

Specifications for

# Carteret County Courthouse Repairs

**Coastal**  
Architecture



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Project No.  
23025



**Beaufort,  
North Carolina**

Issued November 3, 2023

**Project Manual**  
**including**  
**Contract Documents & Specifications**  
**for the Construction of**  
  
**CARTERET COUNTY COURTHOUSE REPAIRS**  
  
**BEAUFORT, NORTH CAROLINA**

**PREPARED BY:**

**Coastal Architecture**  
**4206 Bridges Street, Suite C**  
**Morehead City, NC 28557**  
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**Architect's Project Number: 23025**  
**Date of Issue: November 3, 2023**

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## INVITATION TO BIDS

BIDS for the renovations of the Carteret County Courthouse Repairs, will be received by the Owner until 2:00PM on Thursday December 21, 2023 and then opened and publicly posted.

The CONTRACT DOCUMENTS may be obtained from Architects website, [www.coastalarchitecture.net](http://www.coastalarchitecture.net) or purchased from the Architect for a sum of \$150.00 each per set.

The Owner reserves the unqualified right to reject any and/or all bids.

Bids will be received via email:

[Lee@coastalarchitecture.net](mailto:Lee@coastalarchitecture.net)  
[eugene.foxworth@carteretcountync.gov](mailto:eugene.foxworth@carteretcountync.gov)

**A 5% Bid Bond will be required, and a 100% Performance and Payment Bond will be required as part of the bid.**

There will be a pre-bid meeting on site on Tuesday December 12, 2023, at 10:00AM.  
All bidders are encouraged to attend.

SINGLE PRIME  
FORM OF PROPOSAL FOR:

Date: \_\_\_\_\_  
Bid: **Single Prime** \_\_\_\_\_  
Contractor: \_\_\_\_\_  
License #: \_\_\_\_\_  
Addenda Received: \_\_\_\_\_

## Renovations to Carteret County Courthouse Repairs Beaufort, NC

Indicate your firm's name and date by filling in the above blanks and note the same items on your Proposal envelope or email transmittal.

The undersigned, as Bidder, hereby declares that the only person or persons interested in this Proposal as Principal or Principals is or are named herein and that no other person than herein mentioned has any interest in this Proposal or in the Contract to be entered into; that this Proposal is made without connection with any other person, company or parties making a bid or proposal; and that it is in all respects fair and in good faith without collusion or fraud.

The Bidder further declares that he has examined the site of the work and informed himself fully in regard to all conditions pertaining to the place where the work is to be done; that he has examined the Plans for the work and the Contract Documents relative thereto, and has read all special provisions furnished prior to the opening of bids; that he has satisfied himself relative to the work to be performed. The Bidder proposes and agrees if this Proposal is accepted to contract with the Owner in the form of agreed upon Contract , to furnish all necessary materials, equipment, machinery, tools, apparatus, means of transportation and labor necessary to complete the construction of this project as defined in these Contract Documents, in full and in complete accordance with the plans of the Owner and the Architect/Engineer, with a definite understanding that no money will be allowed for extra work except as desired and approved by the owner in advance and Contract Documents for the sum of:

**Base Bid      SINGLE PRIME CONTRACT:**

\_\_\_\_\_ Dollars \$ \_\_\_\_\_  
(written amount) (number amount)

**Add Alt. No. 1**

\_\_\_\_\_ Dollars \$ \_\_\_\_\_  
(written amount) (number amount)

**Add Alt. No. 2**

\_\_\_\_\_ Dollars \$ \_\_\_\_\_  
(written amount) (number amount)

Unit Prices      The following units prices will be part of the Contract.

- Stud repair (sister stud beside existing damaged stud) work from exterior side. New metal stud to be 16ga. Galv. \$ \_\_\_\_\_ per stud.

- Sheathing repair (beyond scope of work described in the drawings) including moisture barrier 5/8" densguard and ice and water shield. \$\_\_\_\_\_s.f.

The Bidder further proposes and agrees hereby to commence work under his Contract on a date to be specified in a written order of the Architect/Engineer and shall fully complete all work within 150 consecutive calendar days from the notice to proceed. Applicable liquidated damages shall be as stated in Supplementary General Conditions.

Respectfully submitted this \_\_\_\_\_ day of \_\_\_\_\_, 2022.

**WITNESS:**

\_\_\_\_\_  
Name of Firm or Corporation making Bid)

By: \_\_\_\_\_

\_\_\_\_\_  
(Proprietorship or Partnership)

Title: \_\_\_\_\_  
(Owner, Partner, or Corporate President or Vice President only)

**ATTEST:**

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

By: \_\_\_\_\_

Title: \_\_\_\_\_ License No.: \_\_\_\_\_  
(Corporate Secretary or Assistant Secretary only)

(Corporate Seal)

Addenda Received and Used in Computing Bids: (Initial as Appropriate)

Addendum No.1 \_\_\_\_\_

Addendum No.2 \_\_\_\_\_

Addendum No.3 \_\_\_\_\_

Addendum No.4 \_\_\_\_\_

**End of Proposal Form**

## Identification of HUB Certified/ Minority Business Participation

I, \_\_\_\_\_,  
(Name of Bidder)

do hereby certify that on this project, we will use the following HUB Certified/ minority business as construction subcontractors, vendors, suppliers or providers of professional services.

Firm Name, Address and Phone #	Work Type	*Minority Category	**HUB Certified (Y/N)

\*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

**\*\* HUB Certification with the state HUB Office required to be counted toward state participation goals.**

**The total value of minority business contracting will be (\$)\_\_\_\_\_.**



# State of North Carolina AFFIDAVIT A – Listing of Good Faith Efforts

County of \_\_\_\_\_

(Name of Bidder)

Affidavit of \_\_\_\_\_

I have made a good faith effort to comply under the following areas checked:

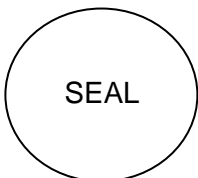
**Bidders must earn at least 50 points from the good faith efforts listed for their bid to be considered responsive.** (1 NC Administrative Code 30 I.0101)

- 1 – (10 pts)** Contacted minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor, or available on State or local government maintained lists, at least 10 days before the bid date and notified them of the nature and scope of the work to be performed.
- 2 --(10 pts)** Made the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bids are due.
- 3 – (15 pts)** Broken down or combined elements of work into economically feasible units to facilitate minority participation.
- 4 – (10 pts)** Worked with minority trade, community, or contractor organizations identified by the Office of Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
- 5 – (10 pts)** Attended prebid meetings scheduled by the public owner.
- 6 – (20 pts)** Provided assistance in getting required bonding or insurance or provided alternatives to bonding or insurance for subcontractors.
- 7 – (15 pts)** Negotiated in good faith with interested minority businesses and did not reject them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
- 8 – (25 pts)** Provided assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisted minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.
- 9 – (20 pts)** Negotiated joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
- 10 - (20 pts)** Provided quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.

The undersigned, if apparent low bidder, will enter into a formal agreement with the firms listed in the Identification of Minority Business Participation schedule conditional upon scope of contract to be executed with the Owner. Substitution of contractors must be in accordance with GS143-128.2(d) Failure to abide by this statutory provision will constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of the minority business commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: \_\_\_\_\_ Name of Authorized Officer: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Title: \_\_\_\_\_



State of \_\_\_\_\_, County of \_\_\_\_\_  
Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_  
Notary Public \_\_\_\_\_  
My commission expires \_\_\_\_\_

# State of North Carolina --AFFIDAVIT B-- Intent to Perform Contract with Own Workforce.

County of \_\_\_\_\_

Affidavit of \_\_\_\_\_

(Name of Bidder)

I hereby certify that it is our intent to perform 100% of the work required for the \_\_\_\_\_

\_\_\_\_\_ contract.

(Name of Project)

In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type project, and normally performs and has the capability to perform and will perform all elements of the work on this project with his/her own current work forces; and

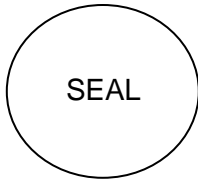
The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement. The Bidder agrees to make a Good Faith Effort to utilize minority suppliers where possible.

The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date: \_\_\_\_\_ Name of Authorized Officer: \_\_\_\_\_

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

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



State of \_\_\_\_\_, County of \_\_\_\_\_

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

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

My commission expires \_\_\_\_\_

# State of North Carolina - AFFIDAVIT C - Portion of the Work to be Performed by HUB Certified/Minority Businesses

County of \_\_\_\_\_

**(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)**

If the portion of the work to be executed by HUB certified/minority businesses as defined in GS143-128.2(g) and 128.4(a),(b),(e) is equal to or greater than 10% of the bidders total contract price, then the bidder must complete this affidavit.  
 This affidavit shall be provided by the apparent lowest responsible, responsive bidder within **72 hours** after notification of being low bidder.

Affidavit of \_\_\_\_\_ I do hereby certify that on the \_\_\_\_\_  
 (Name of Bidder)

\_\_\_\_\_ (Project Name)  
 Project ID# \_\_\_\_\_ Amount of Bid \$ \_\_\_\_\_

I will expend a minimum of \_\_\_\_\_% of the total dollar amount of the contract with minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. Attach additional sheets if required

Name and Phone Number	*Minority Category	**HUB Certified Y/N	Work Description	Dollar Value

\*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

**\*\* HUB Certification with the state HUB Office required to be counted toward state participation goals.**

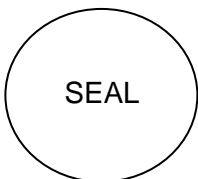
Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: \_\_\_\_\_ Name of Authorized Officer: \_\_\_\_\_

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

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



State of \_\_\_\_\_, County of \_\_\_\_\_

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

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

My commission expires \_\_\_\_\_

# State of North Carolina AFFIDAVIT D – Good Faith Efforts

County of \_\_\_\_\_

**(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)**

If the goal of 10% participation by HUB Certified/ minority business **is not** achieved, the Bidder shall provide the following documentation to the Owner of his good faith efforts:

Affidavit of \_\_\_\_\_ I do hereby certify that on the \_\_\_\_\_  
(Name of Bidder)

Project ID# \_\_\_\_\_ (Project Name) Amount of Bid \$ \_\_\_\_\_

I will expend a minimum of \_\_\_\_\_% of the total dollar amount of the contract with HUB certified/ minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. (Attach additional sheets if required)

Name and Phone Number	*Minority Category	**HUB Certified Y/N	Work Description	Dollar Value

\*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

**\*\* HUB Certification with the state HUB Office required to be counted toward state participation goals.**

Examples of documentation that may be required to demonstrate the Bidder's good faith efforts to meet the goals set forth in these provisions include, but are not necessarily limited to, the following:

- A. Copies of solicitations for quotes to at least three (3) minority business firms from the source list provided by the State for each subcontract to be let under this contract (if 3 or more firms are shown on the source list). Each solicitation shall contain a specific description of the work to be subcontracted, location where bid documents can be reviewed, representative of the Prime Bidder to contact, and location, date and time when quotes must be received.
- B. Copies of quotes or responses received from each firm responding to the solicitation.
- C. A telephone log of follow-up calls to each firm sent a solicitation.
- D. For subcontracts where a minority business firm is not considered the lowest responsible sub-bidder, copies of quotes received from all firms submitting quotes for that particular subcontract.
- E. Documentation of any contacts or correspondence to minority business, community, or contractor organizations in an attempt to meet the goal.
- F. Copy of pre-bid roster
- G. Letter documenting efforts to provide assistance in obtaining required bonding or insurance for minority business.
- H. Letter detailing reasons for rejection of minority business due to lack of qualification.
- I. Letter documenting proposed assistance offered to minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letter of credit, including waiving credit that is ordinarily required.

Failure to provide the documentation as listed in these provisions may result in rejection of the bid and award to the next lowest responsible and responsive bidder.

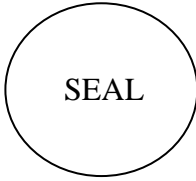
Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: \_\_\_\_\_ Name of Authorized Officer: \_\_\_\_\_

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

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



State of \_\_\_\_\_, County of \_\_\_\_\_

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

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

My commission expires \_\_\_\_\_

**APPENDIX E**

**MBE DOCUMENTATION FOR CONTRACT PAYMENTS**

Prime Contractor/Architect: \_\_\_\_\_

Address & Phone: \_\_\_\_\_

Project Name: \_\_\_\_\_

Pay Application #: \_\_\_\_\_ Period: \_\_\_\_\_

The following is a list of payments made to Minority Business Enterprises on this project for the above-mentioned period.

MBE FIRM NAME	* INDICATE TYPE OF MBE	AMOUNT PAID THIS MONTH	TOTAL PAYMENTS TO DATE	TOTAL AMOUNT COMMITTED

\*Minority categories: Black, African American (B), Hispanic (H), Asian American (A), American Indian (I), Female (F), Social and Economically Disadvantage (D)

Date: \_\_\_\_\_ Approved/Certified By: \_\_\_\_\_

Name

\_\_\_\_\_

Title

\_\_\_\_\_

Signature

**SUBMIT WITH EACH PAY REQUEST & FINAL PAYMENT**

## **GUIDELINES FOR RECRUITMENT AND SELECTION OF MINORITY BUSINESSES FOR PARTICIPATION IN STATE CONSTRUCTION CONTRACTS**

In accordance with G.S. 143-128.2 (effective January 1, 2002) these guidelines establish goals for minority participation in single-prime bidding, separate-prime bidding, construction manager at risk, and alternative contracting methods, on State construction projects in the amount of \$300,000 or more. The legislation provides that the State shall have a verifiable ten percent (10%) goal for participation by minority businesses in the total value of work for each project for which a contract or contracts are awarded. These requirements are published to accomplish that end.

### **SECTION A: INTENT**

It is the intent of these guidelines that the State of North Carolina, as awarding authority for construction projects, and the contractors and subcontractors performing the construction contracts awarded shall cooperate and in good faith do all things legal, proper and reasonable to achieve the statutory goal of ten percent (10%) for participation by minority businesses in each construction project as mandated by GS 143-128.2. Nothing in these guidelines shall be construed to require contractors or awarding authorities to award contracts or subcontracts to or to make purchases of materials or equipment from minority-business contractors or minority-business subcontractors who do not submit the lowest responsible, responsive bid or bids.

### **SECTION B: DEFINITIONS**

1. Minority - a person who is a citizen or lawful permanent resident of the United States and who is:
  - a. Black, that is, a person having origins in any of the black racial groups in Africa;
  - b. Hispanic, that is, a person of Spanish or Portuguese culture with origins in Mexico, South or Central America, or the Caribbean Islands, regardless of race;
  - c. Asian American, that is, a person having origins in any of the original peoples of the Far East, Southeast Asia and Asia, the Indian subcontinent, the Pacific Islands;
  - d. American Indian, that is, a person having origins in any of the original peoples of North America; or
  - e. Female
2. Minority Business - means a business:
  - a. In which at least fifty-one percent (51%) is owned by one or more minority persons, or in the case of a corporation, in which at least fifty-one percent (51%) of the stock is owned by one or more minority persons or socially and economically disadvantaged individuals; and
  - b. Of which the management and daily business operations are controlled by one or more of the minority persons or socially and economically disadvantaged individuals who own it.
3. Socially and economically disadvantaged individual - means the same as defined in 15 U.S.C. 637. "Socially disadvantaged individuals are those who have been subjected to racial or ethnic prejudice or cultural bias because of their identity as a member of a group without regard to their individual qualities". "Economically disadvantaged individuals are those socially disadvantaged individuals whose ability to compete in the free enterprise system has been impaired due to diminished capital and credit opportunities as compared to others in the same business area who are not socially disadvantaged".
4. Public Entity - means State and all public subdivisions and local governmental units.
5. Owner - The State of North Carolina, through the Agency/Institution named in the contract.
6. Designer – Any person, firm, partnership, or corporation, which has contracted with the State of North Carolina to perform architectural or engineering, work.
7. Bidder - Any person, firm, partnership, corporation, association, or joint venture seeking to be awarded a public contract or subcontract.

8. Contract - A mutually binding legal relationship or any modification thereof obligating the seller to furnish equipment, materials or services, including construction, and obligating the buyer to pay for them.
9. Contractor - Any person, firm, partnership, corporation, association, or joint venture which has contracted with the State of North Carolina to perform construction work or repair.
10. Subcontractor - A firm under contract with the prime contractor or construction manager at risk for supplying materials or labor and materials and/or installation. The subcontractor may or may not provide materials in his subcontract.

## **SECTION C: RESPONSIBILITIES**

1. Office for Historically Underutilized Businesses, Department of Administration (hereinafter referred to as HUB Office).

The HUB Office has established a program, which allows interested persons or businesses qualifying as a minority business under G.S. 143-128.2, to obtain certification in the State of North Carolina procurement system. The information provided by the minority businesses will be used by the HUB Office to:

- a. Identify those areas of work for which there are minority businesses, as requested.
- b. Make available to interested parties a list of prospective minority business contractors and subcontractors.
- c. Assist in the determination of technical assistance needed by minority business contractors.

