



**TABLE OF CONTENTS 00003-2**  
**DOORS AND WINDOWS 08000**

**DIVISION 8**

08110 ----- STEEL DOORS AND FRAMES  
08220 ----- PLASTIC DOORS  
08331 ----- COILING COUNTER DOORS  
08520 ----- ALUMINUM WINDOWS  
08710 ----- DOOR HARDWARE  
08800 ----- GLAZING

**DIVISION - 9**

**FINISHES 09000**

09250 ----- GYPSUM BOARD  
09900 ----- PAINTING

**DIVISION 10**

**SPECIALTIES 10000**

10230 ----- METAL VENTS  
10400 ----- IDENTIFYING DEVICES  
10520 ----- FIRE PROTECTION SPECIALTIES  
10810 ----- TOILET ACCESSORIES  
10820 ----- BABY CHANGING STATIONS  
----- SYNTHETIC GRASS

**DIVISION 11**

**EQUIPMENT 11000**

NOT USED

**DIVISION 12**

**FURNISHINGS 12000**

NOT USED

**DIVISION 13**

**SPECIAL CONSTRUCTION 13000**

NOT USED

**DIVISION 14**

**CONVEYING SYSTEMS 14000**

NOT USED

**DIVISION 15**

**MECHANICAL 15000**

NOT USED

**DIVISION 16**

**ELECTRICAL 16000**

SEE DRAWINGS

**Sealed bids** from general contractors will be received until **10:00 p.m. on Thursday, July 7, 2011** at the: **Carrollton City Hall**  
**315 Bradley Street**  
**Carrollton, Georgia 30117**

for the following:

**A NEW AMPHITHEATER FOR:  
City Of Carrollton  
Carrollton, Georgia**

Bid documents may be examined or downloaded:  
**alanbellarchitect.com**

**Pre-Bid** Conference will be held on site at **10:00 am on Thursday, June 23, 2011.**

Bid documents may be obtained from the Architect's website, alanbellarchitect.com  
A fee of \$100.00 is required to be placed on the List of Bidders.

**A bid bond amounting to five percent of base bid is required and must be submitted with bid.**

**A performance and payment bonds amounting to 100 percent of contract sum will be required.**

The owner reserves the right to waive technicalities and reject bids.

BY:  
Casey Coleman  
City Manager

*END OF DOCUMENT*

**To be considered, Bids must be made in accordance with these Instructions to Bidders.**

1. **EXAMINATION:** Bidders shall carefully examine the documents and the construction site to obtain first-hand knowledge of existing conditions. Contractors will not be given extra payments for conditions that can be determined by examining the site and documents. Pre-bid conference will be held at **On Site** at 10:00 on June 23, 2011
2. **QUESTIONS:** Submit all questions about the Drawings and Specifications **to the Architect, in writing**. Replies will be issued to all bidders of record as Addenda to the Drawings and Specifications and will become part of the Contract. The Architect and Owner will not be responsible for oral clarification.
3. **PREPARATION OF BIDS:** Bids shall be made on unaltered Bid Forms furnished by the Architect. Fill in all blank spaces and submit in triplicate. Bids shall be signed with name typed below signature.
4. **BID SECURITY:** Bid Bond shall be payable to City of Carrollton in the amount of **five percent** (5%) of bid, issued by surety licensed to conduct business in the State of Georgia. The Owner reserves the right to retain the bonds of the next 3 lowest bidders until the lowest bidder enters into a contract. The bid bond is to be submitted concurrently with the Bid.
5. **PERFORMANCE & LABOR & MATERIAL PAYMENT BONDS:** The accepted bidder (Contractor) shall furnish a proper **Performance Bond and Payment Bond** covering the full amount of the Contract Price as security for the faithful performance of all work under the Contract and payment of all charges in connection therewith. Cost of referenced Bonds shall be included in the Bid.
6. **SUBMITTALS:** Submit bid and bid security in an opaque, sealed envelope to **The City of Carrollton 315 Bradley Street Carrollton, Ga 30117 Attn: Casey Coleman**. Identify the envelope with project name and name of bidder.
7. **MODIFICATION AND WITHDRAWAL:** Bids may not be modified after submittal. Bidders may withdraw Bids at any time before bid openings, but may not resubmit them.
8. **DISQUALIFICATION:** The Owner reserves the right to disqualify bids, before or after opening, upon evidence of collusion with intent to defraud or other illegal practices upon the part of the bidder. Owner reserves the right to disqualify bids submitted without bid security.
9. **AWARD:** Owner reserves the right to accept any Bid, to reject any and all Bids, or to negotiate Contract Terms with the various Bidders, when such is deemed by the Owner to be in his best interest.
10. **CONTRACT FORM:** Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum.
11. **COMMENCEMENT:** Accepted bidder shall assist and cooperate with the Owner in preparing the formal Contract Agreement, and within 10 days following its presentation shall execute same and return it to the Owner along with bonds and certificates of insurance. Accepted bidder must be ready to begin work within 10 days following receipt of written order from the Owner to proceed or on date stipulated in such order.

