom edge of door or lite.

B. Factory assemble components and factory install hardware and fittings to greatest extent possible.
2.6 STAINLESS STEEL FINISHES

A. General: Comply with NAAMM’s “Metal Finishes Manual for Architectural and Metal Products” for recommendations for applying and designating finishes.
   1. Remove tool and die marks and stretch lines or, blend into finish.
B. Stainless-Steel Finish: No. 4, bright, directional polish.
C. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.
B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install all-glass systems and associated components according to manufacturer's written instructions.
B. Set units level, plumb, and true to line, with uniform joints.
C. Maintain uniform clearances between adjacent components.
D. Lubricate hardware and other moving parts according to manufacturer's written instructions.
E. Set, seal, and grout floor closer cases as required to suit hardware and substrate indicated.
F. Install joint sealants to produce weathertight installation and as specified in Division 07 Section "Joint Sealants."

3.3 ADJUSTING AND CLEANING

A. Adjust doors and hardware to produce smooth operation and tight fit at contact points and weather stripping.
B. Remove excess sealant and glazing compounds and dirt from surfaces.
3.4 HARDWARE SET

A. Basis of Design: Blumcraft of Pittsburgh, unless otherwise indicated.

1. (2) Exterior Pull Hardware: Style F, full height.
2. (2) Interior Panic Hardware: PA 100 F
3. (1) Deadbolt: DB 130 F.
4. (2) Overhead Closer: 20101M17.
5. (2) Pivot: 3424BP
7. (2) Mortise Cylinder: Coordinate manufacturer and keying with Owner.
8. (2) Weatherstripping: Manufacturer’s standard.
9. (1) Threshold: Pemko, offset half-saddle style.

END OF SECTION 08 41 26
SECTION 09 91 13 - EXTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes surface preparation and the application of paint systems on the following exterior substrates:
   1. Ferrous metal (cast iron, wrought iron, steel).

B. Related Sections:
   1. See Division 02 Section “Lead-Based Paint Removal”.
   2. See Division 05 Section “Decorative Metal Railings”.

1.2 SUBMITTALS

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

B. Samples: For each finish and for each color and texture required.

C. Product List: Printout of current "MPI Approved Products List" for each product category specified in Part 2, with the proposed product highlighted.

1.3 QUALITY ASSURANCE

A. MPI Standards:
   1. Products: Complying with MPI standards indicated and listed in "MPI Approved Products List."

B. Mockups: Apply benchmark samples of each paint system indicated and each color and finish selected to verify preliminary selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
   1. Architect will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.
      a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft. (9 sq. m).
b. Other Items: Architect will designate items or areas required.

2. Final approval of color selections will be based on benchmark samples. If preliminary color selections are not approved, apply additional benchmark samples of additional colors selected by Architect at no added cost to Owner.

PART 2 - PRODUCTS

2.1 PAINT, GENERAL

A. Material Compatibility:
   1. Provide materials for use within each paint system that are 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, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

B. VOC Content: E Range of E1.

C. Colors: Match Architect’s samples.

2.2 METAL PRIMERS

A. Alkyd Anticorrosive Metal Primer: MPI #79.

2.3 EXTERIOR ALKYD PAINTS

A. Exterior Alkyd Enamel: MPI #94 (Semi-gloss; Gloss Level 5).

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 work.

B. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
C. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
  1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

3.2 PREPARATION AND APPLICATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.

B. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.
  1. Remove incompatible primers and reprime substrate with compatible primers as required to produce paint systems indicated.

C. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

D. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

E. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.3 EXTERIOR PAINTING SCHEDULE

A. Ferrous Metal Substrates: Alkyd System; MPI EXT 5.1D.

END OF SECTION 09 91 13
SECTION 260533 - RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

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. Nonmetal conduits, tubing, and fittings.