In addition to being responsible for the certification/verification of minority businesses that want to participate in the State construction program, the HUB Office will:

- (1) Maintain a current list of minority businesses. The list shall include the areas of work in which each minority business is interested.
- (2) Inform minority businesses on how to identify and obtain contracting and subcontracting opportunities through the State Construction Office and other public entities.
- (3) Inform minority businesses of the contracting and subcontracting process for public construction building projects.
- (4) Work with the North Carolina trade and professional organizations to improve the ability of minority businesses to compete in the State construction projects.
- (5) The HUB Office also oversees the minority business program by:
  - a. Monitoring compliance with the program requirements.
  - b. Assisting in the implementation of training and technical assistance programs.
  - c. Identifying and implementing outreach efforts to increase the utilization of minority businesses.
  - d. Reporting the results of minority business utilization to the Secretary of the Department of Administration, the Governor, and the General Assembly.

2. State Construction Office

The State Construction Office will be responsible for the following:

- a. Furnish to the HUB Office a minimum of twenty-one days prior to the bid opening the following:
  - (1) Project description and location;
  - (2) Locations where bidding documents may be reviewed;
  - (3) Name of a representative of the owner who can be contacted during the advertising period to advise who the prospective bidders are;
  - (4) Date, time and location of the bid opening.
  - (5) Date, time and location of prebid conference, if scheduled.
- b. Attending scheduled prebid conference, if necessary, to clarify requirements of the general statutes regarding minority-business participation, including the bidders' responsibilities.



- c. Reviewing the apparent low bidders' statutory compliance with the requirements listed in the proposal, that must be complied with, if the bid is to be considered as responsive, prior to award of contracts. The State reserves the right to reject any or all bids and to waive informalities.
- d. Reviewing of minority business requirements at Preconstruction conference.
- e. Monitoring of contractors' compliance with minority business requirements in the contract documents during construction.
- f. Provide statistical data and required reports to the HUB Office.
- g. Resolve any protest and disputes arising after implementation of the plan, in conjunction with the HUB Office.

### 3. Owner

Before awarding a contract, owner shall do the following:

- a. Develop and implement a minority business participation outreach plan to identify minority businesses that can perform public building projects and to implement outreach efforts to encourage minority business participation in these projects to include education, recruitment, and interaction between minority businesses and non-minority businesses.
- b. Attend the scheduled prebid conference.
- c. At least 10 days prior to the scheduled day of bid opening, notify minority businesses that have requested notices from the public entity for public construction or repair work and minority businesses that otherwise indicated to the Office for Historically Underutilized Businesses an interest in the type of work being bid or the potential contracting opportunities listed in the proposal. The notification shall include the following:
  - 1. A description of the work for which the bid is being solicited.
  - 2. The date, time, and location where bids are to be submitted.
  - 3. The name of the individual within the owner's organization who will be available to answer questions about the project.
  - 4. Where bid documents may be reviewed.
  - 5. Any special requirements that may exist.
- d. Utilize other media, as appropriate, likely to inform potential minority businesses of the bid being sought.
- e. Maintain documentation of any contacts, correspondence, or conversation with minority business firms made in an attempt to meet the goals.
- f. Review, jointly with the designer, all requirements of G.S. 143-128.2(c) and G.S. 143-128.2(f) – (i.e. bidders' proposals for identification of the minority businesses that will be utilized with corresponding total dollar value of the bid and affidavit listing good faith efforts, or affidavit of self-performance of work, if the contractor will perform work under contract by its own workforce) - prior to recommendation of award to the State Construction Office.
- g. Evaluate documentation to determine good faith effort has been achieved for minority business utilization prior to recommendation of award to State Construction Office.
- h. Review prime contractors' pay applications for compliance with minority business utilization commitments prior to payment.
- i. Make documentation showing evidence of implementation of Owner's responsibilities available for review by State Construction Office and HUB Office, upon request

### 4. Designer

Under the single-prime bidding, separate prime bidding, construction manager at risk, or alternative contracting method, the designer will:

- a. Attend the scheduled prebid conference to explain minority business requirements to the prospective bidders.
- b. Assist the owner to identify and notify prospective minority business prime and subcontractors of potential contracting opportunities.
- c. Maintain documentation of any contacts, correspondence, or conversation with minority business firms made in an attempt to meet the goals.
- d. Review jointly with the owner, all requirements of G.S. 143-128.2(c) and G.S.143-128.2(f) – (i.e. bidders' proposals for identification of the minority businesses that will be utilized with

corresponding total dollar value of the bid and affidavit listing Good Faith Efforts, or affidavit of self-performance of work, if the contractor will perform work under contract by its own workforce) - prior to recommendation of award.

- e. During construction phase of the project, review “MBE Documentation for Contract Payment” – (Appendix E) for compliance with minority business utilization commitments. Submit Appendix E form with monthly pay applications to the owner and forward copies to the State Construction Office.
- f. Make documentation showing evidence of implementation of Designer’s responsibilities available for review by State Construction Office and HUB Office, upon request.

5. Prime Contractor(s), CM at Risk, and Its First-Tier Subcontractors

Under the single-prime bidding, the separate-prime bidding, construction manager at risk and alternative contracting methods, contractor(s) will:

- a. Attend the scheduled prebid conference.
- b. Identify or determine those work areas of a subcontract where minority businesses may have an interest in performing subcontract work.
- c. At least ten (10) days prior to the scheduled day of bid opening, notify minority businesses of potential subcontracting opportunities listed in the proposal. The notification will include the following:
  - (1) A description of the work for which the subbid is being solicited.
  - (2) The date, time and location where subbids are to be submitted.
  - (3) The name of the individual within the company who will be available to answer questions about the project.
  - (4) Where bid documents may be reviewed.
  - (5) Any special requirements that may exist, such as insurance, licenses, bonds and financial arrangements.

If there are more than three (3) minority businesses in the general locality of the project who offer similar contracting or subcontracting services in the specific trade, the contractor(s) shall notify three (3), but may contact more, if the contractor(s) so desires.

- d. During the bidding process, comply with the contractor(s) requirements listed in the proposal for minority participation.
- e. Identify on the bid, the minority businesses that will be utilized on the project with corresponding total dollar value of the bid and affidavit listing good faith efforts as required by G.S. 143-128.2(c) and G.S. 143-128.2(f).
- f. Make documentation showing evidence of implementation of PM, CM-at-Risk and First-Tier Subcontractor responsibilities available for review by State Construction Office and HUB Office, upon request.
- g. Upon being named the apparent low bidder, the Bidder shall provide one of the following: (1) an affidavit (Affidavit C) that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the applicable goal; (2) if the percentage is not equal to the applicable goal, then documentation of all good faith efforts taken to meet the goal. Failure to comply with these requirements is grounds for rejection of the bid and award to the next lowest responsible and responsive bidder.
- h. The contractor(s) shall identify the name(s) of minority business subcontractor(s) and corresponding dollar amount of work on the schedule of values. The schedule of values shall be provided as required in Article 31 of the General Conditions of the Contract to facilitate payments to the subcontractors.
- i. The contractor(s) shall submit with each monthly pay request(s) and final payment(s), “MBE Documentation for Contract Payment” – (Appendix E), for designer’s review.
- j. During the construction of a project, at any time, if it becomes necessary to replace a minority business subcontractor, immediately advise the owner, State Construction Office, and the Director of the HUB Office in writing, of the circumstances involved. The prime contractor shall make a good faith effort to replace a minority business subcontractor with another minority business subcontractor.

- k. If during the construction of a project additional subcontracting opportunities become available, make a good faith effort to solicit subbids from minority businesses.
- l. It is the intent of these requirements apply to all contractors performing as prime contractor and first tier subcontractor under construction manager at risk on state projects.

6. Minority Business Responsibilities

While minority businesses are not required to become certified in order to participate in the State construction projects, it is recommended that they become certified and should take advantage of the appropriate technical assistance that is made available. In addition, minority businesses who are contacted by owners or bidders must respond promptly whether or not they wish to submit a bid.

**SECTION 4: DISPUTE PROCEDURES**

It is the policy of this state that disputes that involves a person's rights, duties or privileges, should be settled through informal procedures. To that end, minority business disputes arising under these guidelines should be resolved as governed under G.S. 143-128(g).

**SECTION 5:** These guidelines shall apply upon promulgation on state construction projects. Copies of these guidelines may be obtained from the Department of Administration, State Construction Office, (physical address) 301 North Wilmington Street, Suite 450, NC Education Building, Raleigh, North Carolina, 27601-2827, (mail address) 1307 Mail Service Center, Raleigh, North Carolina, 27699-1307, phone (919) 807-4100, Website: [www.nc-sco.com](http://www.nc-sco.com)

**SECTION 6:** In addition to these guidelines, there will be issued with each construction bid package provisions for contractual compliance providing minority business participation in the state construction program.

## MINORITY BUSINESS CONTRACT PROVISIONS (CONSTRUCTION)

### APPLICATION:

The **Guidelines for Recruitment and Selection of Minority Businesses for Participation in State Construction Contracts** are hereby made a part of these contract documents. These guidelines shall apply to all contractors regardless of ownership. Copies of these guidelines may be obtained from the Department of Administration, State Construction Office, (physical address) 301 North Wilmington Street, Suite 450, NC Education Building, Raleigh, North Carolina, 27601-2827, (mail address) 1307 Mail Service Center, Raleigh, North Carolina, 27699-1307, phone (919) 807-4100, Website: <http://www.nc-sco.com>

### MINORITY BUSINESS SUBCONTRACT GOALS:

The goals for participation by minority firms as subcontractors on this project have been set at 10%.

The bidder must identify on its bid, the minority businesses that will be utilized on the project with corresponding total dollar value of the bid and affidavit (Affidavit A) listing good faith efforts **or** affidavit (Affidavit B) of self-performance of work, if the bidder will perform work under contract by its own workforce, as required by G.S. 143-128.2(c) and G.S. 143-128.2(f).

The lowest responsible, responsive bidder must provide Affidavit C, that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the applicable goal.

**OR**

Provide Affidavit D, that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, **with documentation of Good Faith Effort, if the percentage is not equal to the applicable goal.**

**OR**

Provide Affidavit B, which includes sufficient information for the State to determine that the bidder does not customarily subcontract work on this type project.

**The above information must be provided as required. Failure to submit these documents is grounds for rejection of the bid.**

## **MINIMUM COMPLIANCE REQUIREMENTS:**

All written statements, affidavits or intentions made by the Bidder shall become a part of the agreement between the Contractor and the State for performance of this contract. Failure to comply with any of these statements, affidavits or intentions, or with the minority business Guidelines shall constitute a breach of the contract. A finding by the State that any information submitted either prior to award of the contract or during the performance of the contract is inaccurate, false or incomplete, shall also constitute a breach of the contract. Any such breach may result in termination of the contract in accordance with the termination provisions contained in the contract. It shall be solely at the option of the State whether to terminate the contract for breach.

In determining whether a contractor has made Good Faith Efforts, the State will evaluate all efforts made by the Contractor and will determine compliance in regard to quantity, intensity, and results of these efforts. Good Faith Efforts include:

- (1) Contacting minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor or available on State or local government maintained lists at least 10 days before the bid or proposal date and notifying them of the nature and scope of the work to be performed.
- (2) Making the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bid or proposals are due.
- (3) Breaking down or combining elements of work into economically feasible units to facilitate minority participation.
- (4) Working with minority trade, community, or contractor organizations identified by the Office for Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
- (5) Attending any prebid meetings scheduled by the public owner.
- (6) Providing assistance in getting required bonding or insurance or providing alternatives to bonding or insurance for subcontractors.
- (7) Negotiating in good faith with interested minority businesses and not rejecting them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
- (8) Providing assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisting minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.
- (9) Negotiating joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
- (10) Providing quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.

**APPENDIX E**

**MBE DOCUMENTATION FOR CONTRACT PAYMENTS**

Prime Contractor/Architect: \_\_\_\_\_

Address & Phone: \_\_\_\_\_

Project Name: \_\_\_\_\_

Pay Application #: \_\_\_\_\_ Period: \_\_\_\_\_

The following is a list of payments made to Minority Business Enterprises on this project for the above-mentioned period.

MBE FIRM NAME	* INDICATE TYPE OF MBE	AMOUNT PAID THIS MONTH	TOTAL PAYMENTS TO DATE	TOTAL AMOUNT COMMITTED

\*Minority categories: Black, African American (B), Hispanic (H), Asian American (A), American Indian (I), Female (F), Social and Economically Disadvantage (D)

Date: \_\_\_\_\_ Approved/Certified By: \_\_\_\_\_

Name

\_\_\_\_\_

Title

\_\_\_\_\_

Signature

**SUBMIT WITH EACH PAY REQUEST & FINAL PAYMENT**

**GENERAL CONDITIONS**

AIA Document A201 – 2017 – General Conditions of the Contract for Construction is referenced in these contract documents and is to be part of this contract.

This document can be obtained by contacting:

AIA North Carolina  
115 West Morgan Street  
Raleigh, North Carolina 27601  
919-833-6656 phone  
919-833-2015 fax order line

**STANDARD FORM OF AGREEMENT**

AIA Document A101 – 2017 – Standard Form of Agreement Between Owner and Contractor *where the basis of payment is a Stipulated Sum Price* is referenced in these contract documents and is to be part of this contract.

This document can be obtained by contacting:

AIA North Carolina  
115 West Morgan Street  
Raleigh, North Carolina 27601  
919-833-6656 phone  
919-833-2015 fax order line



**SECTION 00800 - SUPPLEMENTARY GENERAL CONDITIONS AND GENERAL REQUIREMENTS**

**SUPPLEMENTS TO AIA DOCUMENT A-201: 2017 Edition**

The following supplements modify, delete from or add to the "General Conditions of the Contract for Construction", AIA Document A-201, 2007. Where any Article of the General Conditions is modified or any Paragraph, Subparagraph or Clause thereof is modified or deleted by these Supplementary Conditions, the unaltered provisions of that Article, Paragraph, Subparagraph or Clause shall remain in effect. If in the event any articles of the Construction Contract are in direct conflict with Articles of the General Conditions, the Contract shall override for that portion that may be in conflict.

**ARTICLE 1:**

Add the following definitions:

- "Product" includes materials, systems, and equipment.
- "Provide" shall mean furnish and install complete in place, operational and ready for use.
- "Building Code" and "Code" refer to regulations of governmental agencies having jurisdiction
- "Or approved equal" and "equal to" shall mean substitute products by manufacturers other than those specified in the project manual, addenda, and on the drawings and which may be incorporated in the work after review and concurrence by the designer and the Owner.
- "Approved", "required", and "as directed" refer to and indicate the work or materials that may be approved, required or directed by the Architect acting as the agent for the "Owner
- "Indicated" and "shown" shall mean as detailed, or called for and reasonably implied in the contract documents.
- "Latest edition" shall mean the current printed document issued up to 30 calendar days prior to date of receipt of bids, unless specified otherwise.
- "Drawings" or "plans" mean the drawings enumerated in the contract documents, as well as all the information in the detail manual when applicable, addenda, and designer prepared field drawings and clarification drawings.
- "Specifications" mean this project manual and addenda thereto.
- "Similar" means in its general sense and not necessarily identical.
- "Shown", "indicated", "detailed", "noted", "scheduled" and terms of similar import, refer to the requirements contained in the Contract Documents.

**ARTICLE 2:**

2.2.5 Add: Drawings and Specification furnished to contractors:

Final Plans, Specifications and any Addendum will be posted on the Architect's website.

**ARTICLE 3:**

3.1.1 Add: The General Contractor shall be the "Project Expediter" and shall be responsible for proper coordination of all work.

3.12.11 Add: Product Data, and Samples - Each contractor shall submit electronic copies of all shop drawings, and any required samples for approval.

- 3.12.12 Add: The contractor shall make any corrections required by the Architect and file with him electronic copies, when requested. Additional copies shall be furnished to other trades and prime contractors where necessary to coordinate their work.
- 3.12.13 Add: The Contractor shall keep at the site a current set of shop drawings that bear the stamped approval of the Architect or Engineer.
- 3.15.1 Add: Prior to final inspection and acceptance of the building, the General Contractor shall clean the building, including but not limited to, glass, hardware, fixtures, equipment, masonry, clean floors as specified, and completely prepare the building for use by the Owner with no cleaning required by the Owner.

**ARTICLE 5:**

**ARTICLE 7:**

- 7.2.1 Add: The allowances for overhead and profit combined shall not exceed fifteen (15)% of net cost except where the change involves a subcontractor; allowances shall not exceed fifteen (15)% for the subcontractor and five (5)% for the prime contractor. No allowances shall be made for overhead and profit. In the case of deductible change orders, the contractor shall include not less than seven (7)% profit, but no allowance for overhead.

At the time of signing a change order, the contractor shall certify as follows, "I certify that my bonding company will be notified forthwith that my contract has been increased or decreased by the amount of this change order, and that a copy of the approved change order will be mailed upon receipt by me to my surety".

All requests for Change Orders must be in writing and be supported by a breakdown showing method of arriving at net costs. Breakdown shall include materials, labor, taxes, profit & overhead.