*END OF DOCUMENT*

*ABA Project # 10060-A11*

TO: City of Carrollton  
Attn: Casey Coleman  
315 Bradley Street  
Carrollton, Georgia 30117

I have received and reviewed bid documents, dated March 2007 and titled:

**A New Amphitheater for:  
City of Carrollton  
Carrollton, Georgia**

I have also received Addenda \_\_\_\_, \_\_\_\_, \_\_\_\_, \_\_\_\_ and have included their provisions in my bid. I have examined both the documents and the sites and submit the following bid.

In submitting this bid, I agree:

1. To hold my bid open until 30 days after bid date.
2. To accept all provisions of the Instructions to Bidders.
3. To execute a Contract if awarded, on the basis of this bid and to furnish Performance and Payment Bonds.
4. To accomplish the work in accordance with the Contract Documents.
6. To construct **A New Amphitheater @ 122 Bradley Street** for the individual project base bid sum of:

\_\_\_\_\_ DOLLARS (\$\_\_\_\_\_)

and complete all work in \_\_\_\_\_ consecutive calendar days.

I have attached required bid bond:

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

By:

Company: \_\_\_\_\_

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

Title:

\_\_\_\_\_

END OF DOCUMENT

**General Conditions of the Contract  
For Construction**

**TABLE OF ARTICLES**

1. GENERAL PROVISIONS
2. OWNER
3. CONTRACTOR
4. ADMINISTRATION OF THE CONTRACT
5. SUBCONTRACTORS
6. CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
7. CHANGES IN THE WORK
8. TIME
9. PAYMENTS AND COMPLETION
10. PROTECTION OF PERSONS AND PROPERTY
11. INSURANCE AND BONDS
12. UNCOVERING AND CORRECTION OF WORK
13. MISCELLANEOUS PROVISIONS
14. TERMINATION OR SUSPENSION OF THE CONTRACT

**ARTICLE 1**

**GENERAL PROVISIONS**

**1.1 BASIC DEFINITIONS**

### **1.1.1 THE CONTRACT DOCUMENTS**

The Contract Documents consist of the Agreement between Owner and Contractor (hereinafter the Agreement), Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect.

### **1.1.2 THE CONTRACT**

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Architect and Contractor, (2) between the Owner and a Subcontractor or Sub-subcontractor or (3) between any persons or entities other than the Owner and Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

### **1.1.3 THE WORK**

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

### **1.1.4 THE PROJECT**

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner or by separate contractors.

### **1.1.5 THE DRAWINGS**

The Drawings are the graphic and pictorial portions of the Contract Documents, wherever located and whenever issued, showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

### **1.1.6 THE SPECIFICATIONS**

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, construction systems, standards and workmanship for the Work, and performance of related services.

### **1.1.7 THE PROJECT MANUAL**

The Project Manual is the volume usually assembled for the Work which may include the bidding requirements, sample forms, Conditions of the Contract and Specifications.

## **1.2 EXECUTION, CORRELATION AND INTENT**

**1.2.1** The Contract Documents shall be signed by the Owner and Contractor as provided in the Agreement. If either the Owner or Contractor or both do not sign all the Contract Documents, the Architect shall identify such unsigned Documents upon request.

**1.2.2** Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

**1.2.3** The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the intended results.

**1.2.4** Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

**1.2.5** Unless otherwise stated in the Contract Documents, words which have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

### **1.3 OWNERSHIP AND USE OF ARCHITECT'S DRAWINGS, SPECIFICATIONS AND OTHER DOCUMENTS**

**1.3.1** The Drawings, Specifications and other documents prepared by the Architect are instruments of the Architect's service through which the Work to be executed by the Contractor is described. The Contractor may retain one contract record set. Neither the Contractor nor any Subcontractor, Sub-subcontractor or material or equipment supplier shall own or claim a copyright in the Drawings, Specifications and other documents prepared by the Architect, and unless otherwise indicated the Architect shall be deemed the author of them and will retain all common law, statutory and other reserved rights, in addition to the copyright. All copies of them, except the Contractor's record set, shall be returned or suitably accounted for to the Architect, on request, upon completion of the Work. All copies made under this license shall bear the statutory copyright notice, if any, shown on the Drawings, Specifications and other documents prepared by the Architect. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect's copyright or other reserved rights.