1.3 ACTION SUBMITTALS

A. Product Data: For each product to be installed.

B. Samples: For colors of each product.

PART 2 - PRODUCTS

2.1 NONMETALLIC CONDUITS, TUBING, AND FITTINGS

A. Manufacturers: Subject to compliance with requirements, provide products by the following:

1. AFC Cable Systems, Inc.
2. Anamet Electrical, Inc.
3. Arnco Corporation.
4. CANTEX Inc.
5. CertainTeed Corporation.
7. Electri-Flex Company.
8. Kraloy.
9. Lamson & Sessions; Carlon Electrical Products.
10. Niedax-Kleinhuys USA, Inc.
11. RACO; Hubbell.
12. Thomas & Betts Corporation.

B. Listing and Labeling: Nonmetallic conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
C. RNC: Type EPC-80-PVC, complying with NEMA TC 2 and UL 651 unless otherwise indicated.

D. Fittings for RNC: Comply with NEMA TC 3; match to conduit or tubing type and material.

E. Solvent cements and adhesive primers shall have a VOC content of 510 and 550 g/L or less, respectively, when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

A. Outdoors: Apply raceway products as specified below unless otherwise indicated:
   1. Conduit, Boxes, and Fittings: Type EPC-80-PVC.

B. Minimum Raceway Size: 3/4-inch trade size.

C. Install surface raceways only where indicated on Drawings.

3.2 INSTALLATION

A. Comply with NECA 1 and NECA 101 for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NECA 102 for aluminum conduits. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.

B. Keep raceways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.

C. Complete raceway installation before starting conductor installation.

D. Install no more than the equivalent of three 90-degree bends in any conduit run except for control wiring conduits, for which fewer bends are allowed. Support within 12 inches of changes in direction.

E. Support conduit within 12 inches of enclosures to which attached.

F. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.

G. Coat field-cut threads on PVC-coated raceway with a corrosion-preventing conductive compound prior to assembly.

H. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors including conductors smaller than No. 4 AWG.
I. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4-inch trade size and insulated throat metal bushings on 1-1/2-inch trade size and larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits.

J. Install raceways square to the enclosure and terminate at enclosures with locknuts. Install locknuts hand tight plus 1/4 turn more.

K. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to assure a continuous ground path.

L. Cut conduit perpendicular to the length. For conduits 2-inch trade size and larger, use roll cutter or a guide to make cut straight and perpendicular to the length.

M. Surface Raceways:
   1. Install surface raceway with a minimum 2-inch radius control at bend points.
   2. Secure surface raceway with screws or other anchor-type devices at intervals not exceeding 48 inches and with no less than two supports per straight raceway section. Support surface raceway according to manufacturer's written instructions. Tape and glue are not acceptable support methods.

N. Install raceway sealing fittings at accessible locations according to NFPA 70 and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings according to NFPA 70.

O. Install devices to seal raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal the interior of all raceways at the following points:
   1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
   2. Where an underground service raceway enters a building or structure.
   3. Where otherwise required by NFPA 70.

P. Comply with manufacturer's written instructions for solvent welding RNC and fittings.

Q. Expansion-Joint Fittings:
   1. Install in each run of aboveground RNC that is located where environmental temperature change may exceed 30 deg F and that has straight-run length that exceeds 25 feet. Install in each run of aboveground RMC and EMT conduit that is located where environmental temperature change may exceed 100 deg F and that has straight-run length that exceeds 100 feet.
   2. Install type and quantity of fittings that accommodate temperature change listed for each of the following locations:
a. Outdoor Locations Not Exposed to Direct Sunlight: 125 deg F temperature change.
b. Outdoor Locations Exposed to Direct Sunlight: 155 deg F temperature change.
c. Indoor Spaces Connected with Outdoors without Physical Separation: 125 deg F temperature change.

3. Install fitting(s) that provide expansion and contraction for at least 0.00041 inch per foot of length of straight run per deg of temperature change for PVC conduits. Install fitting(s) that provide expansion and contraction for at least 0.000078 inch per foot of length of straight run per deg F of temperature change for metal conduits.

4. Install expansion fittings at all locations where conduits cross building or structure expansion joints.

5. Install each expansion-joint fitting with position, mounting, and piston setting selected according to manufacturer's written instructions for conditions at specific location at time of installation. Install conduit supports to allow for expansion movement.

R. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements. Install boxes with height measured to center of box unless otherwise indicated.

S. Locate boxes so that cover or plate will not span different building finishes.

T. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.

3.3 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies.

3.4 FIRESTOPPING

A. Install firestopping at penetrations of fire-rated floor and wall assemblies.

3.5 PROTECTION

A. Protect coatings, finishes, and cabinets from damage and deterioration.

1. Repair damage to PVC coatings or paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION 260533
SECTION 265600 - EXTERIOR LIGHTING

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. Exterior luminaires with lamps and ballasts.

1.3 DEFINITIONS

A. CCT: Correlated color temperature.

B. CRI: Color-rendering index.

C. LER: Luminaire efficacy rating.

D. Luminaire: Complete lighting fixture, including ballast housing if provided.

1.4 ACTION SUBMITTALS

A. Product Data: For each luminaire, and support component, arranged in order of lighting unit designation. Include data on features, accessories, finishes, and the following:

1. Physical description of luminaire, including materials, dimensions, effective projected area, and verification of indicated parameters.

2. Details of attaching luminaires and accessories.

3. Details of installation and construction.

4. Luminaire materials.

5. Photometric data based on laboratory tests of each luminaire type, complete with indicated lamps, ballasts, and accessories.

   a. Testing Agency Certified Data: For indicated luminaires, photometric data shall be certified by a qualified independent testing agency. Photometric data for remaining luminaires shall be certified by manufacturer.

   b. Manufacturer Certified Data: Photometric data shall be certified by manufacturer's laboratory with a current accreditation under the National
6. Ballasts, including energy-efficiency data.
7. Lamps, including life, output, CCT, CRI, lumens, and energy-efficiency data.
8. Materials, dimensions, and finishes of poles.
9. Means of attaching luminaires to supports, and indication that attachment is suitable for components involved.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
   1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
   2. Anchor-bolt templates keyed to specific poles and certified by manufacturer.
   3. Wiring Diagrams: For power, signal, and control wiring.

C. Samples: For products designated for sample submission in the Exterior Lighting Device Schedule. Each Sample shall include lamps and ballasts.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified agencies providing photometric data for lighting fixtures.
B. Field quality-control reports.
C. Warranty: Sample of special warranty.

1.6 QUALITY ASSURANCE

A. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by manufacturers' laboratories that are accredited under the National Volunteer Laboratory Accreditation Program for Energy Efficient Lighting Products.
B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
D. Comply with NFPA 70.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Package aluminum poles for shipping according to ASTM B 660.
B. Store poles on decay-resistant-treated skids at least 12 inches above grade and vegetation. Support poles to prevent distortion and arrange to provide free air circulation.

1.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace products that fail in materials or workmanship; that corrode; or that fade, stain, perforate, erode, or chalk due to effects of weather or solar radiation within specified warranty period. Manufacturer may exclude lightning damage, hail damage, vandalism, abuse, or unauthorized repairs or alterations from special warranty coverage.

1. Warranty Period for Luminaires: Five years from date of Substantial Completion.
2. Warranty Period for Metal Corrosion: Five years from date of Substantial Completion.
3. Warranty Period for Color Retention: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Products: Subject to compliance with requirements, provide product indicated on Drawings.

2.2 GENERAL REQUIREMENTS FOR LUMINAIRES

A. Luminaires shall comply with UL 1598 and be listed and labeled for installation in wet locations by an NRTL acceptable to authorities having jurisdiction.

B. Metal Parts: Free of burrs and sharp corners and edges.

C. Sheet Metal Components: Corrosion-resistant aluminum unless otherwise indicated. Form and support to prevent warping and sagging.

D. Housings: Rigidly formed, weather- and light-tight enclosures that will not warp, sag, or deform in use. Provide filter/breather for enclosed luminaires.

E. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position. Doors shall be removable for cleaning or replacing lenses. Designed to disconnect ballast when door opens.