**ARTICLE 8:**

- 8.1.2 Add: The Contractor shall commence work to be performed under this agreement on a date to be specified in a written Notice to Proceed and shall fully complete work hereunder within **150** consecutive calendar days from said date. For each day in excess of the above number of days, the Contractor(s) shall pay to the Owner the sum of as \$250.00 per consecutive calendar day liquidated damages, reasonably estimated in advance to cover losses to be incurred by the Owner by reason of failure of said Contractor(s) to complete work within the time specified, such time being in the essence of this Contract and a material consideration thereof.

- 8.2.1 Add: In planning his construction schedule within the agreed Contract Time, it shall be assumed that the Contractor has anticipated the amount of adverse weather conditions normal to site of the Work for the season or seasons of the year involved. Only those weather delays attributable to other than normal weather conditions will be considered by the Architect, which affect the critical path schedule.

**ARTICLE 9:**

- 9.2 Add: Schedule of Values shall separate labor and material for each phase of the work.

The phases of work shall be broken down per each section of the specifications. Where a section includes two or more major items of work, they shall also be broken out separately including labor and material.

Each item in the Schedule of Values and Application for Payment shall be complete including its total cost and proportionate share of general overhead and profit margin.

At the Contractor's option, temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown as separate line items in the Schedule of Values or distributed as general overhead expense.

Submit five (5) copies, within 10 days of Notice to Proceed.

- 9.3.1 Add: Type of Form: Application and Certificate for Payment AIA Document G 702 and Continuation Sheet G 702A, latest edition. (The contractor may purchase these certificates from the American Institute of Architects, 1735 New York Avenue, NW, Washington, D.C.).

Number of copies: Five (5) unless otherwise noted. Must have original signatures.

Cut off for each application shall be the 25th of each month.

Application shall be in Architect's office no later than the last day of each month and shall be signed and notarized.

Retainage: Each certificate shall show, and the Owner will retain 5% of the amount of each estimate until final completion and acceptance of all work covered by the contract.

- 9.6.1 Add: The Owner shall make payment of each certificate no later than the last day of the following month.

#### **ARTICLE 11:**

- Add: All Certificates of Insurance required by the Contract Documents shall contain a provision that coverage's afforded under the policies will not be canceled, reduced in amount or coverage's eliminated until at least thirty (30) days after mailing written notice, by certified mail, return receipt requested, to the insured and the Owner of such alteration or cancellation.

Full contract amount shall appear on each document as necessary.

Effective date on each document shall be the same as the contract document date.

Expiration date shall be sufficient to complete the project.

An authorized individual agent, licensed to do business in North Carolina, shall countersign each policy.

The title "Licensed Resident Agent" shall appear after the signature.

- 11.1 Add:

Shall be furnished and maintained by contractor as outlined with the following adjustments and additions.

General Liability shall include: Comprehensive forms, premises- operations, independent contractor's protective, products and completed operations broad form property damaged, and explosion and collapse hazard.

Automobile liability shall include: Comprehensive form, owned, hired, and non-owned.

Worker's Compensation and Employer's Liability in accordance with North Carolina Statutory requirements.

11.1.2 Limits shall be as follows:

Combined Single Limit  
General Liability - For Bodily Injury and Property Damage  
Each Occurrence = \$1,000,000  
General Aggregate = \$2,000,000

Auto Liability - For Bodily Injury and Property Damage  
Combined Single Limit = \$300,000

Employer Liability for each accident = \$100,000

Subcontractor's Insurance Coverage - The Contractor shall either:

1. Require each of his subcontractors to procure and to maintain during the life of his subcontract, Subcontractor's Comprehensive General Liability, Automobile Liability, and Property Insurance of the type and the same amount as specified in paragraph above; or
2. Insure the activity of his subcontractors in his own policy.

11.3 Revise To: Contractor to Purchase and Supply Builders Risk Insurance

11.4.1 Performance bond and payment bond will be required for 100% of the contract price.

### **ARTICLE 13: MISCELLANEOUS PROVISIONS**

The Project Expediter shall provide temporary power required for construction for all trades and disciplines unless otherwise stated in the specifications.

The Contractor will pay for electricity and water usage. The Contractor shall assure that temporary power and water are used in a responsible manner.

### **ARTICLE 15:**

15.1.5.1 Add: When Contract Time has been extended, as provided under this Paragraph 4.3.7.1, such extension of time shall not be considered as justifying extra compensation to the Contractor for Administrative costs or other such reasons.

15.1.5.2 Add: In planning his construction schedule within the agreed Contract Time, it shall be assumed that the Contractor has anticipated the amount of adverse weather conditions normal to site of the Work for the season or seasons of the year involved. Only those weather delays attributable to other than normal weather conditions will be considered by the Architect if critical path of schedule is affected. A five year average will be used for calculating adverse weather. The Newport Weather Station will be used as a reporting station.

15.1.2 Add: Mediation will be the first step in solving claims. Arbitration shall be used to settle disputes or claims only if both parties agree to arbitration, otherwise, all disputes and claims shall be settled by normal legal means.

If arbitration is agreed by both parties, then after appointment of the arbitrator or arbitrators, the parties to the arbitration shall have the right to take depositions and to obtain discovery regarding the subject matter of the arbitration and, to that end, to use and exercise all of the same rights, remedies, and procedures, and be subject to all of the same duties, liabilities, and obligations in the arbitration with respect to the subject matter thereof, as if the matter of the arbitration were pending in a civil action before a Superior Court of the State.

END OF SECTION 00800

## **SECTION 00820 – SPECIAL CONDITIONS**

1. **General:** The existing facility shall remain secure during the construction period. All contractors shall conduct their operations so as to cause the least possible interference with the normal operations of the facility. All contractors shall limit use of the site for access and storage of materials to those areas approved by the Owner. All access to the area of work must be through designated areas approved by the Owner. Contractors shall not be allowed access to any area other than the immediate area of work.
2. **On Site Parking:** Parking is not permitted on the Owner's property except for construction vehicles used in the performance of the work and only where approved by the Owner.
3. **Building Security:** The present level of security for the existing facility shall not be reduced in any way, due to work of this contract.
4. **Personnel Safety:** Contractor shall provide barricades and similar types of safety items required to protect anyone in the area of work from the hazards of construction activities. Roadways, walks, paths, entrances, exits, etc. shall remain unobstructed and shall be maintained in a safe and satisfactory manner. The Contractor shall assume responsibility and payments for the existing barricades in place.
5. **Site Protection:** Contractor shall be responsible for and shall protect building, landscaping (all trees, shrubs, lawns, etc.) vehicles, etc. on or near the site from damage due to the work of this contract. Any damage shall be fully corrected to the satisfaction of the Architect. Sidewalks and paved areas shall be protected from damage from construction. If during the construction, public or private property is damaged or destroyed, during the course of the work, the responsible contractor shall, at his own expense, restore such property to a condition equal to that existing before such damage or injury was done, by repairing, rebuilding or replacing it, or otherwise making good such damage or destruction in an acceptable manner.
6. Access to the building and site shall be only between the hours of 7:00 am – 8:00 pm unless otherwise approved in advance. No work on Sunday, Easter or Christmas will be permitted.
7. No smoking will be permitted on site at any time.
8. The Contractor will be responsible for all permits (application and costs).
9. The Contractor will be responsible for all dump fees and land fill fees.

END OF SECTION 00820

## **SECTION 00830 - DESCRIPTION OF BID ALTERNATES**

### **PART 1 - GENERAL**

#### 1.1 DESCRIPTION

- A. The following descriptions represent all bid "Alternates" requested by the Owner and represent a full designation on the Bid Form.
  - 1. NOTE: General Contractors shall each provide in his Bid an amount for his portion of the Contract on each of the following Bid Alternates. If no is required of a Contractor on a particular Alternate, that Contractor shall enter -0- in the appropriate space on the Bid Form.
- B. Bid Alternates:
  - 1. **Alternate No. 1:** Remove and replace ALL brick/masonry/sheathing/moisture barrier and replace with new brick/masonry/sheathing with new material as shown on details.
  - 2. **Alternate No. 2:** Same as base bid except remaining brick/masonry as well as new brick/masonry to be stained a consistent color.

#### 1.2 SUBMITTALS

- A. Submit materials, product data, and/or shop drawings, which may be required for Architect's approval.

#### 1.3 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced installer who has completed work similar in design and extent to that indicated in project and with a record of successful in-service performance

#### 1.4 CONTRACT CONSIDERATIONS

- A. Alternates:
  - 1. Include in alternate price all materials, parts and accessories required for complete installation.
  - 2. Include in alternate price the deduct for specified item(s) if applicable.
  - 3. Voluntary alternates will not be considered in evaluation of Bids.
  - 4. Alternate price shall be noted in the appropriate location of the Form of Proposal.

### **PART 2 - PRODUCT**

- A. See Specification Section specific to items above for a complete description.

**END OF SECTION 00830**

## **SECTION 01010 - SUMMARY OF WORK**

### PART 1 - GENERAL

#### 1.1 DESCRIPTION

- A. The Contractor shall, unless otherwise specified, supply all labor, transportation, materials, apparatus, fuel, water, energy, light and tools necessary for entire, proper and substantial completion of his work and shall install, maintain, and remove all equipment for the construction, other utensils or things and shall be responsible for the safe, proper and lawful construction, maintenance and use of same and shall construct in the best and most workmanlike manner a complete structure and everything properly incidental thereto as shown on plans, stated in specifications or reasonably implied there from, all in accordance with the Contract Documents.
- B. Contract type
- The work will be accomplished under:
1. The Single Prime Contract will be Stipulated Sum Contract covering general, mechanical, plumbing and electrical construction. All General Condition items will be clearly identified in the contract and will be a fixed amount.
- C. Scope of Work - scope of the work is, but not limited to as follows:
1. General Construction
  2. Plumbing System
  3. HVAC System
  4. Electrical work
  5. All related work
  6. All related site work
  7. Selective Demo
  8. Fire Alarm

PART 2 & 3 - NOT USED.

**END OF SECTION 01010**



**SECTION 01020 - ALLOWANCES**

PART 1 - GENERAL

1.1 DESCRIPTION

- A. General: All allowances considered in the Contract Price shall be clearly identified in the Contract and approved before signing. If the actual cost is more than, or less than the allowance, the Contract Price will be adjusted up or down accordingly when the actual cost is determined. Adjustments in the Allowances will be made by Change Order. Unless specified otherwise, the allowance amounts include the net cost of materials, and shipping charges.
  
- B. Cash Allowance and Contingency Cash Allowance: The Contractor's overhead, profit, shipping costs and taxes shall be included in the Base Bid Contract Price, but not in the allowance. All allowances agreed upon shall clearly indicate materials only or materials and labor included as the case may be. For allowance listed as materials only, the Contractor shall include in his base bid price all labor and associated installation costs. The contractor shall submit to the Architect for approval all bills for materials under Cash Allowances.

1.2 SCHEDULE OF CASH ALLOWANCES

- A. Brick \$650/thousand (materials only)
  
- B. Testing \$15,000.00 (materials and labor)

1.3 CONTINGENCY CASH ALLOWANCE

- A. Contingency Cash Allowance \$75,000.00 Portions of this allowance can only be authorized for use by the Architect's approval.  
Please note: The General Contractor shall include profit and overhead in their base bid and not within the allowance figure. Therefore, when portions of this allowance is used and deducted from this allowance figure, no additional overhead and profit will be allowed.

PARTS 2 & 3 - NOT USED.

**END OF SECTION 01020**

## **SECTION 01027 – APPLICATIONS FOR PAYMENT**

### **PART 1 – GENERAL**

#### **1.1 DESCRIPTION**

- A. Work included: Comply with procedures described in this Section when applying for progress payment and final payment under the Contract.
- B. Related work
  - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

#### **1.2 QUALITY ASSURANCE**

- A. Prior to start of construction, secure the Architect's approval of the Schedule of Values required to be submitted under Paragraph 9.2 of the General conditions, and further described in Section 01370 of these Specifications.
- B. During progress of the work the Schedule of Value are to remain unchanged as approved by the Architect. Changes in the Contract Sum due to Change Orders or other modifications of the Contract shall be added to the Schedule of Values as Change Orders.
- C. Base requests for payment on the approved schedule of values.

#### **1.3 SUBMITTALS**

- 1. Make this preliminary submittal to the Architect at the last regular job meeting of each month.
- 2. Make submittal of request for payment by filling in the agreed data on AIA Document G702, "Application and Certificate for Payment," plus continuation sheet or sheets.
- 3. Sign and notarize the Application and Certificate for Payment.
- 4. Submit (5) originals of the Application and Certificate for Payment
- 5. Cut off period is the 25<sup>th</sup> of the month.
- 6. Submittals are due in the Architect's office by the 28<sup>th</sup> of each month.
- 7. For allowance items furnish all invoices, receipts, time records, etc. with all requests for payment.

END OF SECTION 01027

## **SECTION 01045 – CUTTING AND PATCHING**

### **PART 1 – GENERAL**

#### **1.1 DESCRIPTION**

- A. Work included: This Section establishes general requirements pertaining to cutting (including excavating), fitting, and patching of the work required to:
  - 1. Make the several parts fit properly.
  - 2. Uncover work to provide for installing, inspecting, or both, of ill-timed work.
  - 3. Remove and replace work not conforming to requirements of the Contract Documents.
  - 4. Remove and replace defective work.
  
- B. Related work
  - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
  - 2. In addition to other requirements specified, upon the Architect's request uncover work to provide for inspection by the Architect of covered work, and remove samples of installed materials for testing.
  - 3. Do not cut or alter work performed under separate contracts without the Architect's written permission.

#### **1.2 QUALITY ASSURANCE**

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

#### **1.3 SUBMITTALS**

- A. Request for Architect's consent
  - 1. Prior to cutting which effects structural safety, submit written request to the Architect for permission to proceed with cutting.
  - 2. Should conditions of the work, or schedule, indicate a required change of materials or methods for cutting and patching, so notify the Architect and secure his written permission and any required Change Order prior to proceeding.
  
- B. Notices to the Architect
  - 1. Prior to cutting and patching performed pursuant to the Architect's instructions, submit cost estimate to the Architect. Secure the Architect's approval of cost estimates and type of reimbursement before proceeding with cutting and patching.
  - 2. Submit written notice to the Architect designating the time the work will be uncovered, to provide for the Architect's observation.

### **PART 2 – PRODUCTS**

#### **2.1 MATERIALS**

- A. For replacement of items removed, use materials complying with pertinent Sections of these Specifications.

## PART 3 – EXECUTION

### 3.1 SURFACE CONDITIONS

- A. Inspection
  - 1. Inspect existing conditions, including elements subject to movement or damage during cutting, excavating, patching, and backfilling.
  - 2. After uncovering the work, inspect conditions affecting installation of new work.
- B. Discrepancies
  - 1. If uncovered conditions are not as anticipated, immediately notify the Architect and secure needed directions.
  - 2. Do not proceed until unsatisfactory conditions are corrected.

### 3.2 PREPARATION PRIOR TO CUTTING

- A. Provide required protection including, but not necessarily limited to, shoring, bracing, and support to maintain structural integrity of the work.

### 3.3 PERFORMANCE

- A. Perform required excavating and backfilling as required under pertinent other Sections of these Specifications.
  - 1. Perform cutting and demolition by methods, which will prevent damage to other portions of the work and provide proper surfaces to receive installation of repair and new work.
  - 2. Perform fitting and adjusting of products to provide finished installation complying with the specified tolerances and finishes.

END OF SECTION 01045

## **SECTION 01050 - FIELD ENGINEERING**

### PART 1 - GENERAL

#### 1.1 DESCRIPTION

- A. Work included: Provide such field engineering services as are required for proper completion of the Work including, but not necessarily limited to:
  - 1. Establishing and maintaining lines and levels.
  - 2. Structural design of shores, forms, and similar items provided by the Contractor as a part of his means and methods of construction.
- B. Related work:
  - 1. Additional requirements for field engineering also may be described in other Section of these Specifications.
  - 2. See also General Conditions.

#### 1.2 SUBMITTALS

- A. Comply with pertinent provisions of Section 01340.
- B. Upon request of the Architect, submit:
  - 1. Certification, signed by the Contractor's retained field engineer, certifying that elevations and locations of improvements are in conformance or non-conformance with requirements of the Contract Documents.

#### 1.3 PROCEDURES

- A. In addition to procedures directed by the Contractor for proper performance of the Contractor's responsibilities:
  - 1. Locate and protect control points before starting work on the site.
  - 2. Preserve permanent reference points during progress of the Work.
  - 3. Do not change or relocate reference points or items of the Work without specific approval from the Architect.
  - 4. Promptly advise the Architect when a reference point is lost or destroyed or requires relocation because of other changes in the Work.
    - a. Upon direction of the Architect, require the field engineer to replace reference stakes or markers.
    - b. Locate such replacements according to the original survey control.
- B. The General Contractor shall employ a locator service to locate and mark all underground utilities as required.

PART 2 & 3 - NOT USED.