### **1.4 CAPITALIZATION**

**1.4.1** Terms capitalized in these General Conditions include those which are (1) specifically defined, (2) the titles of numbered articles and identified references to Paragraphs, Subparagraphs and Clauses in the document.

### **1.5 INTERPRETATION**

**1.5.1** in the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

## **ARTICLE 2**

### **OWNER**

#### **2.1 DEFINITION**

**2.1.1** The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Owner" means the Owner or the Owner's authorized representative.

**2.1.2** The Owner upon reasonable written request shall furnish to the Contractor in writing information that is necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein at the time of execution of the Agreement and, within five days after any change, information of such change in title, recorded or unrecorded.

#### **2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER**

**2.2.1** The Owner shall, at the request of the Contractor, prior to execution of the Agreement and promptly from time to time thereafter, furnish to the Contractor reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. [*Note: Unless such reasonable evidence were furnished on request prior to the execution of the Agreement, the prospective contractor would not be required to execute the Agreement or to commence the Work.*]

**2.2.2** The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site,

**2.2.3** Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

**2.2.4** the Owner shall furnish Information or services under the Owner's control with reasonable promptness to avoid delay in orderly progress of the Work.

**2.2.5** Unless otherwise provided in the Contract Documents, the Contractor will be furnished, free of charge, such copies of Drawings and Project Manuals as are reasonably necessary for execution of the Work.

**2.2.6** The foregoing is in addition to other duties and responsibilities of the Owner enumerated herein and especially those in respect to Article 6 (Construction by Owner or by Separate Contractors), Article 9 (Payments and Completion) and Article 11 (Insurance and Bonds).

### **2.3 OWNER'S RIGHT TO STOP THE WORK**

**2.3.1** If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents as required by Paragraph 12.2 or persistently fails to carry out Work in accordance with the Contract Documents, the Owner, by written order signed personally or by an agent specifically so empowered by the owner in writing, may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Subparagraph 6.1.3.

### **2.4 OWNER'S RIGHT TO CARRY OUT THE WORK**

**2.4.1** If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may after such seven-day period give the Contractor a second written notice to correct such deficiencies within a second seven-day period. If the Contractor within such second seven-day period after receipt of such second notice fails to commence and continue to correct any deficiencies, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for the Architect's additional services and expenses made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

## **ARTICLE 3**

### **CONTRACTOR**

#### **3.1 DEFINITION**

**3.1.1** The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Contractor" means the Contractor or the Contractor's authorized representative.

#### **3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR**

**3.2.1** The Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by the Owner pursuant to Subparagraph 2.2.2 and shall at once report to the Architect errors, inconsistencies or omissions discovered. The Contractor shall not be liable to the Owner or Architect for damage resulting from errors, inconsistencies or omissions in the Contract Documents unless the Contractor recognized such error, inconsistency or omission and knowingly failed to report it to the Architect. If the Contractor performs any construction activity knowing it involves a recognized error, inconsistency or omission in the Contract Documents without such notice to the Architect, the Contractor shall assume appropriate responsibility for such performance and shall bear an appropriate amount of the attributable costs for correction.

**3.2.2** The Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities, Errors, inconsistencies or omissions discovered shall be reported to the Architect at once.

**3.2.3** The Contractor shall perform the Work in accordance with the Contract Documents and submittals approved pursuant to Paragraph 3.12.

#### **3.3 SUPERVISION AND CONSTRUCTION PROCEDURES**

**3.3.1** The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless Contract Documents give other specific instructions concerning these matters.

**3.3.2** The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons performing portions of the Work under a contract with the Contractor.

**3.3.3** The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons other than the Contractor.

**3.3.4** The Contractor shall be responsible for inspection of portions of Work already performed under this Contract to determine that such portions are in proper condition to receive subsequent Work.

### **3.4 LABOR AND MATERIALS**

**3.4.1** Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

**3.4.2** The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Contract. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.

### **3.5 WARRANTY**

**3.5.1** The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform with the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, modifications not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear under normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

### **3.6 TAXES**

**3.6.1** The Contractor shall pay sales, consumer, use and similar taxes for the Work or portions thereof provided by the Contractor which is legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

### **3.7 PERMITS, FEES AND NOTICES**

**3.7.1** Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the governmental fees, licenses and inspections necessary for proper execution and completion of the Work which are customarily secured after execution of the Contract and which are legally required when bids are received or negotiations concluded. It will be the responsibility of the contractor to secure building permits. However, building permit fees will be waived by the City of Carrollton.