F. Exposed Hardware Material: Stainless steel.

G. Plastic Parts: High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
H. Light Shields: Metal baffles, factory installed and field adjustable, arranged to block light distribution to indicated portion of normally illuminated area or field.

I. Reflecting surfaces shall have minimum reflectance as follows unless otherwise indicated:

1. White Surfaces: 85 percent.
2. Specular Surfaces: 83 percent.
3. Diffusing Specular Surfaces: 75 percent.

J. Lenses and Refractors Gaskets: Use heat- and aging-resistant resilient gaskets to seal and cushion lenses and refractors in luminaire doors.

K. Luminaire Finish: Manufacturer's standard paint applied to factory-assembled and -tested luminaire before shipping. Where indicated, match finish process and color of pole or support materials.


1. Finish: Thermoset polyester powder coat.
2. Color: As selected by Architect from manufacturer's standard finishes.

M. Factory-Applied Labels: Comply with UL 1598. Include recommended lamps and ballasts. Labels shall be located where they will be readily visible to service personnel, but not seen from normal viewing angles when lamps are in place.

1. Label shall include the following lamp and ballast characteristics:
   a. "USES ONLY" and include specific lamp type.
   b. Lamp type and wattage.
   c. ANSI ballast type.
   d. CCT and CRI for all luminaires.

2.3 GENERAL REQUIREMENTS FOR SUPPORT COMPONENTS

A. Luminaire Attachment Provisions: Comply with luminaire manufacturers' mounting requirements. Use stainless-steel fasteners and mounting bolts unless otherwise indicated.

B. Mountings, Fasteners, and Appurtenances: Corrosion-resistant items compatible with support components.

1. Materials: Shall not cause galvanic action at contact points.
3. Anchor-Bolt Template: Plywood or steel.
PART 3 - EXECUTION

3.1 LUMINAIRE INSTALLATION
   A. Install lamps in each luminaire.
   B. Fasten luminaire to indicated structural supports.
   C. Adjust luminaires that require field adjustment or aiming.

3.2 CORROSION PREVENTION
   A. Aluminum: Do not use in contact with earth or concrete. When in direct contact with a dissimilar metal, protect aluminum by insulating fittings or treatment.
   B. Steel Conduits: Comply with Section 260533 "Raceways and Boxes for Electrical Systems." In concrete foundations, wrap conduit with 0.010-inch-thick, pipe-wrapping plastic tape applied with a 50 percent overlap.

3.3 GROUNDING
   A. Ground metal poles and support structures according to Section 260526 "Grounding and Bonding for Electrical Systems."
      1. Install grounding conductor pigtail in the base for connecting luminaire to grounding system.
   B. Ground nonmetallic poles and support structures according to Section 260526 "Grounding and Bonding for Electrical Systems."
      1. Install grounding conductor and conductor protector.

3.4 FIELD QUALITY CONTROL
   A. Inspect each installed fixture for damage. Replace damaged fixtures and components.
   B. Illumination Observations: Verify normal operation of lighting units after installing luminaires and energizing circuits with normal power source.
      1. Verify operation of photoelectric controls.
   C. Illumination Tests:
      1. Measure light intensities at night. Use photometers with calibration referenced to NIST standards. Comply with the following IESNA testing guide(s):
d. IESNA LM-64, "Photometric Measurements of Parking Areas."
e. IESNA LM-72, "Directional Positioning of Photometric Data."

D. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.

END OF SECTION 265600
PART 1 - GENERAL

1.1 SUMMARY
   A. This Section includes exterior cement concrete pavement for the following:
      1. Walkways (integrally colored concrete).

1.2 SUBMITTALS
   A. Product Data: For each type of product indicated.
   B. Design Mixtures: For each concrete pavement mixture.
   C. Samples for Selection: Color pigment.
   D. Test results for concrete, including:
      1. Certification that materials comply with specified requirements.
      2. Certification that mix complies with specified requirements.