END OF SECTION 01050

## **SECTION 01090 - ABBREVIATIONS AND SYMBOLS**

### **PART 1 - GENERAL**

#### **1.1 REFERENCE TO APPLICABLE STANDARDS**

- A. Wherever reference is made to Codes, Standards Specifications or other data published by regulating agencies or accepted organizations, it shall be understood that such reference is made to the latest edition, (including addenda) published prior to the date of Contract Documents, except as noted specifically otherwise by date in the contract documents.
- B. Abbreviations and symbols used in the Specifications can be grouped into three (3) basic categories:
1. Abbreviations of reference symbols.
  2. Abbreviations of words and phrases.
  3. Symbols.
- C. Among those, which may be used in the Contract Documents, are the following (with respective abbreviation used):

AA	Aluminum Association
AAMA	Architectural Aluminum Manufacturers Association
AASHTO	American Association of State Highway and Transportation Officials
ABMA	American Boiler Manufacturers Association
ACI	American Concrete Institute
ACRI	Air Conditioning and Refrigeration Institute
ADC	Air Diffusion Council
AFI	Air Filter Institute
AGA	American Gas Association
AGCA	Associated General Contractors of America, Inc.
AIA	American Institute of Architects
AIMA	Acoustical and Insulating Materials Association
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ALS	American Lumber Standards
AMCA	Air Moving and Conditioning Association
ANSI	American National Standards Institute, Inc.
APA	American Plywood Association
API	American Petroleum Institute
ARI	Air Conditioning and Refrigeration Institute
ASAHC	American Society of Architectural Hardware Consultants
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for testing and Materials
ATI	Asphalt Tile Institute
AWI	Architectural Woodwork Institute
AWPA	American Wood Preservers Association
AWPI	American Wood Preservers Institute
AWS	American Welding Society
BHMA	Builders Hardware Manufacturers Association
BIA	Brick Institute of America
BRI	Building Research Institute
CABRA	Copper and Brass Research Association
CAGI	Compressed Air and Gas Institute

CE	Corps of Engineers (Army)
CRSI	Concrete Reinforcing Steel Institute
CSI	Construction Specifications Institute
CTI	Cooling Tower Institute
DFPA	Douglas Fir Plywood Association
ETL	Electrical Testing Laboratories
FGMA	Flat Glass Marketing Association
FHA	Federal Housing Administration
FM	Factory Mutual Engineering Division, Association of Factory Mutual Fire Insurance Companies
FPL	Forest Products Laboratory
FS	Federal Specifications
FTI	Facing Tile Institute
GA	Gypsum Association
GTA	Glass Tempering Association
HPMA	Hardwood Plywood Manufacturers Association
IBRM	Institute of Boiler and Radiator Manufacturers
IEEE	Institute of Electrical and Electronics Engineering
IES	Illuminating Engineering Society
JAN	Joint Army-Navy Specifications
MAC	Masonry Advisory Council
MIA	Marble Institute of America
MLMA	Metal Lath Manufacturers Association
MS	Military Specifications
MSS	Manufacturers Standardization Society of the Valves and Fitting Industries
MSTD	Military Standard
NAAMM	National Association of Architectural Metal Manufacturers
NAFM	National Association of Fan Manufacturers
NAPF	National Association of Plastic Manufacturers
NBHA	National Builders Hardware Association
NBS	National Bureau of Standards
NCMA	National Concrete Masonry Association
NEC	National Electric Code (NFPA Pamphlet No. 70)
NEMA	National Electric Manufacturers Association
NEMI	National Elevator Manufacturing Industry, Inc.
NFC	National Fire Code
NFPA	National Fire Protection Association
NFPA	National Forest Products Association
NHLA	National Hardwood Lumber Association
NHPMA	Northern Hardwood and Pine Manufacturers Association
NPA	National Particleboard Association
NPCA	National Paint and Coatings Association
NRMCA	National Ready Mixed Concrete Association
NSC	National Safety Council
NSF	National Sanitation Foundation
NTMA	The National Terrazzo and Mosaic Association, Inc.
NWMA	National Woodwork Manufacturers Association
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
PCI	Prestressed Concrete Institute
PEI	Porcelain Enamel Institute, Inc.
PS	Product Standard, U.S. Department of Commerce
RIS	Redwood Inspection Service
RTI	Resilient Tile Institute
SAE	Society of Automotive Engineers
SBI	Steel Boiler Institute
SCMA	Southern Cypress Manufacturers Association
SDI	Steel Deck Institute

SDI	Steel Door Institute
SJI	Steel Joint Institute
SMACCNA	Sheet Metal and Air Conditioning Contractors National Association
SMFMA	Sprayed Mineral Fiber Manufacturers Association, Inc.
SPIB	Southern Pine Inspection Bureau
SSPC	Steel Structures Painting Council
SWFPA	Structural Wood Fiber Products Association
TCA	Tile Council of America
TEMA	Tubular Exchange Manufacturing Association
TIMA	Thermal Insulation Manufacturers Association
TPI	Truss Plate Institute
UL	Underwriter's Laboratories, Inc.
UPC	Uniform Plumbing Code
WRI	Wire Reinforcement Institute
WWPA	Western Wood Products Association

1.2 ABBREVIATIONS OF WORDS AND PHRASES

- A. Abbreviations of words and phrases applicable to this Project; other than listed above for reference standards, shall be as per Architect's interpretation on request..

1.3 SYMBOLS

- A. Symbols representing construction materials and the equipment applicable to this Project shall be as shown on the Drawings.

PART 2 & 3 - NOT USED.

END OF SECTION 01090



## **SECTION 01200 - PROJECT MEETINGS**

### **PART 1 - GENERAL**

#### **1.1 DESCRIPTION**

- A. Work included: To enable orderly review during progress of the Work, and to provide for systematic discussion of problems, the Owner will conduct project meetings throughout the construction period.
- B. Related work:
  - 1. The Contractor's relations with his subcontractors and materials suppliers, and discussions relative thereto, are the Contractor's responsibility and normally are not part of project meetings content. If subcontractor's issues are of a concern, it can be communicated at this meeting, but management of the subcontractor will remain the responsibility of the Contractor.

#### **1.2 SUBMITTALS**

- A. Agenda items: To the maximum extent practicable, advise the Owner at least 24 hours in advance of project meetings regarding items to be included in or added to the agenda.
- B. Minutes:
  - 1. The Architect will compile minutes of each project meeting, and will furnish one copy to Contractor, Architect and required copies to the Owner.
  - 2. Recipients of copies may make and distribute such other copies as they wish.

#### **1.3 QUALITY ASSURANCE**

- A. For those persons designated by the Contractor to attend and participate in project meetings, provide required authority to commit the Contractor to solutions agreed upon in the project meetings.

### **PART 2 - PRODUCTS**

(No products are required in this Section)

### **PART 3 - EXECUTION**

#### **3.1 GENERAL**

- A. Except as noted below for Pre-construction Meeting, project meetings will be held monthly, unless project dictates differently.
- B. Coordinate as necessary to establish mutually acceptable schedule for meetings.

#### **3.2 PRECONSTRUCTION MEETING**

- A. Pre-construction Meeting will be held as soon as possible after the written Notice to Proceed.
  - 1. Provide attendance by authorized representatives of the Contractors and major subcontractors.
  - 2. The Owner will advise other interested parties, including the Architect, and request their attendance.

- B. Minimum agenda: Data will be distributed and discussed on at least the following items:
1. Organizational arrangement of Contractor's forces and personnel, and those of subcontractors, materials suppliers.
  2. Channels and procedures for communication.
  3. Construction schedule, including sequence of critical work.
  4. Contract Documents, including distribution of required copies of original Documents and revisions.
  5. Processing of Shop Drawings and revisions.
  6. Processing of Bulletins, field decisions, and Change Orders.
  7. Rules and regulations governing performance of the Work
  8. Procedures for safety and first aid, security, quality control, housekeeping, and related matters.

### 3.3 PROJECT MEETINGS

- A. Attendance:
1. To the maximum extent practical, assign the same person or persons to represent the Contractor at project meetings throughout progress of the Work.
  2. Subcontractors, materials suppliers, and others may be invited to attend those project meetings in which their aspect of the Work is involved.
- B. Minimum agenda:
1. Review progress of the Work since last meeting, including status of submittals for approval.
  2. Identify problems, which impede planned progress.
  3. Develop corrective measures and procedures to regain planned schedule.
  4. Complete other current business.

END OF SECTION 01200

## **SECTION 01310 - SCHEDULES AND REPORTS**

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General Conditions and other Division 1 specifications sections, apply to work of this section.

#### 1.2 DESCRIPTION

- A. Post Award Requirements
  - 1. Draft of Construction Schedule: Within two weeks of Date of Commencement of the Work, Contractor shall complete draft of time-scaled CPM Construction Schedule. (Bar chart is acceptable.)
  - 2. Level of Detail: Except for procurement and General Conditions requirements, differentiate activities on schedule so that no single activity shown requires more than twenty-one (21) calendar days to complete.
- B. Schedule of Values
  - 1. Within seven (7) days after completion of CPM Construction Schedule and before first pay request, Contractor shall submit Schedule of Values (see Section 01370) for review by the Architect allocating a dollar value for each activity on Construction Schedule. Dollar value for each activity will include cost broken into labor, materials, and pro rata contribution to overhead and profit. Subcontract sums will be identified on the Schedule of Values and broken down as described above.
- C. Approval
  - 1. Approval of Construction Schedule and Schedule of Values will be signified by the Architect and Contractor's joint signatures on one copy of each document. Thereafter, Project will be monitored with Construction Schedule, which Contractor shall use in planning, organizing, directing, coordinating, and executing the Work and which shall be the basis for evaluating the progress of the Work.
- D. Schedule Revisions
  - 1. General: Revisions to approved Construction Schedule must be approved in writing by Architect and Contractor.
  - 2. Contractor: Submit requests for revisions to schedule to Architect together with written rationale and description of logic for rescheduling work to maintain Specific Contractual Milestone Dates.
    - a. Proposed revisions acceptable to the Architect will be incorporated into next update of Construction Schedule by the Contractor.
  - 3. Owner: Changes initiated by Owner and implemented by Change Orders which have potential to affect critical dates will require Contractor to prepare revised schedule for the Architect's concurrence. The Architect's approved revisions will be incorporated into the Construction Schedule. Adjustments in scheduled completion dates, either for intermediate activities or for Contract as a whole, will be considered only to extent that there is not sufficient float to absorb the revisions accepted.
- E. Recovery Schedule
  - 1. General: Should updated Construction Schedule show Contractor to be fourteen (14) or more days behind schedule at any time during construction, the Architect may require Contractor to prepare Recovery Schedule, displayed in

- CPM format, which will display Contractor's plan for returning to schedule within subsequent pay period.
2. Schedule Preparation: Within seven (7) days after notice from the Architect, prepare and submit to the Architect a Recovery Schedule, incorporating best available information from Subcontractors and others which will permit return to Construction Schedule within subsequent pay period. Prepare Recovery Schedule to same level of detail as Construction Schedule.
  3. Schedule Assessment: Seven (7) days prior to expiration of Recovery Schedule, confer with the Architect to assess effectiveness of Recovery Schedule. As a result of this conference, the Architect will direct Contractor as follows:
    4. Behind Schedule: If the Architect determines Contractor is still behind schedule, the Architect will direct Contractor to prepare another Recovery Schedule for subsequent pay period.
    5. On Schedule: If the Architect determines Contractor has successfully complied with provisions of Recovery Schedule, the Architect will direct Contractor to return to use of Construction Schedule.

PARTS 2 & 3 - NOT USED.

END OF SECTION 01310

## **SECTION 01340 - SUBMITTALS AND SUBSTITUTIONS**

### **PART 1 - GENERAL**

#### **1.1 DESCRIPTION**

- A. Work included: Make submittals required by the Contract Documents, and revise and resubmit as necessary to establish compliance with the specified requirements.
- B. Related work:
  - 1. Documents affecting work of this Section include but are not necessarily limited to General Conditions Amendments to General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
  - 2. Individual requirements for submittals also may be detailed in pertinent Sections of these Specifications.
- C. Work not included:
  - 1. Unrequired submittals will not be reviewed by the Architect/Owner.
  - 2. The Contractor may require his subcontractors to provide drawings, setting diagrams, and similar information to help coordinate the Work, but such data shall remain between the Contractor and his subcontractors and will not be reviewed by the Architect/Owner.

#### **1.2 SUBMITTALS**

- A. Make submittals of Shop Drawings, Samples, substitution requests, and other items in accordance with the provisions of this Section.
- B. Coordination of Submittals:
  - 1. Prior to each submittal, carefully review and coordinate all aspects of each item being submitted.
  - 2. Verify that each item and the submittal for it CONFORMS IN ALL RESPECTS to the specified requirements.
  - 3. By affixing his signature to each submittal, the Contractor certifies that THIS COORDINATION HAS BEEN PERFORMED.
  - 4. The Contractor shall stamp the shop drawings as "Approved" or "Approved as Noted" before submitting to Architect/Owner for review.

#### **1.3 QUALITY ASSURANCE**

- A. "Equals" and "Substitutions"
  - 1. The Contract is based on the standards of quality established in the Contract Documents. Requests for substitutions will be considered when submitted according to the procedures set forth below.
    - a. Particularly with regard to MAJOR materials, equipment or methods proposed for the Work as set forth in the Contract Documents, Contractor's request(s) for approvals of "equals" not specifically named in the Contract Documents MUST BE SUBMITTED IN WRITING with supporting documentation, and in the hands of the Architect/Owner prior to contract award. Telephone requests for consideration of proposed "equals" will not be accepted.
    - b. On other items of Work, Contractor may request consideration of substitution, when submitted in writing with supporting documentation within thirty (30) days following the Notice to Proceed.

- B. Where the phrase "or equal" or "equal as approved by Architect/Owner" occurs in the Contract Documents, do not assume that the Contractor's choice of materials, equipment, or methods will be approved as equal unless the item has been specifically approved for this Work by the Architect/Owner.
- C. Do not substitute materials, equipment, or methods unless such substitution has been specifically approved in writing for this Work by the Architect/Owner.

## PART 2 - PRODUCTS

### 2.1 SHOP DRAWINGS

- A. Scale and Measurements: Make Shop Drawings accurately to a scale sufficiently large to show all pertinent aspects of the item and its methods of connection to the Work.
- B. Types of prints required:
  - 1. Submit Shop Drawings in electronic format.
- C. Review comments of the Architect/Owner will be shown in red on prints and returned to the Contractor. The Contractor may make and distribute such copies as are required for his purposes.
- D. Please note ALL shop drawings MUST be approved and stamped by the G.C. before submitting to the Architect. Any unreviewed and approved by the G.C. shop drawings will be returned to the Contractor unreviewed.

### 2.2 MANUFACTURER'S LITERATURE

- A. Where contents of submitted literature from the manufacturers includes data not pertinent to the submittal, clearly show which portions of the contents are being submitted for review.

### 2.3 SAMPLES

- A. Provide Sample or Samples identical to the precise article proposed to be provided. Identify as described under "Identification of Submittals" below.
- B. Number of Samples required:
  - 1. Unless otherwise specified, submit one sample in the quantity, which is required to be returned, plus one which will be retained by the Architect/Owner.
  - 2. By prearrangement in specific cases, a single Sample may be submitted for review and, when approved, be installed in the Work at a location agreed upon by the Architect/Owner.
  - 3. Except as noted in 2.3.B.2 above, no selections of color, texture or finish will be approved by the Architect/Owner until ALL substitutions have been approved by the Architect/Owner, and ALL necessary samples and color, texture, finish proposals have been submitted in their entirety by the Contractor, in order that a coordinated, total scheme may be developed by the Architect/Owner.

## PART 3 - EXECUTION

### 3.1 IDENTIFICATION OF SUBMITTALS

- A. Consecutively number all submittals. (ie: G-1, G-2.....etc. for General Construction, P-1, P-2, .... etc. for Plumbing; M-1, M-2, .....etc. for Mechanical (HVAC); E-1, E-2, ....etc. for

Electrical; SP-1, SP-2....etc for Sprinkler System; SU-1, SU-2, ... etc. for Site/Utilities.

1. When material is resubmitted of any reason, transmit under a new letter of transmittal and with a shop drawing number. (G-1r)
  2. On resubmittals, cite the original submittal number for reference.
- B. Accompany each submittal with a letter of transmittal showing all information required for identification and checking.
- C. On at least the first page of each submittal, and elsewhere as required for positive identification, show the submittal number in which the item was included.
- D. Maintain an accurate submittal log for the duration of the Work, showing current status of all submittals at all times. Make the submittal log available to the Architect/Owner for his review upon request.

### 3.2 GROUPING OF SUBMITTALS

- A. Unless otherwise specified, make submittals in groups containing all associated items to assure that information is available for checking each item when it is received.
1. Partial submittals may be rejected as not complying with the provisions of the Contract.

### 3.3 TIMING OF SUBMITTALS

- A. Make submittals far enough in advance of schedule dated for installation to provide time required for reviews, for securing necessary approvals, for possible revisions and resubmittals, and for placing orders and securing delivery. All submittals shall be submitted within sixty (60) days of the notice to proceed.