**3.7.2** The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations and lawful orders of public authorities bearing on performance of the Work.

**3.7.3** It is not the Contractor's responsibility to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations. However, if the Contractor observes that portions of the Contract Documents are at variance therewith, the Contractor shall promptly notify the Architect and Owner in writing, and necessary changes shall be accomplished by appropriate Modification,

**3.7.4** If the Contractor performs Work knowing it to be contrary to laws, statutes, ordinances, building codes, and rules and regulations without such notice to the Architect and Owner, the Contractor shall assume full responsibility for such Work and shall bear the attributable costs.

### **3.8 ALLOWANCES**

**3.8.1** The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities against which the Contractor makes reasonable objection.

**3.8.2** Unless otherwise provided in the Contract Documents:

- .1 materials and equipment under an allowance shall be selected promptly by the Owner to avoid delay in the Work;
- .2 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .3 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum and not in the allowances;
- .4 Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Clause 3.8.2.2 and (2) changes in Contractor's costs under Clause 3.8.2.3.

### **3.9 SUPERINTENDENT**

**3.9.1** The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case.

### **3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES**

**3.10.1** The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

**3.10.2** The Contractor shall prepare and keep current, for the Architect's approval, a schedule of submittals that is coordinated with the Contractor's construction schedule and allows the Architect reasonable time to review submittals.

**3.10.3** The Contractor shall conform to the most recent schedules.

### **3.11 DOCUMENTS AND SAMPLES AT THE SITE**

**3.11.1** The Contractor shall maintain at the site for the Owner one record copy of the Drawings, Specifications, addenda, Change Orders and other Modifications, in good order and marked currently to record changes and selections made during construction, and in addition approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the owner upon completion of the Work.

### **3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES**

**3.12.1** Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

**3.12.2** Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

**3.12.3** Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

**3.12.4** Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. The purpose of their submittal is to demonstrate for those portions of the Work for which submittals are required the way the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents. Review by the Architect is subject to the limitations of Subparagraph 4.2.7.

**3.12.5** The Contractor shall review, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors. Submittals made by the Contractor that are not required by the Contract Documents may be returned without action.

**3.12.6** The Contractor shall perform no portion of the Work requiring submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect. Such Work shall be in accordance with approved submittals.

**3.12.7** By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

**3.12.8** The Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and the Architect has given written approval to the specific deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

**3.12.9** The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals.

**3.12.10** Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents.

**3.12.11** When professional certification of performance criteria of materials, systems or equipment is required by the Contract Documents, the Architect shall be entitled to rely upon the accuracy and completeness of such calculations and certifications.

### **3.13 USE OF SITE**

**3.13.1** The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

### **3.14 CUTTING AND PATCHING**

**3.14.1** The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly.

**3.14.2** The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

### **3.15 CLEANING UP**

**3.15.1** The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work the Contractor shall remove from and about the Project waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials.

**3.15.2** If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the cost thereof shall be charged to the Contractor.

### **3.16 ACCESS TO WORK**

**3.16.1** The Contractor shall provide the Owner and Architect access to the Work in preparation and progress wherever located.

### **3.17 ROYALTIES AND PATENTS**

**3.17.1** The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a patent; the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

### **3.18 INDEMNIFICATION**

**3.18.1** To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses,

including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including loss of use resulting there from, but only to the extent caused in whole or in part by negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Paragraph 3.18.

**3.18.2** In claims against any person or entity indemnified under this Paragraph 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this Paragraph 3.18 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

**3.18.3** The obligations of the Contractor under this Paragraph 3.18 shall not extend to the liability of the Architect, the Architect's consultants, and agents and employees of any of them arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, Change Orders, designs or specifications, or (2) the giving of or the failure to give directions or instructions by the Architect, the Architect's consultants, and agents and employees of any of them provided such giving or failure to give is the primary cause of the injury or damage.

## **ARTICLE 4**

### **ADMINISTRATION OF THE CONTRACT**

#### **4.1 ARCHITECT**

**4.1.1** The Architect is the person lawfully licensed to practice architecture or an entity lawfully practicing architecture identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Architect" means the Architect or the Architect's authorized representative.