1.3 QUALITY ASSURANCE
   A. Manufacturer Qualifications: Manufacturer of ready-mixed concrete products who complies
      with ASTM C 94/C 94M requirements for production facilities and equipment.
   B. ACI Publications: Comply with ACI recommended practices, unless modified by requirements
      in the Contract Documents, including ACI 304, 305, 306, 308, 318, and 330R.
   C. ASTM Publications: Comply with the ASTM requirements, including ASTM A185, A615, C31,
      C33, C39, C94, C94, C143, C150, C171, C172, C231, C260, C309, C494, D422, E329, and other
      specified publications.

1.4 REGULATORY REQUIREMENTS
   A. Obtain required permits and approvals form authorities having jurisdiction for work within
      their respective rights-of-way and easements.
   B. Obtain required permits and approvals related to offsite disposal of materials.
1.5 COORDINATION

A. Do not proceed until site preparation activities have been completed.

B. Coordinate the work with installation of adjacent construction.

C. Coordinate schedule with Owner's Representative.

PART 2 - PRODUCTS

2.1 STEEL REINFORCEMENT

A. General: Reinforcing steel shall be new, free of grease, form oils, dirt, loose mill scale, loose rust, or other foreign material.

B. Plain-Steel Welded Wire Reinforcement: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.

C. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420); deformed.

D. Plain Steel Wire: ASTM A 82, minimum 16 gage.

E. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice."

2.2 CONCRETE MATERIALS

A. Cementitious Material: Use one of the following cementitious materials, of the same type, brand, and source throughout the Project:

   1. Portland Cement: May be used if concrete will be exposed to moderate or severe sulfate action and if approval is obtained from the Owner's Representative.
      a. Comply with ASTM C 150, Type I, II, or V.

   2. Cement Concrete: As indicated on drawings and in compliance with Section 704 of PennDOT Specifications Publication 408.

B. Aggregates: Provide aggregates from a single source.

   1. General: Aggregate shall be screened, washed, and graded and shall not contain foreign material, clay, friable particles, coal, lignite, material finer than No. 200 sieve, soft particles, lightweight chert, or organic impurities.
2. Coarse: Comply with ASTM C33. Provide crushed rock or natural gravel of the largest size that is practicable to reduce shrinkage and cracking.


C. Water: ASTM C 94/C 94M; potable.


E. Chemical Admixtures: Provide type suitable for application and certified by manufacturer to be compatible with other admixtures.
   1. Water-Reducing Admixture: ASTM C494, Type A.
   2. High Range Water-Reducing Admixture (superplasticizer): ASTM C494, Type F or G.
   3. Water-Reducing, Retarding Admixture: ASTM C494, Type D.
   4. Non-Corrosive / Non-Chlorine Accelerator: ASTM C494, Type C or E. Do not use calcium chloride of admixture containing more than 0.1 percent water-soluble chloride ions by mass of cementitious material.

F. Mortar: Comply with Section 1001.2(d) of PennDOT Specifications Publication 408.

G. Bedding Material: Comply with AASHTO No. 57 crushed stone and with minimum requirements of Section 703 of PennDOT Specifications Publication 408.

2.3 CURING MATERIALS

A. Clear Waterborne Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.

B. Moisture-Retaining Cover: Waterproof cover made of two layers of kraft paper bonded together with asphalt and reinforced with fibers; comply with ASTM C 171.

C. Water: Potable.

D. Colored admixture for integrally colored concrete:
   1. Colored, water-reducing admixture containing no calcium chloride with coloring agents that are lineproof and ultra-violet resistant.
   3. Raw pigments may not be substituted.
   4. Subject to compliance with requirements, provide product by L.M. Scofield Company or other manufacturer with acceptable product.
   5. Color: To be selected by Architect from manufacturer's samples.
2.4 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: Provide asphalt-saturated cellulosic fiber per ASTM D 1751. Furnish pieces at least 8-feet long and join securely.

B. Joint Sealant: Comply with minimum requirements of Section 705.4(b) or (c) of PennDOT Specifications Publication 408.

C. Color Pigment: ASTM C 979, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable, free of carbon black, nonfading, and resistant to lime and other alkalis.