### 3.4 ARCHITECT/OWNER REVIEW

- A. Review by the Architect/Owner does not relieve the Contractor from responsibility for errors, which may exist in the submitted data.
- B. Revisions
1. Make revisions required by Architect/Owner.
  2. If the Contractor considers any required revision to be a change, he shall so notify the Architect/Owner as provided in the General Conditions.
  3. Make only those revisions directed or approved by the Architect/Owner.
- C. Reimbursement of Architect/Owner's Costs
1. In the event substitutions are proposed to the Architect/Owner after the Contract has been awarded, the Architect/Owner will record all time used by him and by his consultants in evaluation of each such proposed substitution.
  2. Whether or not the Architect/Owner approves a proposed substitution, the Contractor, promptly upon receipt of the Architect/Owner's billing, reimburse the Architect/Owner at the rate of two and one-half times the direct cost to the Architect/Owner and his consultants for all the time spent by them in evaluating the proposed substitution.

END OF SECTION 01340

## **SECTION 01370 - SCHEDULE OF VALUES**

### PART 1 - GENERAL

#### 1.1 DESCRIPTION

- A. Work included: Provide a detailed breakdown of the agreed Contract sum showing values allocated to each of the various parts of the Work, as specified herein and in other provisions of the Contract Documents.
- B. Related work:
  - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Amendments to General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
  - 2. Schedule of values may be described on the continuation sheet of AIA document G702 accompanying applications for payment.
  - 3. Schedule of values is required under Paragraph 9.2 of the General Conditions.

#### 1.2 QUALITY ASSURANCE

- A. Use required means to assure arithmetical accuracy of the sums described.
- B. When so required by the Architect/Owner, provide copies of the subcontracts or other data acceptable to the Architect/Owner, substantiating the sums described.

#### 1.3 SUBMITTALS

- A. Prior to first application for payment, submit a proposed schedule of values to the Architect/Owner. See Section 01310.
  - 1. Meet with the Architect/Owner and determine additional data, if any, required to be submitted.
    - a. Mobilization, Submittal Review, Material Delivery, Execution of the Work, and Punchlisting shall be included in the schedule.
    - b. Mobilization shall be billed on a monthly basis equally distributed throughout construction contract time.
    - c. Materials and Labor breakdowns should be provided for each portion of work.
  - 2. Secure the Architect/Owner's approval of the schedule of values prior to submitting first application for payment.

PART 2 & 3 - NOT USED.

END OF SECTION 01370



## **SECTION 01500 - TEMPORARY FACILITIES AND CONTROLS**

### PART 1 - GENERAL

#### 1.1 DESCRIPTION

- A. Work included: Provide temporary facilities and controls needed for the Work including, but not necessarily limited to:
  - 1. Temporary utilities such as heat, water, electricity, facsimile machine and telephone
  - 2. Sanitary facilities
  - 3. Enclosures such as tarpaulins, barricades, and canopies
  - 4. Project sign
  - 5. Field office for the Contractor's personnel
  - 6. Temporary fencing of the construction site
  
- B. Related work:
  - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Amendments to General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
  - 2. Except that equipment furnished by subcontractors shall comply with requirements of pertinent safety regulations, such equipment normally furnished by the individual trades in execution of their own portions of the Work are not part of this Section.
  - 3. Permanent installation and hookup of the various utility lines are described in other Sections.

#### 1.2 PRODUCT HANDLING

- A. Maintain temporary facilities and controls in proper and safe condition throughout progress of the Work.

#### 1.3 LOCAL REGULATIONS

- A. Comply with all local ordinances including local and temporary facilities, parking and storage.

### PART 2 - PRODUCTS

#### 2.1 UTILITIES

- A. Water:
  - 1. The Contractor and his Plumbing Subcontractor to provide necessary temporary piping and water supply and, upon completion, remove such temporary facilities. Owner will pay the water bill for reasonable usage of water.
  
- B. Electricity:
  - 1. The Contractor and his Electrical Subcontractor to provide necessary temporary wiring and, upon completion of the Work, remove such temporary facility.

2. Provide area distribution boxes so located that the individual trades may furnish and use 100' maximum length extension cords to obtain power and lighting at points where needed for work, inspection, and safety.
  3. Owner will pay electric bill for reasonable usage of electricity.
- C. Heating: Provide and maintain temporary heat necessary for proper conduct of operations needed in the Work.
- D. Telephone:
1. Make necessary arrangements and pay costs for installation and operation of telephone service to the Contractor's office at the site.
- E. E-MAIL:
1. Make necessary arrangements and pay costs for installation and operation of email to the contractor's office at the site.
  2. Contractor shall maintain a digital camera at the site for minimum 10 progress photos daily to be emailed to Architect/Owner.
- F. Temporary Fire Protection:
1. Contractor to provide any and all temporary construction fire extinguishers and standpipes required for the duration construction.

## 2.2 FIELD OFFICES AND SHEDS

- A. Contractor's Facilities:
1. Provide a field office building and sheds adequate in size and accommodation for Contractor's offices, supply and storage.
  2. Within the Contractor's facilities, provide enclosed space adequate for holding project meetings. Furnish with table, chairs, and utilities.
- B. Sanitary facilities:
1. Provide temporary sanitary facilities in the quantity required for use by all personnel.
  2. Always maintain in a sanitary condition.

## 2.3 ENCLOSURES

- A. Provide and maintain for the duration of construction all scaffolds, tarpaulins, canopies, warning signs, steps, platforms, bridges, and other temporary construction necessary for proper completion of the Work in compliance with pertinent safety and other regulations.
  - 1. All apparatus, equipment, temporary and permanent construction shall meet all local and State labor laws and safety regulations applicable thereto.

## 2.4 TEMPORARY FENCING

- A. Contractor will provide a temporary fence of design and type needed to prevent entry onto the Work by the public. Contractor shall coordinate installation and location. It shall be the Contractor's responsibility to maintain the fence for the duration of the construction.

## 2.5 PROJECT SIGN

- A. Project signs shall only be installed where approved by Architect/Owner.
- B. Upon completion of the Work, demount the project signs.
- C. Except as otherwise specifically approved by the Architect/Owner, do not permit other signs or advertising on the job site.

## PART 3 - EXECUTION

### 3.1 MAINTENANCE AND REMOVAL

- A. Maintain temporary facilities and controls as long as needed for safe and proper completion of the Work.
- B. Remove such temporary facilities and controls as rapidly as progress of the Work will permit, or as directed by the Architect/Owner.

### 3.2 TRAFFIC COORDINATION

- A. Any construction related activities, such as receiving, loading, unloading, or other activities which may be an interruption to normal vehicular traffic flow on the site shall be coordinated in advance by the Contractor with the Owner or public authority having jurisdiction.

END OF SECTION 01500

## **SECTION 01620 - PRODUCT HANDLING**

### PART 1 - GENERAL

#### 1.1 DESCRIPTION

- A. Work Included: Protect products scheduled for use in the Work by means including, but not necessarily limited to, those described in this Section.
- B. Related work:
  - 1. Documents affecting work of this Section include, but are not necessarily limited to the General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
  - 2. Additional procedures also may be prescribed in other Sections of these Specifications.

#### 1.2 QUALITY ASSURANCE

- A. Include within the Contractor's quality assurance program such procedures as are required to assure full protection of work and materials.

#### 1.3 MANUFACTURER'S RECOMMENDATIONS

- A. Except as otherwise approved by the Architect/Owner, determine and comply with manufacturer's recommendations on product handling, storage and protection.

#### 1.4 PACKAGING

- A. Deliver products to the job site in the manufacturer's original containers with labels intact and legible.
  - 1. Maintain packaged materials with seals unbroken and labels intact until time of use.
  - 2. Promptly remove damaged material and unsuitable items from the job site, and promptly replace with material meeting the specified requirements at no additional cost to the Owner.
- B. The Architect/Owner may reject as non-complying, material and products that do not bear identification satisfactory to the Architect/Owner as to manufacturer, grade, quality, and other pertinent information.

#### 1.5 PROTECTION

- A. Protect finished surfaces, including jambs and soffits of openings used as passageways, through which equipment and materials are handled.
- B. Provide protection for finished floor surfaces in traffic are prior to allowing equipment or materials to be moved over such surfaces.
- C. Maintain finished surfaces clean, unmarred, and suitably protected until accepted by the Owner.

#### 1.6 REPAIRS AND REPLACEMENTS

- A. In the event of damage, promptly make replacement sand repairs to the approval of the Architect/Owner, and at no additional cost to the Owner.
- B. Additional time required to secure replacements and to make repairs will not be considered by the Architect/Owner to justify an extension in the Contract Time of Completion.

END OF SECTION 01620

## **SECTION 01710 - CLEANING**

### PART 1 - GENERAL

#### 1.1 DESCRIPTION

- A. Work included: Throughout the construction period, maintain the building and site in a standard of cleanliness as described in this Section.
- B. Related work:
  - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Amendments to General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
  - 2. In addition to standards described in this Section, comply with requirements for cleaning as described in pertinent other Sections of these Specifications.

#### 1.2 QUALITY ASSURANCE

- A. Conduct daily inspection to verify that requirements for cleanliness are being met.
- B. In addition to the standards described in this Section. Comply with pertinent requirements of governmental agencies having jurisdiction.

### PART 2 - PRODUCTS

#### 2.1 COMPATIBILITY

- A. Use only the cleaning materials and equipment, which are compatible with the surface being cleaned, as recommended by the manufacturer of the material.

### PART 3 - EXECUTION

#### 3.1 PROGRESS CLEANING

- A. General:
  - 1. Retain stored items in an orderly arrangement allowing maximum access, not impeding traffic or drainage, and providing required protection of materials.
  - 2. Do not allow accumulation of scrap, debris, waste material, and other items not required for construction of this Work.
  - 3. At least twice each month, and more often if necessary, completely remove all scrap, debris, and waste material from the job site.
  - 4. Provide adequate storage for all items awaiting removal from the job site, observing requirements for fire protection and protection of the ecology.
  - 5. The building shall be cleaned daily of all debris and waste material resulting from the construction operations.

END OF SECTION 01710

## **SECTION 01720 - PROJECT RECORD DOCUMENTS**

### **PART 1 - GENERAL**

#### **1.1 RECORD DRAWINGS**

- A. Contractors shall maintain a set of Record Drawings at the project site. These shall be kept legible and current, and shall be available at all times for the inspection of the Architect/Owner. All differences or changes in the contract work, or work added, shall be recorded daily on these Record Drawings in a contrasting color.
- B. The Architect/Owner shall approve the Record Drawings.
- C. Receipt and approval of Record Drawings are prerequisites for final payment.

#### **1.2 MANUALS**

- A. Each Contractor shall submit to the Architect/Owner before final acceptance electronic copies of all installation, operating instructions, and maintenance instructions on the equipment and materials furnished under his contract. Each set shall be organized into electronic folders. Label folders designating the name of the project, the names of the Owner, the name of the Contractor, and the equipment or materials included in the manual.

#### **1.3 GUARANTEES AND WARRANTIES**

- A. Contractors shall submit to the Architect/Owner before final acceptance three originals of all warranties, guarantees, and surety bonds. All such documents shall show the name and location of the project and the name of the Owner.

PART 2 & 3 - NOT USED.

END OF SECTION 01720

## **SECTION 04100 - MORTAR**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and General Provisions of Contract, including General Conditions, Amendments to General Conditions, and Supplementary Conditions and Sections in Division 1 of the Specifications apply to work of this Section.

#### **1.2 DESCRIPTION**

- A. Work included in this Section:
  - 1. The work required under this specification consists of all Mortar and Grout for the masonry work under various sections of the specifications.

#### **1.3 QUALITY ASSURANCE**

- A. A representative sample of the sand shall be obtained for each job and tested as specified herein below by an independent testing laboratory selected by the Architect, and paid for by the Owner.

#### **1.4 DELIVERY AND STORAGE OF MATERIALS**

- A. Portland Cement, lime, and/or pre-packaged mortar cement mixes shall be delivered to the site and stored in unbroken bags or other approved containers. These materials shall be stored in dry, weather tight sheds or enclosures with elevated floors, which will prevent the inclusion of foreign materials and damage by water or dampness. Masonry sand shall be delivered and stored in a manner to prevent inclusion of foreign materials. Concrete masonry which is chipped, cracked, broken, or marred in other manner shall not be used where exposed to view.

#### **1.5 ENVIRONMENTAL CONDITIONS**

- A. Hot Weather Installation: The following precautions shall be taken if masonry is erected when the ambient air temperature is more than 37 degrees C (99 degrees F) in the shade and the relative humidity is less than 50 percent.
  - 1. All masonry materials shall be shaded from direct sunlight; mortar beds shall be spread no more than 1.2 m (4 feet) ahead of masonry; masonry units shall be set within one minute of spreading mortar; and after erection, masonry shall be protected from direct exposure to wind and sun for 48 hours.
- B. Cold Weather Installation: Before erecting masonry when ambient temperature or mean daily air temperature falls below 4 degrees C, (40 degrees F,) a written statement of proposed cold weather construction procedures shall be submitted for approval. The following precautions shall be taken during all cold weather erection.
  - 1. Preparation: Ice or snow formed on the masonry bed shall be thawed by the application of heat. Heat shall be applied carefully until the top surface of the masonry is dry to the touch. Sections of masonry deemed frozen and damaged shall be removed before continuing construction of those sections.

2. Air Temperature 4 to 0 degrees C (40 to 32 Degrees F): Sand or mixing water shall be heated to produce mortar temperatures between 4 degrees C and 49 degrees C. (40 degrees F and 120 degrees F).
3. Air Temperature 0 to minus 4 degrees C (32 to 25 Degrees F): Sand and mixing water shall be heated to produce mortar temperatures between 4 degrees C and 49 degrees C. (40 degrees F and 120 degrees F.) Temperature of mortar on boards shall be maintained above freezing.
4. Air Temperature minus 4 to minus 7 degrees C (25 to 20 Degrees F): Sand and mixing water shall be heated to provide mortar temperatures between 4 degrees C and 49 degrees C. (40 degrees F and 120 degrees F.) Temperature of mortar on boards shall be maintained above freezing. Sources of heat shall be used on both sides of walls under construction. Windbreaks shall be employed when wind is in excess of 24 km/hour. (15 mph.)
5. Air Temperature minus 7 degrees C (20 Degrees F) and Below: Sand and mixing water shall be heated to provide mortar temperatures between 4 degrees C and 49 degrees C. (40 degrees F and 120 degrees F.) Enclosure and auxiliary heat shall be provided to maintain air temperature above 0 degrees C. (32 degrees F.) Temperature of units when laid shall not be less than minus 7 degrees C. (20 degrees F.)
6. Completed Masonry and Masonry Not Being Worked On:
  - a. Mean daily air temperature 4 degrees C to 0 degrees C. (40 degrees F to 32 degrees F.) Masonry shall be protected from rain or snow for 24 hours by covering with weather-resistive membrane.
  - b. Mean daily air temperature 0 degrees C to minus 4 degrees C. (32 degrees F to 25 degrees F.) Masonry shall be completely covered with weather-resistive membrane for 24 hours.
  - c. Mean daily air temperature minus 4 degrees C to minus 7 degrees C. (25 degrees F to 20 degrees F.) Masonry shall be completely covered with insulating blankets or equally protected for 24 hours.
  - d. Mean daily temperature minus 7 degrees C (20 degrees F) and below. Masonry temperature shall be maintained above 0 degrees C (32 degrees F) for 24 hours by enclosure and supplementary heat, by electric heating blankets, infrared heat lamps, or other approved methods.

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS**

- A. Cement shall be Portland Cement, Type I or II, meeting Standard Specifications for Portland Cement (ASTM C-150).
- B. Sand shall meet the requirements of Standard Specifications for Aggregate for Masonry Mortar (ASTM C-144-81), with the gradation to satisfy paragraph 3, Grading, and with the omission of subparagraph 3.4.
- C. Hydrated Lime shall meet the requirements of the Standard Specifications for Hydrated Lime for Masonry Purposes (ASTM C-207), Type S.



- D. Hydraulic Hydrated Lime shall meet the requirements of the Standard Specifications for Hydraulic Hydrated Lime for Structural Purposed (ASTM C-141).
- E. Water shall be potable.
- F. Air-entraining admixtures may be utilized and shall conform to ASTM C-260, as shall admixture workability.
- G. Provide water resistant admixture.
- H. Colored mortar to match existing.