**4.1.2** Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Architect. Consent shall not be unreasonably withheld.

**4.1.3** In case of termination of employment of the Architect, the Owner shall appoint an architect against whom the Contractor makes no reasonable objection and whose status under the Contract Documents shall be that of the former architect.

**4.1.4** Disputes arising under Subparagraphs 4.1.2 and 4.1.3 shall be subject to arbitration.

#### **4.2 ARCHITECT'S ADMINISTRATION OF THE CONTRACT**

**4.2.1** The Architect will provide administration of the Contract as described in the Contract Documents, and will be the Owner's representative (1) during construction, (2) until final payment is due and (3) with the Owner's concurrence, from time to time during the correction period described in Paragraph 12.2. The Architect will advise and consult with the Owner, The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified by written instrument in accordance with other provisions of the Contract.

**4.2.2** The Architect will visit the site at intervals appropriate to the stage of construction to become generally familiar with the progress and quality of the completed Work and to determine in general if the Work is being performed in a manner indicating that the Work, when completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check quality or quantity of the Work. On the basis of on-site observations as an architect, the Architect will keep the Owner informed of progress of the Work, and will endeavor to guard the Owner against defects and deficiencies in the Work.

**4.2.3** The Architect will not have control over or charge of and will not be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, since these are solely the Contractor's responsibility as provided in Paragraph 3.3. The Architect will not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or of any other persons performing portions of the Work.

**4.2.4 Communications Facilitating Contract Administration.** Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate through the Architect. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

**4.2.5** Based on the Architect's observations and evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

**4.2.6** The Architect will have authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable for implementation of the intent of the Contract Documents, the Architect will have authority to require additional inspection or testing of the Work in accordance with Subparagraphs 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons performing portions of the Work.

**4.2.7** The Architect will review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken with such reasonable promptness as to cause no delay in the Work or in the activities of the Owner, Contractor or separate contractors, while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, a of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Paragraphs 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

**4.2.8** The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Paragraph 7.4.

**4.2.9** The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion, will receive and forward to the Owner for the Owner's review and records written warranties and related documents required by the Contract and assembled by the Contractor, and will issue a final Certificate for Payment upon compliance with the requirements of the Contract Documents.

**4.2.10** If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

**4.2.11** The Architect will interpret and decide matters concerning performance under and requirements of the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made with reasonable promptness and within any time limits agreed upon. If no agreement is made concerning the time within which interpretations required of the Architect shall be furnished in compliance with this Paragraph 4.2, then delay shall not be recognized on account of failure by the Architect to furnish such interpretations until 15 days after written request is made for them.

**4.2.12** Interpretations and decisions of the Architect will be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions so rendered in good faith.

**4.2.13** The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

### **4.3 CLAIMS AND DISPUTES**

**4.3.1 Definition.** A Claim is a demand or assertion by one of the parties seeking, as a matter of right, adjustment or interpretation of Contract terms, payment of money, extension of time or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. Claims must be made by written notice. The responsibility to substantiate Claims shall rest with the party making the Claim.

**4.3.2 Decision of Architect.** Claims, including those alleging an error or omission by the Architect shall be referred initially to the Architect for action as provided in Paragraph 4.4. A decision by the Architect, as provided in Subparagraph 4.4.4, shall be required as a condition precedent to arbitration or litigation of a Claim between the Contractor and Owner as to all such matters arising prior to the date final payment is due, regardless of (1) whether such matters relate to execution and progress of the Work or (2) the extent to which the Work has been completed. The decision by the Architect in response to a Claim shall not be a condition precedent to arbitration or litigation in the event (1) the position of, Architect is vacant, (2) the Architect has not received evidence or has failed to render a decision within agreed time limits, (3) the Architect has failed to take action required under Subparagraph 4.4.4 within 30 days after the Claim is made, (4) 45 days have passed after the Claim has been referred to the Architect or (5) the Claim relates to a mechanic's lien.

**4.3.3 Time Limits on Claims.** Claims by either party must be made within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Claims must be made by written notice. An additional Claim made after the initial Claim has been implemented by Change Order will not be considered unless submitted in a timely manner.

**4.3.4 Continuing Contract Performance.** Pending final resolution of a Claim including arbitration, unless otherwise agreed in writing the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

**4.3.5 Waiver of Claims: Final Payment.** The making of final payment shall constitute a waiver of Claims by the Owner except those arising from:

- .1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents; or
- .3 terms of special warranties required by the Contract Documents.