2.5 CONCRETE MIXTURES

A. Prepare design mixtures, proportioned according to ACI 301, with the following properties:

2. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.45.
3. Slump Limit: 5 inches (125 mm), plus or minus 1 inch (25 mm).
4. Air Content: 6 percent plus or minus 1.5 percent.

B. Color Pigment: Add color pigment to concrete mixture according to manufacturer's written instructions.

2.6 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Furnish batch certificates for each batch discharged and used in the Work. On-site concrete mixing is not permitted.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Proof-roll prepared subbase surface below concrete pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding.

3.2 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for pavement to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.3 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

3.4 JOINTS

A. General: Form construction, isolation, and contraction joints and tool edgings true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated.

B. Construction Joints: Set construction joints at side and end terminations of pavement and at locations where pavement operations are stopped for more than one-half hour unless pavement terminates at isolation joints.

C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.

D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness to match jointing of existing adjacent concrete pavement.

E. Edging: Tool edges of pavement, gutters, curbs, and joints in concrete after initial floating with an edging tool to a radius which matches existing adjacent concrete pavement. Repeat tooling of edges after applying surface finishes. Eliminate tool marks on concrete surfaces.

3.5 CONCRETE PLACEMENT

A. Moisten subbase to provide a uniform dampened condition at time concrete is placed.

B. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.

C. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.

D. Screed pavement surfaces with a straightedge and strike off.

E. Commence initial floating using bull floats or darbies to impart an open textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.
3.6 FLOAT FINISHING

A. General: Do not add water to concrete surfaces during finishing operations.

B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats, or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

1. Unless otherwise indicated, provide finish texture to match existing adjacent concrete pavement.

3.7 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

B. Comply with ACI 306.1 for cold-weather protection.

C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x 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.

D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

E. Curing Methods: Cure concrete by moisture-retaining-cover curing, curing compound, or a combination of these methods.

3.8 PAVEMENT TOLERANCES

A. Comply with tolerances of ACI 117 and as follows:

1. Elevation: 1/4 inch (6 mm).
2. Thickness: Plus 3/8 inch (10 mm), minus 1/4 inch (6 mm).
3. Surface: Gap below 10-foot- (3-m-) long, unleveled straightedge not to exceed 1/4 inch (6 mm).
4. Joint Spacing: 3 inches (75 mm).
5. Contraction Joint Depth: Plus 1/4 inch (6 mm), no minus.
6. Joint Width: Plus 1/8 inch (3 mm), no minus.
3.9 PAVEMENT MARKING

A. None.

3.10 REPAIRS AND PROTECTION

A. Remove and replace concrete pavement that is broken, damaged, stained, or defective or that does not comply with requirements in this Section.

B. Protect concrete from damage. Exclude traffic from pavement for at least 14 days after placement.

C. Maintain concrete pavement free of stains, discoloration, dirt, and other foreign material. Sweep concrete pavement not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 32 13 13
Repair Main Entrance
Jones Hall, 808 Ridge Avenue
Community College of Allegheny County
Allegheny Campus

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GENERAL PROJECT NOTES

1. Do not scale drawings.
2. Dimensions are to face of masonry, or face of foundation wall, unless noted otherwise.
3. Verify dimensions of existing conditions at the site. Report discrepancies to Architect before proceeding with work.
4. Return adjacent areas disturbed by construction to the condition prior to construction.
5. Retain and protect items designated for reuse within the project. Return items to Owner as indicated.
6. Review status of salvagable material with Owner prior to removal from the site.
7. Limits of project are shown for general reference only and do not establish precise boundaries of work for any trade that may be required to complete the project.
CONSTRUCTION KEYNOTES


2. Base Bid: Existing cheek wall and cap to remain as is. Alternate 1: See Sheet A106.


5. Base Bid: Existing masonry stringer/support walls are anticipated below stone steps. Reconstruct top three courses at each step. Grout solid and provide indicated anchors. Alternate 4: Provide new concrete base for steps, see Sheet A103.