## 2.2 PRE-PACKAGED MORTAR MIXES

- A. Pre-packaged mortar cements may be used with prior approval of the Architect. To be considered, the mortar cement manufacturer shall submit a request to the Architect in sufficient time for the proposed material to be tested and evaluated prior to its approval for a specific project. The mortar cement shall be in accordance with ASTM C-91-83, and meet the following minimum requirements:
  - 1. Type S Mortar Cement. The masonry mortar made from the mortar cement shall have a compressive strength of 1800 psi minimum at 28 days when tested in accordance with ASTM C-270, with maximum air volume of 16%.
  - 2. The mortar cement shall contain Portland Cement, hydrated lime, plasticizing admixtures, and/or hydraulic hydrated lime. Mortar cement mixes that contain other materials, including ground limestone, ground slag or other cementitious or non-cementitious materials, are not acceptable.
- B. Instructions for mixing the mortar mix shall be published and accompany all shipments. The instructions shall be volumetric measurements, and shall be developed to show proper proportions of sand to one (1) bag of the prepackaged mortar cement with volume of water to produce a flow of the proper consistency.
- C. Freeze-thaw Resistance: The mortar cement shall comply with the following requirements when subjected to 50 cycles of the freeze-thaw test:
  - 1. Loss of compressive strength: 35% maximum
  - 2. Loss in dry weight: 1.0% maximum
- D. The test specimen shall be made in accordance with ASTM C-91, Paragraph 18, 19 and 20 and be tested in accordance with ASTM C-01, Paragraphs 22.1 and 22.2.1 and ASTM C-67, Paragraph 8.1, 8.3 and 8.4.
  - 1. Colored mortar will be required for all rock-cast concrete masonry. Colored mortar shall be field batched mortar with coloring agent added in field. Tests will be required to insure the coloring agent does not affect properties of the mortar. No pre-packaged mortar with coloring agents is acceptable. Colored mortar is to match rock-cast.

## 2.3 ON-THE-JOB-MORTAR CEMENT

- A. Type S. mortar shall have a compressive strength of 1800 psi minimum at 28 days. The mortar shall be proportioned within the following volumetric limits:
  - 1. 1 part Portland Cement
  - 2. 1/2 part Hydrated Lime
  - 3. Masonry sand measured in a damp loose condition is to be not less than 2-1/4 and not more than 3 times the sum of the volumes of cement plus lime used.

4. Plasticizer per instructions of the manufacturer, the quantity of which is not to exceed 2% by volume of the cement and lime combination.

#### 2.4 MEASUREMENT AND MIXING

- A. The method of measuring material shall be by volume and shall be such that the specified proportions of the mortar materials can be controlled and accurately maintained. A measuring device to make consistent volume measurements shall be used throughout the project. Measurement of sand by shovel will not be permitted.
- B. Mortar Mixer shall be paddle-type mechanical mixer. It shall be of such design and size to accommodate the mix without overloading, and be adequately powered to vigorously mix the ingredients.
- C. The mortar mixer shall be charged in this order: add approximately one-half the water required, one-half the sand, the cement and lime (or prepackaged mortar cement), the remaining amount of sand, and then sufficient water to bring the mix to desired consistency. Mortar shall be mixed for a minimum of five minutes after all materials have been charged into the mixer with all batches being mixed to the same consistency.
- D. Mortars that have stiffened because of evaporation of water from the mortar may be retempered by adding water as frequently as needed to restore the required consistency. Mortars shall be used and placed in their final position within 2 hours after mixing. When the temperature is over 80 degrees F., the mortar shall be used within 1-1/2 hours of mixing. Mortar not used within these time periods shall be discarded.

END OF SECTION 04100

## **SECTION 04150 - MASONRY ACCESSORIES**

### **PART 1 - GENERAL**

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General Conditions, Amendments to General Conditions, and Supplementary Conditions and Sections in Division 1 of the Specifications apply to work of this section.

#### 1.2 DESCRIPTION

- A. Work Included in this Section:
  - 1. Metal joint-reinforcement and anchors as specified herein.
- B. Related Work Specified Elsewhere:
  - 1. Mortar (Section 04100)
  - 2. Concrete Unit Masonry (Section 04220)

#### 1.3 SUBMITTALS

- A. Samples: Submit samples of the following:
  - 1. Joint Reinforcement:
    - a. Submit one piece of joint-reinforcement for wall intersections.

#### 1.4 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials for work of this Section in Manufacturer's original packaging and protection. Labels shall be intact and legible.
- B. Store materials under cover, and off the ground to protect from wetting, dirt and physical damage.
- C. For joint-reinforcement, anchors and ties, remove any loose rust, scale, dirt and other coatings that would reduce the bond to mortar. Remove by wire brushing prior to installation.

### **PART 2 - PRODUCTS**

#### 2.1 MATERIALS

- A. Masonry Joint Reinforcement:
  - 1. Types specified herein are as manufactured by AA Wire Products Co., Chicago, Illinois. Equivalent reinforcement will be acceptable as manufactured by Dayton Sur-Grip and Shore Co.; Conover Steel and Wire Co., Inc.; Dur-O-Wal, Inc., or approved equal.
  - 2. Reinforcement for concrete-unit-masonry walls and partitions of single thickness of masonry units shall be Blok-Lok (AS500), Extra Heavy, hot-dipped galvanized after fabrication.
  - 3. Width of reinforcement shall be 2" less than the nominal wall thickness.
  - 4. Provide prefabricated "Tees" at all abutting walls.

### **PART 3 - EXECUTION**

#### 3.1 ACCESSORY INSTALLATION

- A. Installation of masonry accessories shall be as specified in Section of the Project Manual on unit masonry.

END OF SECTION 04150

## **SECTION 04200 - UNIT MASONRY**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Face Brick
  - 2. Accent Brick
  - 3. Reinforcement, Anchorage and Accessories
  
- B. Related Documents:
  - 1. Division 0 - Bidding and General Conditions, Division 1 - General Requirements, all applicable provisions in the Technical Specification Sections of Divisions 2 through 16 and applicable drawings apply to this Section.
  
- C. Related Sections:
  - 1. Joint Sealers: Division 7
  - 2. Flashing and Sheet Metal: Division 7
  - 3. Building Insulation: Division 7

#### **1.2 SUBMITTALS**

- A. Product Data: Submit published data from manufacturers of products and accessories specified, indicating compliance with requirements.
  
- B. Verification Samples: Submit mock-up panels comprised of the following actual materials; include no fewer than four masonry unit samples displaying extremes of color and texture variation to be anticipated in the completed construction:
  - 1. Face Brick: To match adjacent campus buildings.
  - 2. Mortar Samples.
  
- C. Factory Test Reports: Submit efflorescence test reports on masonry units that are to be exposed to weathering.
  
- D. Test Reports: Submit test reports from an independent testing agency indicating compliance with industry standards.

#### **1.3 QUALITY ASSURANCE**

- A. Brick Unit Masonry: ASTM C 216, and Brick Institute of America.
  
- B. Mock-up: Prior to commencement of exposed masonry work, erect sample panel to serve as standard of appearance and workmanship throughout construction period.
  - 1. Build at location and design indicated on drawings, or as otherwise directed by the Architect.
  - 2. Adjust until mock-up appearance and workmanship are acceptable to the Architect.

3. Upon completion of construction and at the direction of the architect, demolish mock-up construction completely and remove debris.
- C. Source Control: Obtain each type of exposed masonry unit from a single manufacturer, with texture and color of each type uniform or of a uniform blend acceptable to the Architect.

#### 1.4 DELIVERY, STORAGE AND HANDLING

- A. Deliver, handle and store masonry units by means which will prevent mechanical damage and deterioration due to moisture, temperature changes, and contamination by other materials.
1. Provide protection which will limit moisture absorption of concrete masonry units to the maximum percentage specified for Type I units at a relative humidity which is normal for the project site.
- B. Protect cementitious materials from precipitation and absorption of ground moisture.
- C. Store masonry accessories to prevent corrosion, dirt accumulation, and other deterioration.

#### 1.5 PROJECT CONDITIONS

- A. Construction Protection: Cover tops of incomplete masonry elements with waterproof sheet material at end of each work day and when masonry work is not under way.
1. Secure weather protection in place with weights or by use of temporary fasteners.
  2. Immediately remove mortar, soil, and other such materials from exposed masonry faces to prevent staining.
  3. Prevent splashing and soiling of masonry near ground level by spreading sheet material to cover soil or masonry faces.
  4. Protect horizontal masonry elements from mortar droppings.
- B. Loading Protection: Do not apply uniform floor or roof loads for at least 12 hours, or concentrated loads for at least 3 days, after completion of masonry elements.
- C. Cold Weather Protection: Do not lay masonry units when outside air temperature is below 40 degrees F.
1. Grouted Construction: On any day when minimum anticipated nighttime temperature is 32 degrees F or less, in addition to complying with general procedures above, heat grout materials to 90 degrees F to produce in-place grout temperature of not less than 70 degrees F at end of work day. Retain protective blankets or enclosures for not less than 48 hours.
  2. Water: Do not heat water for mortar or grout to more than 160 degrees F.

- D. Hot Weather Protection: Cover or shade masonry units and mortar materials and use cool water for mortar whenever ambient air temperature is 90 degrees F or greater. At air temperatures of 85 degrees F or above, if relative humidity is less than 30 percent or wind is in excess of 15 miles per hour, provide protection by immediately covering newly constructed walls, by providing windbreaks, or by using fog spray to reduce rate of evaporation.

## **PART 2 - PRODUCTS**

### **2.1 UNIT MASONRY**

- A. Face Brick: ASTM C 216 and as follows:
  - 1. Provide face brick as indicated elsewhere in the contract documents.
  - 2. Provide brick of color texture and physical properties noted:
    - a. Grade: SW
    - b. Compressive Strength: 6400 P.S.I.
    - c. Size: Modular
    - d. Color and Pattern: To be selected.
    - e. Brick Allowance: \$350/Thousand (Brick Only) Taxes, delivery, mortar, installation, labor, accessories to be included in the base bid and not the allowance.

2.2 MASONRY CLEANER: Use brick manufacturer's recommended cleaning procedures only.

2.3 CONCEALED FLASHING MATERIAL: Composite flashing (copper coated on both sides with asphaltic material).

## **PART 3 - EXECUTION**

### **3.1 INSTALLATION PROCEDURES**

- A. Reinforcement and Anchorage: Before placing metal masonry accessories, remove loose rust, dirt, and other coatings.
- B. Masonry Thickness: Build masonry elements to full thickness shown.
  - 1. Build single-wythe walls to actual thickness of masonry units.
- C. Chases and Recesses: Build masonry to accommodate the work of other trades, including chases and recesses as shown or required. Provide not less than 8 inches of masonry between jambs of openings and chases and recesses.
- D. Openings for Equipment and Services: Leave openings in masonry as required for subsequent installation of equipment and services. Make openings in designated locations and in exact size required, if known; otherwise, leave rough openings in approximate size required and complete masonry work after installation of equipment, matching adjoining masonry.
- E. Cutting: Where cutting is required, use power saws to provide clean, sharp, unchipped edges.
  - 1. Do not use wet cutting techniques with concrete unit masonry.

### 3.2 CONSTRUCTION TOLERANCES

- A. Variation from Plumb: Do not exceed the following construction tolerances in vertical elements, including surfaces of walls, columns and arises:
1. ¼ inch in 10 feet.
  2. 3/8 inch in one story height, or 20 feet, whichever is less, except 1/4 inch for external corners, expansion joints, and other highly conspicuous vertical elements.
  3. 1/2 inch in 40 feet or more.
  4. Plus or minus 1/4 inch in 10 feet, 1/2 inch maximum, for vertical alignment of head joints.
- B. Variation from Level: Do not exceed the following construction tolerances for bed joints and lines of exposed lintels, sills, parapets, horizontal grooves, and other conspicuous horizontal elements:
1. 1/4 inch in one bay or in 10 feet maximum.
  2. 1/2 inch in 20 feet or more.
- C. Variation from Plan Lines: Do not exceed the following horizontal construction tolerances for related portions of columns, walls, and partitions:
1. 1/2 inch in any bay or in 20 feet maximum.
  2. 3/4 inch in 40 feet or more.
- D. Variation in Cross Section: Do not exceed the following construction tolerances for thickness of walls and other masonry elements:
1. Minus 1/4 inch.
  2. Plus 1/2 inch.
- E. Variation in Mortar Joint Thickness: Do not exceed the following construction tolerances for thickness of mortar joints:
1. Bed joints: Plus or minus 1/8 inch.
  2. Head joints: Minus 1/4 inch, plus 3/8 inch.

### 3.3 MASONRY CONSTRUCTION - GENERAL

- A. Layout: Lay out masonry for accurate pattern bond, for uniform joint widths, and for accurate location of specific features before beginning actual construction. Avoid use of masonry units of less than 1/2 size. Do not use units with less than nominal 4-inch horizontal face dimensions at corners and jambs.
- B. Pattern Bond: Lay exposed masonry in running bond except where other bonds are indicated at special features.
1. Lay concealed masonry in running bond, or lap units at least 2 inches.
  2. Interlock wythes at corners and offsets in each course with masonry bond.

- C. Stopping Work: Lay masonry in proper sequence to avoid toothing. Rack walls back in each course at end of each work day. Before resuming, clean exposed surfaces and remove loose masonry units and mortar.
- D. Built-in Work: As work progresses, build in items indicated for installation in masonry, filling around built-in items solidly with masonry.
  - 1. Fill joints between masonry and metal frames solidly with mortar, unless specific conditions are otherwise detailed.
  - 2. At locations where built-in items are to be connected to hollow unit masonry, solidly grout cores to provide adequate anchorage.
  - 3. Unless other conditions are specifically detailed, solidly grout cores for at least 24 inches below bearing plates, lintels, and similar features and conditions.
- E. Expansion Joints: Build in movement joints where shown on drawings, installing accessory items as masonry is constructed.
  - 1. Install elastomeric joint fillers as indicated.
- F. Non-Bearing Partitions: Extend full height to solid structure above, unless otherwise detailed.
  - 1. Except as otherwise indicated, treat joint between top of wall and structure above as resilient connection, using sealants specified in Division 7.
- G. Lintels: Install steel lintels at all openings.
  - 1. Bearing: Provide not less than 8 inches of bearing at each jamb.
  - 2. Reinforcement: At masonry openings greater than one foot in width, install horizontal joint reinforcement in 2 courses immediately above lintel and 2 courses immediately below sill. Except at construction joints, install opening reinforcement to extend not less than 24 inches beyond jamb on each side.

### 3.4 LAYING MASONRY UNITS

- A. Solid Masonry Units: Install in full bed joints and with head joint completely filled prior to laying each unit; do not slush head joints.
- B. Hollow Masonry Units: Install so that face shells are solidly mortared, horizontally and vertically. Bed webs solidly in mortar at starting course.
  - 1. Bed webs solidly in mortar at cores to be grouted.
- C. Joints: Make mortar joints visually and dimensionally consistent.
  - 1. Except as otherwise indicated, maintain mortar joint widths of 3/8 inch.
- D. Concealed Joints: Cut flush, unless otherwise detailed.



- E. Exposed Joints: Using concave jointer slightly larger than joint width, tool exposed joints before mortar has assumed final set.
- F. Resetting: Do not pound, tap, or otherwise attempt to adjust masonry units after initial set has occurred. Remove units which require adjusting, clean thoroughly, and reset in fresh mortar.

### 3.5 ANCHORING MASONRY

- A. Structural Framing Anchorage: Anchor masonry to structural framework at points of adjacency and as follows:
  - 1. Maintain open space of 1 inch or more between face of framing member and masonry elements.
  - 2. Fasten anchors to structure and embed in mortar joints as masonry is laid.
  - 3. Space anchors as indicated, but at not more than the following:
    - a. 16 inches on center vertically.
    - b. 24 inches on center horizontally.

### 3.6 REPAIRING MASONRY

- A. Replacement: Carefully remove areas of damaged masonry and replace with matching, undamaged units using mortar which matches original work.
- B. Pointing: As joints are being tooled, remove mortar with visible holes or mortar which cannot be compacted properly because of hidden voids, and replace with fresh mortar, filling each joint completely and tooling to match adjacent work

### 3.7 CLEANING AND PROTECTION

- A. Clean masonry after mortar is thoroughly set and cured.
  - 1. Scrape off adhered mortar particles by hand using non-metallic tools.
  - 2. Comply with directions of concrete unit masonry manufacturer and NCMA Tek Bulletin No. 45 for cleaning CMU.
- B. Protection: Institute protective measures as required to ensure that unit masonry work will be clean and undamaged at substantial completion.

**END OF SECTION 04200**

## **SECTION 05500 - METAL FABRICATIONS**

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Steel lintels and shelf angles.
  - 2. Pipe and tube railings.
  - 3. Steel framing and supports for applications where framing and supports are not specified in other Sections.

#### 1.3 SUBMITTALS

- A. Shop Drawings: For each fabricated item, show the following:
  - 1. Plans and elevations.
  - 2. Jointing and connections. Indicate welded connections using standard AWS symbols; indicate net weld length.
  - 3. Profiles of sections and reinforcing.
  - 4. Fasteners and anchors.
  - 5. Accessories.
  - 6. Location of each finish.
- B. Product Data: Manufacturer's specifications and installation instructions. Submit for:
  - 1. All manufactured products used in fabrications.
- C. Samples of products and materials when requested.