**4.3.6 Claims for Concealed or Unknown Conditions.** If conditions are encountered at the site which are (1) subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then notice by the observing party shall be given to the other party promptly before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall so notify the Owner and Contractor in writing, stating the reasons. Claims by either party in opposition to such determination must be made within 21 days after the Architect has given notice of the decision. If the Owner and Contractor cannot agree on an adjustment in the Contract Sum or Contract Time, the adjustment shall be referred to the Architect for initial determination, subject to further proceedings pursuant to Paragraph 4.4.

**4.3.7 Claims for Additional Cost.** If the Contractor wishes to make Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Paragraph 10.3. If the Contractor believes additional cost is involved for reasons including but not limited to (1) a written interpretation from the Architect, (2) an order by the Owner to stop the Work where the Contractor was not at fault, (3) a written order for a minor change in the Work issued by the Architect, (4) failure of payment by the Owner, (5) termination of the Contract by the Owner, (6) Owner's suspension or (7) other reasonable grounds, Claim shall be filed in accordance with the procedure established herein.

#### **4.3.8 Claims for Additional Time**

**4.3.8.1** If the Contractor wishes to make Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay only one Claim is necessary.

**4.3.8.2** If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time and could not have been reasonably anticipated, and that weather conditions had an adverse effect on the scheduled construction.

**4.3.9 Injury or Damage to Person or Property.** If either party to the Contract suffers injury or damage to person or property because of an act or omission of the other party, of any of the other party's employees or agents, or of others for whose acts such party is legally liable, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after first observance. The notice shall provide sufficient detail to enable the other party to investigate the matter. If a Claim for additional cost or time related to this Claim is to be asserted, it shall be filed as provided in Subparagraphs 4.3.7 or 4.3.8.

#### **4.4 RESOLUTION OF CLAIMS AND DISPUTES**

**4.4.1** The Architect will review Claims and take one or more of the following preliminary actions within ten days of receipt of a Claim: (1) request additional supporting data from the claimant, (2) submit a schedule to the parties indicating when the Architect expects to take action, (3) reject the Claim in whole or in part, stating reasons for rejection, (4) recommend approval of the Claim by the other party or (5) suggest a compromise. The Architect may also, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim.

**4.4.2** If a Claim has been resolved, the Architect will prepare or obtain appropriate documentation.

**4.4.3** If a Claim has not been resolved; the party making the Claim shall, within ten days after the Architect's preliminary response, take one or more of the following actions: (1) submit additional supporting data requested by the Architect, (2) modify the initial Claim or (3) notify the Architect that the initial Claim stands.

**4.4.4** If a Claim has not been resolved after consideration of the foregoing and of further evidence presented by the parties or requested by the Architect, the Architect will notify the parties in writing that the Architect's decision will be made within seven days, which decision shall be final and binding on the parties but subject to arbitration. Upon expiration of such time period, the Architect will render to the parties the Architect's written decision relative to the Claim, including any change in the Contract Sum or Contract Time or both. If there is a surety and there appears to be a possibility of a Contractor's default, the Architect may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

#### **4.5 ARBITRATION**

**4.5.1 Controversies and Claims Subject to Arbitration.** Any controversy or Claim arising out of or related to the Contract, or the breach thereof, shall be settled by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association, and judgment upon the award rendered by the arbitrator or arbitrators may be entered in any court having jurisdiction thereof, except controversies or Claims relating to aesthetic effect and except those waived as provided for in Subparagraph 4.3.5. Such controversies or Claims upon which the Architect has given notice and rendered a decision as provided in Subparagraph 4.4.4 shall be subject to arbitration upon written demand of either party. Arbitration may be commenced when 45 days have passed after a Claim has been referred to the Architect as provided in Paragraph 4.3 and no decision has been rendered.

**4.5.2 Rules and Notices for Arbitration.** Claims between the Owner and Contractor not resolved under Paragraph 4.4 shall, if subject to arbitration under Subparagraph 4.5.1, be decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association currently in effect, unless the parties mutually agree otherwise. Notice of demand for arbitration shall be filed in writing with the other party to the Agreement between the Owner and Contractor and with the American Arbitration Association, and a copy shall be filed with the Architect.

**4.5.3 Contract Performance during Arbitration.** During arbitration proceedings, the Owner and Contractor shall comply with Subparagraph 4.3.4.

**4.5.4 When Arbitration May Be Demanded.** Demand for arbitration of any Claim may not be made until the earlier of (1) the date on which the Architect has rendered a final written decision on the Claim, (2) the tenth day after the parties have presented evidence to the Architect or have been given reasonable opportunity to do so, if the Architect has not rendered a final written decision by that date, or (3) any of the five events described in Subparagraph 4.3.2.