1/2" THICK EXPANSION JOINT FILLER

EXISTING CONSTRUCTION TO REMAIN

REPLACED STONE STEPS AND LANDING - MATCH STONE TYPE, SIZES, AND LAYOUT

REPLACE STONE STEPS AND LANDING - MATCH STONE TYPE, SIZES, AND LAYOUT

NOTE: SEE DWG 1/A104 FOR EXTENT OF SIDEWALK REPLACEMENT.

REFERENCES

Construction Plan and Section

Handrail - Base Bid and Alternate 4

Scale: 3/8" = 1'-0"

CONSTRUCTION

Repair Main Entrance

Jones Hall

CCAC - Allegheny Campus

16-AC-001

A102

01/20/17

A102

3/8" = 1'-0"
**GENERAL NOTES - Alternate 4**

1. Dampproof face of all concrete.

2. Refer to Drawing 3/A102 for handrail.
Sidewalk Details and Notes

Repair Main Entrance
Jones Hall
CCAC - Allegheny Campus

1/8" = 1'-0" Scale

Alternate 4 - Concrete Base/Sidewalk Detail

1/8" = 1'-0" Scale

Sidewalk Plan

Sidewalk Joint Details, Typical

1/8" = 1'-0" Scale

Sidewalk Joint Details, Typical

3 1/2" EXPANSION JOINT, TYPICAL

1/2" EXPANSION JOINT - PROVIDE JOINT SEALANT WITH BACKER MATERIAL (PREMOLDED BITUMINOUS BOARD WITH BOND BREAK)

BROOM FINISH PERPENDICULAR TO CURB

3" CONCRETE (4000 PSI) WITH CONTINUOUS 6" X 6" 1.4 X 1.4 WWF SET ABOVE GRADE WITH CHAIRS

SMOOTH S.S. DOWEL WITH SLIP CAP, 1/2" DIA. X 12" LONG AT 24" O.C., DRILL AND EPOXY GROUT INTO EXISTING CONCRETE

AASHTO #57 COMPACTED CRUSHED LIMESTONE AGGREGATE BASE COMPACTED SUBGRADE

NOTE: DO NOT DOWEL NEW SIDEWALK INTO EXIST. STREET CURB

NEW SIDEWALK 19'-5" +/-

EXISTING STREET CURB TO REMAIN

NOTE: MATCH GRADE OF EXISTING ADJOINING SIDEWALKS AND STREET CURB

APPROXIMATE LOCATION OF EXISTING CITY PARKING SIGNS. COORDINATE WITH CITY FOR TEMPORARY REMOVAL AND FOR REINSTALLATION.

NOTE: DO NOT DOWEL NEW SIDEWALK INTO EXIST. STREET CURB

ALIGN WITH EXISTING ADJOINING CONTROL JOINT

SAW CUT EXISTING CONCRETE SIDEWALK (TYPICAL BOTH SIDES)

EXISTING STREET CURB TO REMAIN

NOTE: MATCH GRADE OF EXISTING ADJOINING SIDEWALKS AND STREET CURB

STONE STEP/CURB

1/2" EXPANSION JOINT, TYPICAL

DOWEL, TYPICAL

SIDEWALK PLANES

SIDEWALK SYSTEM, TYPICAL

T/ CURB (WEST)

T/ CURB (EAST)
**KEYNOTES - Base Bid**

1. Replace existing stone steps with new stone steps of similar type, appearance, layout and stone dimensions.
2. Replace damaged stone base.
3. Remove existing door stops on terracotta veneer. Patch holes where removed.
KEYNOTES - Alternate 1

1. Clean and repoint entire extent of cheek walls including all exposed surfaces.

2. Patch damaged stone. (Bidder shall indicate all locations and quantity.)

3. Example of cracked stone to be replaced. (Bidder shall indicate all locations and quantity.)

4. Example of building element to temporarily relocate and/or protect during cleaning and other work.

5. At Grade, Typical: Remove soil so that approx. 4” of stone is exposed below grade for cleaning and pointing. Replace soil upon completion.