#### 1.4 QUALITY ASSURANCE

- A. Definitions in ASTM E 985 for railing-related terms apply to this section.
- B. Structural Performance of Handrails and Railing Systems: Comply with ASTM E 985 based on testing per ASTM E 894 and E 935.
- C. Structural Performance of Handrails and Railing Systems: Provide handrails and railing systems capable of withstanding the following structural loads without exceeding the allowable design working stress of the materials involved.
  - 1. Top Rail of Guardrail Systems: Concentrated load of 200 lbf (890 N) applied at any point and in any direction and a uniform load of 50 lbf per linear foot (730 N/m) applied horizontally and concurrently with a uniform load of 100 lbf per linear foot (1460 N/m) applied vertically downward. Concentrated and uniform loads need not be assumed to act concurrently.
  - 2. Handrails Not Serving as Top Rails: Concentrated load of 200 lbf (890 N) applied at any point and in any direction and a uniform load of 50 lbf per linear foot (730 N/m) applied in any direction. Concentrated and uniform loads need not be assumed to act concurrently.
  - 3. Infill Area of Guardrail Systems: Horizontal concentrated load of 200 lbf (890 N) applied to 1 sq. ft. (0.09 sq. m) at any point in the system including panels, intermediate rails, balusters, or other elements composing the infill area. Loads on infill area need not be assumed to act concurrently with loads on top rails.

- D. Where fabrications are specified to comply with specific structural performance

requirements, provide design sealed by a professional engineer registered in the state in which the project is located.

## 1.5 PROJECT CONDITIONS

- A. Where metal fabrications are indicated to fit walls and other construction, verify dimensions by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinated fabrication schedule with construction progress to avoid delaying the Work.
- B. Coordinate installation of anchorages for metal fabrications. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

## PART 2 - PRODUCTS

### 2.1 MATERIALS - METALS

- A. Steel Shapes:
  - 1. Plates, bars, angles, channels, and H-sections: ASTM A 36.
  - 2. Grating bars: ASTM A 36 or ASTM A 569.
  - 3. Galvanizing: Hot-dip galvanizing after fabrication in accordance with ASTM A 123.
  - 4. Tube: Cold-formed: ASTM A 500, Grade B.
  - 5. Pipe: ASTM A 53, standard weight.
- B. Steel Sheet:
  - 1. For structural uses: Hot-rolled, ASTM A 570; cold-rolled, ASTM A 611.
  - 2. For nonstructural uses: Cold-rolled, ASTM A 366; hot-rolled, ASTM A 569.
- C. Galvanized Steel Sheet:
  - 1. For structural uses: ASTM A 446.
  - 2. For nonstructural uses: ASTM A 526.
  - 3. Galvanizing: In accordance with ASTM A 525, G90, unless otherwise indicated.
- D. For metal fabrications exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.

### 2.2 MANUFACTURED COMPONENTS

- A. Bar Gratings: Manufacture in accordance with "Standard Specifications for Metal Bar Grating and Metal Bar Grating Treads" (part of NAAMM MBG 531), except for specific requirements specified here.
  - 1. Where load and deflection requirements are indicated, select member sizes and materials using manufacturer's published load tables.
  - 2. Spacing: 1-1/2 inches
  - 3. Cross bar spacing: 4 inches.
  - 4. Top surface: Plain.

### 2.3 MATERIALS - MISCELLANEOUS

- A. Grout: Nonmetallic, noncorrodible, nonshrink, factory blended and packaged; complying with ASTM C 1107. Use type recommended by manufacturer for exterior use where required.
- B. Fasteners: Use fasteners suitable for the material being fastened and for the type of connection required.

1. For exterior use or built into exterior walls: Nonferrous stainless steel, zinc coated or cadmium plated.
  2. Use fasteners of same material as items being fastened unless otherwise indicated.
  3. Bolts and studs: ASTM A 307.
  4. Nuts: ASTM A 563.
  5. Plain washers: Round, carbon steel, ASME B18.22.1 (ASME B18.22M).
  6. Lock washers: Helical, spring type, carbon steel, ASME B18.21.1 (ASME B18.21M).
  7. Expansion shields: FS FF-S-325.
- C. Galvanizing Repair Paint: Zinc dust paint complying with SSPC-Paint 20 or MIL P-21035B, Type I or II.
- D. Shop Primer: Fabricator's standard, fast-curing, lead-free, universal modified alkyd primer; resistant to normal atmospheric corrosion, compatible with finish paint systems indicated, capable of providing a sound foundation for field-applied topcoats despite prolonged exposure; complying with performance requirements of FS TT-P-645.

#### 2.4 FABRICATION - GENERAL

- A. Fabricate and shop-assemble in largest practical sections for delivery to site.
1. Prepare and reinforce fabrications as required to receive applied items.
  2. Fabricate items with joints tightly fitted and secured.
  3. Make exposed joints tight, flush, and hairline.
- B. Fasteners: Use concealed fasteners if possible.
1. Exposed fasteners: Flathead, countersunk type unless otherwise indicated.
- C. Anchors: Fabricate to suit conditions indicated; use anchors of same material and finish as item except where specifically indicated otherwise.
- D. Welding:
1. Welding of steel: Comply with AWS D1.1 recommendations.
  2. Provide continuous welds at welded corners and seams.
  3. Exposed welds: Grind flush and smooth.
- E. Joints Exposed to Weather: Fabricate to keep water out, or provide adequate drainage of water that penetrates.

#### 2.5 FABRICATION - SHEET METAL

- A. Comply with general fabrication requirements.
- B. Bend sheet metal corners to smallest practical radius.
- C. Welding Steel Sheet: Comply with AWS D1.3 recommendations.

#### 2.6 FABRICATION - GRATINGS

- A. Metal Bar Gratings: Produce metal bar gratings indicated per NAAMM marking system that comply with the following:
1. Metal Bar Grating Standard "Standard Specifications for Metal Bar Grating and Metal Bar Grating Treads" published in ANSI/NAAMM A202.1 "Metal Bar Grating Manual."
  2. Heavy Duty Metal Bar Grating Standard: "Guide Specifications for Heavy Duty Metal Bar Grating" published in NAAMM "Heavy Duty Metal Bar Grating Manual."

3. Welded Steel Gratings: W-15-4 (welded with bearing bars 15/16 inch o.c. and cross bars 4 inches o.c.)/bearing bar sizes as indicated.
4. Welded Heavy Duty Steel Gratings: W-19-4 (welded with bearing bars 1-3/16 inch o.c. and cross bars 4 inches o.c.)/bearing bar sizes as indicated.
5. Traffic Surface for Steel Bar Gratings: As follows:
  - a. Plain.
  - b. Serrated.
  - c. Knurled.
  - d. Applied abrasive finish consisting of aluminum oxide aggregate in an epoxy resin adhesive.
6. Steel Finish: As follows:
  - a. Shop prime paint applied in accordance with manufacturer's standard practice.
  - b. Hot-dip galvanized with a coating weight of not less than 1.8 oz. per sq. ft. of coated surface.

## 2.7 FABRICATION - SHOP COATINGS

- A. Hot-dip galvanize steel and iron assemblies set in concrete and masonry.
- B. Shop prime all iron and steel fabrications.
- C. Prepare surfaces to be coated as follows:
  1. Solvent-clean in accordance with SSPC-SP 1.
  2. Exterior fabrications: Clean in accordance with SSPC-SP 5.
  3. Interior fabrications: Clean in accordance with SSPC-SP 5.
- D. Shop Priming: Comply with SSPC-PA 1.
  1. Apply primer immediately following surface preparation.
  2. Do not prime surfaces to be welded.
  3. Do not prime surfaces in direct contact bond with concrete.
  4. Apply extra coat to corners, welds, edges, and fasteners.
- E. Shop Painting: Apply shop primer to surface of metal fabrications except those embedded in concrete or galvanized; comply with SSPC-PA1 and requirements indicated below:
  1. Surface Preparation: Comply with SSPC-SP6 "Commercial Blast Cleaning" for exterior work, and with SSPC-SP3 "Power Tool Cleaning" for interior work.
  2. Stripe paint edges, corners, crevices, bolts, welds and sharp edges.
- F. Galvanizing: ASTM A 123 for fabricated and unfabricated steel products made of uncoated rolled, pressed and forged steel shapes, plates, bars and strip 0.0229 inch and thicker.

## 2.8 FABRICATION - MISCELLANEOUS

- A. Loose Bearing and Leveling Plates: Provide for steel items bearing on masonry or concrete, as indicated. Drill plates to receive anchor bolts.
- B. Loose Steel Lintels: Fabricate from shapes and to sizes indicated. Galvanize after fabrication.
- C. Miscellaneous Framing and Supports: Provide as required to complete work and not included with structural steel framework. Fabricate of welded construction in as large units as possible; drill and tap as required to receive hardware and similar items. Include required anchors for building into other work.
- D. Miscellaneous Steel Trim: Fabricate to shapes and sizes as required for profiles shown; continuous welded joints and smooth exposed edges. Use concealed field splices

wherever possible. Provide cutouts, fittings, and anchorages; coordinate assembly and installation with other work.

- E. Nosings: Fabricate of shapes as indicated; miter corners and weld joints. Provide anchors 6 inches from ends of corners and 24 inches o.c.
- F. Shelf and Relieving Angles: Fabricate to sizes indicated for attachment to support framing. Provide slotted holes to receive anchor bolts, spaced not more than 6 inches from ends and 24 inches o.c. Galvanize shelf angles to be installed on exterior concrete.
- G. Steel Pipe Railings: Fabricate to dimensions shown, with smooth bends and welded joints using steel pipe of diameter and finish indicated. Secure posts and rail ends to building construction as indicated.
  - 1. Galvanize exterior steel railings, including pipe, fittings, brackets, fasteners and other ferrous metal components.
  - 2. Provide steel pipe with black finish for interior railings, primed after fabrication.
- H. Cast Treads and Thresholds: Cast-iron units with integral abrasive finish, of size and configuration indicated; with manufacturers's standard anchors for type of application indicated.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Perform cutting, drilling and fitting required for installation; set work accurately in location, alignment and elevation, measured from established lines and levels. Provide anchorage devices and fasteners where necessary for installation to other work.
- B. Set loose items on cleaned bearing surfaces, using wedges or other adjustments as required. Solidly pack open spaces with bedding mortar, consisting of 1-part portland cement to 3-parts sand and only enough water for packing and hydration, or use commercial non-shrink grout material.
- C. Touch-up shop paint after installation. Clean field welds, bolted connections and abraded areas, and apply same type paint as used in shop. Use galvanizing repair paint on damaged galvanized surfaces.
- D. Perform all welding in accordance with AWS requirements and procedures for appearance, quality of welds, and correction of welding work.
- E. Allow for thermal movement resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening up of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
- F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts. Locate joints where least conspicuous.
- G. Verify handrail and railing dimensions by field measurements before fabrication and indicate measurements on shop drawings. Coordinate fabrication schedule with construction progress to avoid delaying the work.
- H. Coordinate installation fo anchorages for handrails and railings. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

- I. Anchor posts in concrete by inserting into preset sleeves or core-drilled holes and grouting space between post and sleeve.
- J. Secure handrails to wall with wall brackets and end fittings.
  - 1. Use brackets with flange tapped for concealed hanger bolt.
  - 2. Use brackets with predrilled hole for exposed bolt anchorage.

END OF SECTION 05500

## **SECTION 07600 - FLASHING AND SHEET METAL**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of Contract, including General Conditions, Amendments to General Conditions, and Supplementary Conditions and Sections in Division I of the Specifications apply to work of this section.

#### **1.2 DESCRIPTION**

- A. Extent of each type of flashing and sheet metal work is indicated on drawings and by provisions of this Section.
- B. Types of work specified in this Section include the following:
  - 1. Metal counter flashing and base flashing.
  - 2. Exposed metal trim.
  - 3. Miscellaneous sheet metal accessories.
- C. Related Work:
  - 1. Section 07900 - Joint Sealants

#### **1.3 SUBMITTALS**

- A. Comply with pertinent provisions of Section 01620.
- B. Product Data; Sheet Metal, Accessories: Submit manufacturer's product data, installation instructions and general recommendations for each specified sheet material and fabricated product.
- C. Samples; Flashing, Sheet Metal, Accessories: Submit 8" square samples of specified sheet materials to be exposed as finished surfaces.
  - 1. Submit 12" long, completely finished units of specified factory-fabricated products exposed as finished work.
- D. Shop Drawings; Flashing, Sheet Metal, Accessories: Submit shop drawings showing layout, joining, profiles, and anchorages of fabricated work, including major counter flashing, trim/fascia units, etc.; layouts at 1/4" scale, detail at 3" scale.

#### **1.4 QUALITY ASSURANCE**

- A. Comply with industry standards and recommendations of SMACNA Architectural Sheet Metal Manual except as specifically indicated otherwise.

#### **1.5 JOB CONDITIONS**

- A. Coordinate work of this Section with interfacing and adjoining work for proper sequencing of each installation. Insure best possible weather resistance and durability of work and protection of materials and finishes.
- B. Surfaces to which flashing and sheet metal are applied shall be even, smooth, sound, thoroughly clean and dry and free from all defects that might affect the application. Report any unsatisfactory surfaces to the General Contractor.
- C. Do not proceed with installation of sheet metal work until curb and substrate



construction, blocking, roofing, regrets, and other construction that will receive the work are completed. Proceeding with application of sheet metal work will be evidence of substrate acceptance by Installer.

#### 1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Comply with pertinent provisions of Section 01620.
- B. Materials furnished by this Section, which are to be built-in by other trades, shall be delivered to the Site in time to avoid delays in construction schedule.

### PART 2 - PRODUCTS

#### 2.1 FLASHING AND SHEET METAL MATERIALS

- A. .032 Aluminum minimum (Pre-Finished to Match Existing)
- B. Flashing exposed to view, prefinished color to be selected to match surrounding conditions.

#### 2.2 MISCELLANEOUS MATERIALS AND ACCESSORIES

- A. Fasteners: Same metal as flashing/sheet metal or other noncorrosive metal as recommended by sheet manufacturer. Match finish of exposed heads with material being fastened.
- B. Bituminous Coating: SSPC-Paint 12, solvent type bituminous mastic, nominally free of sulfur, compounded for 15-mil dry film thickness per coat.
- C. Mastic Sealant: Polyisobutylene; nonhardening nonskinning, noncorrosive metal seam cementing compound, recommended by metal manufacturer for exterior/interior non-moving joints including riveted joints.
- D. Adhesives: Type recommended by flashing sheet manufacturer for waterproof weather-resistant seaming and adhesive application of flashing sheet.
- E. Metal Accessories: Provide sheet metal clips, straps, anchoring devices and similar accessory units as required for installation work, matching or comparable with material being installed. They shall be noncorrosive, in sizes and gauges required for proper performance.

#### 2.3 FLASHING AT DECRATILE

- A. To match existing tile color.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION REQUIREMENTS

- A. General: Except as otherwise indicated, comply with manufacturer's installation instructions and recommendations, and with SMACNA "Architectural Sheet Metal Manual". Anchor units of work securely in place by methods indicated. Provide for thermal expansion of metal units. Conceal fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints and seams, which will be permanently watertight and weatherproof.
- B. Underlayment: Where aluminum is to be installed directly on cementitious or wood substrates, apply a coating or other permanent separation as recommended by manufacturer/fabricator to concealed aluminum surfaces.

### 3.2 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces, removing substances, which might cause corrosion of metal or deterioration of finishes.
- B. Protection: Installer shall advise Contractor of required procedures for surveillance and protection of flashing and sheet metal work during construction, to ensure that work be without damage or deterioration, other than natural weathering, at time of substantial completion.

END OF SECTION 07600

## **SECTION 07900 - JOINT SEALANTS**

### PART 1- GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. The sealing of exterior and interior joints.

#### 1.2 SUBMITTALS

- A. Product Data: Manufacturer's data on each joint sealer, with instructions for substrate preparation and installation.
- B. Samples for Color Selection: Cured samples of actual products showing manufacturer's full range of colors.

#### 1.3 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original containers or bundles with labels showing manufacturer, product name or designation, color, shelf life, and installation instructions.

#### 1.4 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install sealers if any of the following conditions exist:
  - 1. Air or substrate temperature exceeds the range recommended by sealer manufacturer or is below 40 degrees F (4.4 degrees C).
  - 2. Substrate is wet, damp, or covered with snow, ice, or frost.
- B. Dimensional Limitations: Do not install sealers if joint dimensions are less than or greater than that recommended by sealer manufacturer; notify the architect and get sealer manufacturer's recommendations for alternative procedures.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS - GENERAL

- A. General: Provide only products which are recommended and approved by their manufacturer for the specific use to which they are put and which comply with all requirements of the contract documents.
  - 1. For each generic product, use only materials from one manufacturer.
  - 2. Provide only materials which are compatible with each other and with joint substrates.
  - 3. Colors of exposed sealers: As selected by the Architect from manufacturer's standard colors.