**4.5.4.1** When a written decision of the Architect states that (1) the decision is final but subject to arbitration and (2) a demand for arbitration of a Claim covered by such decision must be made within 30 days after the date on which the party making the demand receives the final written decision, then failure to demand arbitration within said 30 days' period shall result in the Architect's decision becoming final and binding upon the Owner and Contractor. If the Architect renders a decision after arbitration proceedings have been initiated, such decision may be entered as evidence, but shall not supersede arbitration proceedings unless the decision is acceptable to all parties concerned.

**4.5.4.2** A demand for arbitration shall be made within the time limits specified in Subparagraphs 4.5.1 and 4.5.4 and Clause 4.5.4.1 as applicable, and in other cases within a reasonable time after the Claim has arisen, and in no event shall it be made after the date when institution of legal or equitable proceedings based on such Claim would be barred by the applicable statute of limitations as determined pursuant to Paragraph 13.7.

**4.5.5 Limitation on Consolidation or Joinder.** No arbitration arising out of or relating to the Contract Documents shall include, by consolidation or joinder or in any other manner, the Architect, the Architect's employees or consultants, except by written consent containing specific reference to the Agreement and signed by the Architect, Owner, Contractor and any other person or entity sought to be joined. No arbitration shall include, by consolidation or joinder or in any other manner, parties other than the Owner, Contractor, a separate contractor as described in Article 6 and other persons substantially involved in a

common question of fact or law whose presence is required if complete relief is to be accorded in arbitration, No person or entity other than the Owner, Contractor or a separate contractor as described in Article 6 shall be included as an original third party or additional third party to an arbitration whose interest or responsibility is insubstantial. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of a dispute not described therein or with a person or entity not named or described therein. The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

**4.5.6 Claims and Timely Assertion of Claims.** A party who files a notice of demand for arbitration must assert in the demand a Claims then known to that party on which arbitration is permitted to be demanded. When a party fails to include a Claim through oversight, inadvertence or excusable neglect, or when a Claim has matured or been acquired subsequently, the arbitrator or arbitrators may permit amendment.

**4.5.7 Judgment on Final Award.** The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

## ARTICLE 5

### SUBCONTRACTORS

#### 5.1 DEFINITIONS

**5.1.1** A Subcontractor is a person or entity that has a direct contract with the contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor, The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

**5.1.2** A Sub-subcontractor is a person or entity that has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

#### 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

**5.2.1** Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect will promptly reply to the Contractor in writing stating whether or not the Owner or the Architect, after due investigation, has reasonable objection to any such proposed person or entity. Failure of the Owner or Architect to reply promptly shall constitute notice of no reasonable objection.

**5.2.2** The Contractor shall not contract with a proposed person or entity to which the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

**5.2.3** If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. The Contract Sum shall be increased or decreased by the difference in cost occasioned by such change and an appropriate Change Order shall be issued. However, no increase in the Contract Sum shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

**5.2.4** The Contractor shall not change a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such change.

#### 5.3 SUBCONTRACTUAL RELATIONS

**5.3.1** By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each

Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement which may be at variance with the Contract Documents. Subcontractors shall similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

#### **5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS**

**5.4.1** Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner provided that:

- .1 assignment is effective only after termination of the Contract by the Owner for cause, pursuant to Paragraph 14.2 and only for those subcontract agreements which the Owner accepts by notifying the Subcontractor in writing; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

**5.4.2** If the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted.

### **ARTICLE 6**

#### **CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS**

##### **6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS**

**6.1.1** The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided elsewhere in the Contract Documents.

**6.1.2** When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

**6.1.3** The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules when directed to do so. The Contractor shall make any revisions to the construction schedule and Contract Sum deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

**6.1.4** Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same, obligations and to have the same rights which apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

##### **6.2 MUTUAL RESPONSIBILITY**

**6.2.1** The Contractor shall afford the Owner and separate contractors' reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

**6.2.2** If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractors' completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

**6.2.3** Costs caused by delays or by improperly timed activities or defective construction shall be borne by the party responsible therefore.

**6.2.4** The Contractor shall promptly remedy damage wrongfully caused by the Contractor to completed or partially completed construction or to property of the Owner or separate contractors as provided in Subparagraph 10.2.5.