6. Remove and replace existing conduit and junction boxes from point where conduit penetrates existing exterior wall to existing pole mounted light fixture. Provide new 3/4” conduit from new weatherproof box at exterior of building to new weatherproof box at cheek wall. Intercept existing wiring at exterior of building and provide 2 #12 and 1 #12 ground in new conduit to new pole mounted light fixture.
   (A) Existing Power: 120 VAC
   (B) Controls/ Switching: Existing
   (C) Conduit: PVC (Schedule 80), suitable for exterior use.
   (D) Junction Box: PVC (Schedule 80), suitable for exterior use (weatherproof).
   (E) PVC Color to be selected by Architect from manufacturer’s standard finishes.

7. Provide new post mounted fixture to replace existing.
   Submit shop drawings and finish samples for review and approval:
   (A) Mfr: ELA (Environmental Lighting for Architecture, Inc.)
   (B) Model: AMB-15-PT-HS-45LED-120-FA-FF4
   (C) Pole Model P3010A: Match existing height (approx. 6'-6”). Field verify height prior to fabrication.
   (D) Powder Coat Finish: To be selected by Architect from manufacturer’s standard finishes.
GENERAL NOTES - Alternate 2

1. Clean and repoint entire extent of existing curbs. Include all visible surfaces (front, top, rear). Provide sealant at joint with sidewalk.

2. Existing fence: Not in contract, unless otherwise indicated.

3. Prior to commencing work, remove weeds, trash, and other deleterious material from curb and abutting sidewalk.

4. At Grade, Typical: Remove soil so that approx. 4" of stone is exposed below grade for cleaning and pointing. Replace soil upon completion.

5. Remove existing sealant at fence posts/curb pocket and provide grout.

KEYNOTES - Alternate 2

1. Prior to cleaning, rebuild stone curb/wall to plumb, aligned, and structurally sound condition. (A) To greatest extent possible, reuse existing stone. (B) Remove portions of existing fence as required to perform work. Upon acceptance of new work, reinstall fence.

2. Example of damaged stone to be patched/repaired. (Bidder shall indicate locations and quantity.)

3. Example of cracked/damaged stone to be replaced. (Bidder shall indicate all locations and quantity.)

4. Example of building element to temporarily relocate and/or protect during cleaning and other work.

5. Existing door: Not in contract.

6. Coordinate with appropriate third parties to make temporary provisions to access curb wall.

7. Existing drainage openings shall remain. Remove debris from openings.

8. Repair stone at base of fence post with dutchman or composite patch as appropriate. Grout posts solid.
1. Stone Curb - West
   NOT TO SCALE

2A. Stone Curb - East
   NOT TO SCALE

2B. Stone Curb - East
   NOT TO SCALE

PROJECT
Alternate 2 - Stone Curbs

DATE
03/09/16

OWNER
Jones Hall

PROJECT NUMBER
CCAC - Allegheny Campus

DRAWING NUMBER
16-AC-001

CONSTRUCTION
01/20/17

REFER TO NOTES ON SHEET A107
ALTERNATE 3 - ENTRANCE DOORS

1. Abate lead-based paint and clean existing metal transom (grille and frame). Prepare, prime and repaint transom; color to be selected by Architect/Owner. Clean glass.


3. Provide new vinyl lettering. Text, logos, size, font, etc. as directed by Owner.

EXISTING TRANSOM TO REMAIN BLOCKING W/ CONT. BREAK METAL COVER, FINISH TO MATCH DOOR SEALANT, TYP. SHIM CUSTOM LENGTH METAL DOOR HEADER

EXIST. MET. THRESH. TO REMAIN

3" ALUM. THRESHOLD (HALF-SADDLE), INSTALL FLUSH W/ EXIST. THRESHOLD

NOTE: ISOLATE DISSIMILAR METALS.

1/2" V.I.F.

NOTE: ISOLATE DISSIMILAR METALS.

1/4" = 1'-0"