#### 2.2 ELASTOMERIC SEALANTS

- A. Elastomeric Sealants - General: Chemically curing elastomeric sealants of types indicated, complying with ASTM C 920, including specific Type, Grade, Class, and Uses indicated, as well as all other requirements specified.
  - 1. Exterior, Non-Traffic Areas: Type S, Grade NS, Class 25, Use NT. Provide one of the following Polyurethane or Silicone Sealants or an approved substitution:
    - a. Polyurethane:
      - (1) Bostik/Chem-Calk 900.
      - (2) Pecora Corp./Dynatrol I.
      - (3) Sonneborn-ChemRex, Inc./Sonolast NPI.
      - (4) Tremco, Inc./Dymonic.
    - b. Silicone:

- (1) Bostik/Chem-calk 2200.
  - (2) Pecora Corp./895 Silicone.
  - (3) Sonneborn-ChemRex, Inc./Sonolastic Omniseal.
  - (4) Tremco, Inc./Spectrum 2.
2. Exterior, Traffic Areas: Type S, Grade P, Class 25, Use T. Provide one of the following silicone sealants or an approved substitution:
    - a. Silicone:
      - (1) Bostik/Chem-calk 950.
      - (2) Pecora Corp./NR-201 Urexpan.
      - (3) Sonneborn-ChemRex, Inc./Sonolastic SLI.
  3. Interior, Non-Traffic Areas: Type S, Grade NS, Class 12.5 or 25, Use NT. Provide one of the following polyurethane or silicone sealants or an approved substitution:
    - a. Polyurethane:
      - (1) Bostik/Chem-calk 915.
      - (2) Pecora Corp./Dynatrol I.
      - (3) Sonneborn-ChemRex, Inc./Sonolast NPI.
      - (4) Tremco, Inc./Dymonic.
    - b. Silicone:
      - (1) Bostik/Chem-calk 2200.
      - (2) Pecora Corp./895 Silicone.
      - (3) Sonneborn-ChemRex, Inc./Sonolastic Omniseal.
      - (4) Tremco, Inc./Spectrum 2.
  4. Interior, Traffic Areas: Type S, Grade P, Class 25, Use T. Provide one of the following silicone sealants or an approved substitution:
    - a. Silicone:
      - (1) Bostik/Chem-calk 950.
      - (2) Pecora Corp./NR-201 Urexpan.
      - (3) Sonneborn-ChemRex, Inc./Sonolastic SLI.
  5. Expansion/ Control Joints in Concrete walls: Pecora 890

## 2.2 LATEX SEALANTS

- A. Latex Sealant - General: One-part, nonsag, mildew-resistant, paintable latex sealant complying with ASTM C 834.
  1. Exterior: Do not use for exterior applications.
  2. Interior: Use only on non-working joints. Provide one of the following or an approved substitution:
    - a. Pecora Corp./AC-20.
    - b. Sonneborn-ChemRex, Inc./Sonolac.
    - c. Tremco, Inc./Acrylic Latex 834.

## 2.3 SEALANT BACKERS

- A. Backers - General: Nonstaining; recommended or approved by sealant manufacturer for specific use.
- B. Backer Rods: Flexible, nonabsorbent, compressible polyurethane foam, either open-cell or non-gassing closed-cell, unless otherwise restricted by sealant manufacturer; preformed to appropriate size and shape.
- C. Bond-Breaker Tape: Self-adhesive, polyethylene or other plastic tape, unless otherwise restricted by sealant manufacturer; suitable for preventing sealant adhesion.

## 2.4 MISCELLANEOUS MATERIALS

- A. Primers: As recommended by sealer manufacturer.
- B. Cleaners: As recommended by sealer manufacturer and not damaging to substrates.

- C. Masking Tape: Nonabsorbent, nonstaining.
- D. Tooling Agents: Approved by sealant manufacturer; nonstaining to sealant and substrate.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine joints for characteristics that may affect sealer performance, including configuration and dimensions.
- B. Do not begin joint sealer work until unsatisfactory conditions have been corrected.

#### 3.2 PREPARATION

- A. Cleaning: Just before starting sealer installation, clean out joints in accord with recommendations of sealer manufacturers and as follows:
  1. Remove all material that could impair adhesion, including dust, dirt, coatings, paint, oil, and grease. Exception: Materials tested to show acceptable adhesion and compatibility.
  2. Dry out damp and wet substrates thoroughly.
  3. Remove loose particles by vacuuming or by blowing with oil-free compressed air.
  4. Concrete: Remove laitance and form-release coatings.
  5. Clean substrates with methods recommended by sealant manufacturer which will not damage the substrate.
  6. Use methods which will not leave residues that will impair adhesion.
- B. Priming: Prime substrates as recommended by sealer manufacturer.
- C. Masking Tape: Use masking tape to keep primers and sealers off of adjacent surfaces which would be damaged by contact or by cleanup. Remove tape as soon as practical.
- D. Install fillers where needed to provide proper joint depth or support for sealant backers.
- E. Provide caulk joints at all exterior exposed concrete construction/pour joints.

#### 3.3 INSTALLATION

- A. Comply with sealer manufacturers' installation instructions and recommendations, except where more restrictive requirements are specified.
- B. Gunnable and Pourable Sealants: Comply with recommendations of ASTM C 1193.
- C. Backers:
  1. Install backers at depth required to result in shape and depth of installed sealant which allows the most joint movement without failure.
    - a. Make backers continuous, without gaps, tears, or punctures.
    - b. Do not stretch or twist backers.
  2. If backers become wet or damp before installation of sealant, dry out thoroughly before proceeding.
  3. Use bond-breaker tape where indicated and wherever it is necessary to keep sealant from adhering to back or third side of joint.
- D. Sealants: Use methods recommended by manufacturer; completely fill the joint; make full contact with bond surfaces; tool nonsag sealants to smooth surface eliminating air pockets.

1. Use concave joint shape shown in Figure 5A in ASTM C 1193, where not otherwise indicated.

#### 3.4 PROTECTION AND CLEANING

- to be
- A. Clean surfaces adjacent to joints as work progresses and before sealants set using methods and materials approved by manufacturers of sealers and of surfaces cleaned.
  - B. Protect joint sealers from contamination and damage.
  - C. Remove and replace damaged sealers.

#### 3.5 WARRANTY

- A. Provide 20 year caulking warranty.

END OF SECTION 07900

## **SECTION 09900 - PAINTING**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of Contract, including General Conditions, Amendments to General Conditions, and Supplementary Conditions and Sections in Division 1 of the Specifications apply to work of this section.

#### **1.2 DESCRIPTION**

- A. Work included: Paint and finish the exterior and interior exposed surfaces listed on the Painting Schedule in Part 3 of this Section, as specified herein, and as needed for a complete and proper installation.
- B. Related work:
  - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
  - 2. Priming or priming and finishing of certain surfaces may be specified to be factory-performed or installer-performed under pertinent other Sections.
- C. Work not included:
  - 1. Unless otherwise indicated, painting is not required on surfaces in concealed areas and inaccessible areas such as furred spaces, foundation spaces, utility tunnels, pipe spaces, and duct shafts.
  - 2. Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze, and similar finish materials will not require painting under this Section unless otherwise indicated.
  - 3. Do not paint moving parts of operating units; mechanical or electrical parts such as valve operators; linkages; sensing devices; and motor shafts, unless otherwise indicated.
  - 4. Do not paint over required labels or equipment identification, performance rating, name, or nomenclature plates.
  - 5. Do not paint concrete which has been sandblasted.
- D. Definitions:
  - 1. "Paint," as used herein, means coating systems materials including primers, emulsions, epoxy, enamels, sealers, fillers, and other applied materials whether used as prime, intermediate, or finish coats.

#### **1.3 SUBMITTALS**

- A. Comply with pertinent provisions of Section 01340.
- B. Product data: Within 45 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
  - 1. Materials list of items proposed to be provided under this Section;
  - 2. Manufacturers specifications and other data needed to prove compliance with the specified requirements.
- C. Samples:
  - 1. Colors are to be selected. Follow the selection of colors and glosses by the Architect, as described under "Color Schedules" in Part 2 of this Section, submit Samples for the Architect's review.
    - a. Provide three samples of each color and each gloss for each material on which the finish is specified to be applied.

- b. Except as otherwise directed by the Architect, make samples approximately 8" x 10" in size.
  - c. If so directed by the Architect, submit samples during progress of the Work in the form of actual application of the approved materials on actual surfaces to be painted.
2. Revise and resubmit each Sample as requested until the required gloss, color, and texture is achieved. Such Samples, when approved, will become standards of color and finish for accepting or rejecting the work of this Section.
  3. Do not commence finish painting until approved samples are on file at the job site.

#### 1.4 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
  1. Paint shall be tinted by the Paint Company; on-site tinting is not permitted.
- B. Paint coordination:
  1. Provide finish coats which are compatible with the prime coats actually used.
  2. Review other Sections of these specifications as required, verifying the prime coats to be used and assuring compatibility of the total coating system for the various substrate.
  3. Upon request, furnish information on the characteristics of the specific finish materials to assure that compatible prime coats are used.
  4. Provide barrier coats over non-compatible primers, or remove the primer and re-prime as required.
  5. Notify the Architect in writing of anticipated problems in using the specified coating systems over prime-coatings supplied under other Sections.
- C. Provide 8' x 8' wall and 8' x 8' ceiling mock-up panel for approval of finishes.

#### 1.5 PRODUCT HANDLING

- A. Comply with pertinent provisions of Section 01620.

#### 1.6 JOB CONDITIONS

- A. Do not apply solvent-thinned paints when the temperature of surfaces to be painted and the surrounding air temperatures are below 45 degrees F, unless otherwise Permitted by the manufacturers' printed instructions as approved by the Architect.
- B. Weather conditions:
  1. Do not apply paint in snow, rain, fog, or mist; or when the relative humidity exceeds 85%; or to damp or wet surfaces, unless otherwise permitted by the manufacturers' printed instructions as approved by the Architect.
  2. Applications may be continued during inclement weather only within the temperature and humidity limits specified by the paint manufacturer as being suitable for use during application and drying periods.

#### 1.7 EXTRA STOCK

- A. Upon completion of the Work of this Section, deliver to the Owner an extra stock equaling one gallon of each color, type, and class of paint used in the Work. Tightly seal each container, and clearly label, stating contents and location(s) where used.



## PART 2 - PRODUCTS

### 2.1 PAINT MATERIALS

- A. Acceptable materials:
  - 1. The Painting Schedule in Part 3 of this Section is based, in general, on products of the Glidden Paint Company, equal products by Sherwin Williams, Olympic or approved equal will be acceptable.
  - 2. Where products are proposed other than those specified by name and number in the Painting Schedule, provide under the product data submittal required by Article 1.3 of this Section a new painting schedule compiled in the same format used for the Painting Schedule included in this Section.
- B. Undercoats and thinners:
  - 1. Provide undercoat paint produced by the same manufacturer as the finish coat.
  - 2. Use only the thinners recommended by the paint manufacturer, and use only to the recommended limits.
  - 3. Insofar as practicable, use undercoat, finish coat, and thinner material as parts of a unified system of paint finish.

### 2.2 COLOR SCHEDULES

- A. The Architect or Owner will prepare a color schedule with samples for guidance in painting.
- B. The Architect may select, allocate, and vary colors on different surfaces throughout the work, subject to the following:
  - 1. Interior work:
    - a. Walls – 4 color
    - b. Ceiling – 2 color
    - c. Doors – 2 color
    - d. Casing/Trim – 2 color
    - e. Interior of Stairways – 2 color
    - f. Interior Stairways Rails – 2 color
  - 2. Exterior :
    - a. 2 colors.

### 2.3 APPLICATION EQUIPMENT

- A. For application of the approved paint, use only such equipment as is recommended for application of the particular paint by the manufacturer of the particular paint, and as approved by the Architect.
- B. Prior to use of application equipment, verify that the proposed equipment is actually compatible with the material to be applied, and that integrity of the finish will not be jeopardized by use of the proposed equipment.

### 2.4 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

## PART 3 - EXECUTION

### 3.1 SURFACE CONDITIONS

- A. General:
  - 1. Mix and prepare paint materials in strict accordance with the manufacturers' recommendations as approved by the Architect.
  - 2. When materials are not in use, store in tightly covered containers.
  - 3. Maintain containers used in storage, mixing, and application of paint in a clean condition, free from foreign materials and residue.
  - 4. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.
- B. Stirring:
  - 1. Stir materials before application, producing a mixture of uniform density.
  - 2. Do not stir into the material any film which may form on the surface, but remove the film and, if necessary, strain, the material before using.

### 3.2 SURFACE PREPARATION

- A. General:
  - 1. Perform preparation and cleaning procedures in strict accordance with the paint manufacturers' recommendations as approved by the Architect.
  - 2. Remove removable items which are in place and are not scheduled to receive paint finish; or provide surface-applied protection prior to surface preparation and painting operations.
  - 3. Following completion of painting in each space or area, reinstall the removed items by using workmen who are skilled in the necessary trades.
  - 4. Clean each surface to be painted prior to applying paint or surface treatment.
  - 5. Remove oil and grease with clean cloths and cleaning solvent of low toxicity and flash point in excess of 200 degrees F. prior to start of mechanical cleaning.
  - 6. Schedule the cleaning and painting so that dust and other contaminants from the cleaning process will not fall onto wet newly painted surfaces.
- B. Preparation of wood surfaces:
  - 1. Clean wood surfaces until free from dirt, oil, and other foreign substance.
  - 2. Smooth finish wood surfaces exposed to view, using the proper sandpaper. Where so required, use varying degrees of coarseness in sandpaper to produce a uniformly smooth and unmarred wood surface in preparation for the application of stain.
  - 3. Unless specifically approved by the Architect, do not proceed with painting of wood surfaces until the moisture content of the wood is 12% or less as measured by a moisture meter approved by the Architect.
- C. Preparation of metal surfaces:
  - 1. Thoroughly clean surfaces until free from dirt, oil, and grease.
  - 2. On galvanized surfaces, use solvent for the initial cleaning, and then treat the surface thoroughly with phosphoric acid etch. Remove etching solution completely and allow to dry thoroughly before application of paint.
  - 3. Allow to dry thoroughly before application of paint.

### 3.3 PAINT APPLICATION

- A. General:
  - 1. Touch-up shop-applied prime coats which have been damaged, and touch-up bare areas prior to start of finish coats application.
  - 2. Slightly vary the color of succeeding coats.
    - a. Do not apply additional coats until the completed coat has been inspected and approved.
    - b. Only the inspected and approved coats of paint will be considered in determining the number of coats applied.
  - 3. Sand and dust between coats to remove defects visible to the unaided eye
  - 4. On removable panels and hinged panels, paint the back sides to match the exposed sides.
- B. Drying:
  - 1. Allow sufficient drying time between coats, modifying the period as recommended by the material manufacturer to suit adverse weather conditions.
- C. Brush applications:
  - 1. Brush out and work the brush coats onto the surface in an even film.
  - 2. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, and other surface imperfections will not be acceptable.
- D. Spray application:
  - 1. Except as specifically otherwise approved by the Architect, confine spray application to concrete masonry surfaces, metal framework and similar surfaces where hand brush work would be inferior.
  - 2. Where spray application is used, apply each coat to provide the hiding equivalent of brush coats.
  - 3. Do not double back with spray equipment to build up film thickness of two coats in one pass.
- E. For completed work, match the approved Samples as to texture, color, and coverage. Remove, refinish, or repaint work not in compliance with the specified requirements.

### 3.4 PAINTING SCHEDULE

- A. Provide the following paint finishes:
- B. Exterior metal, ferrous:
  - 1. First coat: Primer, 5206.
  - 2. Second coat: Gloss Alkyd Enamel, 4550 Series.
  - 3. Third coat: Gloss Alkyd Enamel, 4550 Series.
- C. Exterior metal, galvanized:
  - 1. First coat: Primer, 5206.
  - 2. Second coat: Gloss Alkyd Enamel, 4550 Series.
  - 3. Third coat: Gloss Alkyd Enamel, 4550 Series.
- D. Interior metal, ferrous:
  - 1. First Coat: Primer 5206.
  - 2. Second Coat: Semigloss, odorless, Alkyd Enamel, 4600 Series.
  - 3. Third Coat: Semigloss, odorless, Alkyd Enamel, 4600 Series.
- E. Interior concrete masonry:

1. First Coat: High-Performance Latex Block Filler, 5317.
  2. Second Coat: Semigloss, latex based, 3700 Line.
  3. Third Coat: Semigloss, latex based, 3700 Line.
- F. Exterior concrete (Elastomeric Coating):
1. Wash Surfaces, repair cracks, fill voids, apply concrete conditioner, level concrete with Finestone Fine Build.
  2. Finestone Sanded Primer
  3. Finestone Pebbletex (Limestone) to a minimum thickness of 1.6mm (2 coats minimum)
  4. Horizontal Surfaces: Finestone Top Coat to a minimum thickness of 3 mils.
  5. Vertical Surfaces: FineLastic to a minimum dry film thickness of 15 mils. (minimum 2 coats)
  6. Apply as per manufacturer's recommendations
- G. Interior flat wall paint ("F")
1. On concrete, use:
    - a. First coat: Pigmented sealer #890
    - b. Second coat: sinwall vinyl latex #1700
    - c. Third coat: Sinwall vinyl latex #1700
  2. On gypsum drywall, use:
    - a. First coat:: Pigmented PVA sealer #1770
    - b. Second coat: Sinwall vinyl latex #1700
    - c. Third coat: Sinwall vinyl latex #1700
- H. Interior semi-gloss enamel ("SGE")
1. On wood use:
    - a. First coat: Sinco prime undercoater #975
    - b. Second coat: Sinco satin enamel #1800
    - c. Third coat: Sinco satin enamel #1800

END OF SECTION 09900