**6.2.5** Claims and other disputes and matters in question between the Contractor and a separate contractor shall be subject to the provisions of Paragraph 4.3 provided the separate contractor has reciprocal obligations,

**6.2.6** The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Paragraph 3.14.

### **6.3 OWNER'S RIGHT TO CLEAN UP**

**6.3.1** If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish as described in Paragraph 3.15, the Owner may clean up and allocate the cost among those responsible as the Architect determines to be just.

## **ARTICLE 7**

### **CHANGES IN THE WORK**

#### **7.1 CHANGES**

**7.1.1** Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order. for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

**7.1.2** A Change Order shall be based upon agreement among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect alone.

**7.1.3** Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

**7.1.4** If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are so changed in a proposed Change Order or Construction Change Directive that application of such unit prices to quantities of Work proposed would cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

#### **7.2 CHANGE ORDERS**

**7.2.1** A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect, stating their agreement upon all of the following:

- .1 a change in the Work;
- .2 the amount of the adjustment in the Contract Sum, if any; and
- .3 the extent of the adjustment in the Contract Time, if any.

**7.2.2** Methods used in determining adjustments to the Contract Sum may include those listed in Subparagraph 7.3.3.

#### **7.3 CONSTRUCTION CHANGE DIRECTIVES**

**7.3.1** A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work and stating a proposed basis for adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

**7.3.2** A Construction Change Directive shall be used in the absence of total agreement on, the terms of a Change Order.

**7.3.3** If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 cost to be determined in a manner agreed upon by the parties and percentage fees as follows:  
cost plus 12% for work done by the General Contractor's own forces,

.4 cost plus 7.5% for work done by the General Contractor's sub-contractors; or as provided in Subparagraph 7.3.6.

**7.3.4** Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

**7.3.5** A Construction Change Directive signed by the Contractor indicates the agreement of the Contractor therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

**7.3.6** If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the method and the adjustment shall be determined by the Architect on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, a reasonable allowance for overhead and profit. In such case, and also under Clause 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Subparagraph 7.3.6 shall be limited to the following:

- .1 costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' or workmen's compensation insurance;
- .2 costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- .3 rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and
- .5 additional costs of supervision and field office personnel directly attributable to the change.

**7.3.7** Pending final determination of cost to the Owner, amounts not in dispute may be included in Applications for Payment. The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

**7.3.8** If the Owner and Contractor do not agree with the adjustment in Contract Time or the method for determining it, the adjustment or the method shall be referred to the Architect for determination.

**7.3.9** When the Owner and Contractor agree with the determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and shall be recorded by preparation and execution of an appropriate Change Order.

## **7.4 MINOR CHANGES IN THE WORK**

**7.4.1** The Architect will have authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly.

## **ARTICLE 8**

### **TIME**

#### **8.1 DEFINITIONS**

**8.1.1** Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work,

**8.1.2** The date of commencement of the Work is the date established in the Agreement. The date shall not be postponed by the failure to act of the Contractor or of persons or entities for whom the Contractor is responsible.

**8.1.3** The date of Substantial Completion is the date certified by the Architect in accordance with Paragraph 9.8.

**8.1.4** The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

#### **8.2 PROGRESS AND COMPLETION**

**8.2.1** Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

**8.2.2** The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor. The date of commencement of the Work shall not be changed by the effective date of such insurance. Unless the date of commencement is established by a notice to proceed given by the Owner, the Contractor shall notify the Owner in writing not less than five days or other agreed period before commencing the Work to permit the timely filing of mortgages, mechanic's liens and other security interests.

**8.2.3** The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

### **8.3 DELAYS AND EXTENSIONS OF TIME**

**8.3.1** If the Contractor is delayed at any time in progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of 2 separate contractor employed by the Owner, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control, or by delay authorized by the Owner pending arbitration, or by other causes which the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

**8.3.2** Claims relating to time shall be made in accordance with applicable provisions of Paragraph 4.3.

**8.3.3** This Paragraph 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

## **ARTICLE 9**

### **PAYMENTS AND COMPLETION**

#### **9.1 CONTRACT SUM**

**9.1.1** The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

#### **9.2 SCHEDULE OF VALUES**

**9.2.1** Before the first Application for Payment, the Contractor shall submit to the Architect a schedule of values allocated to various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

#### **9.3 APPLICATIONS FOR PAYMENT**

**9.3.1** At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment for operations completed in accordance with the schedule of values. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and reflecting retainage if provided for elsewhere in the Contract Documents.

**9.3.1.1** Such applications may include requests for payment on account of changes in the Work that has been properly authorized by Construction Change Directives but not yet included in Change Orders.

**9.3.1.2** Such applications may not include requests for payment of amounts the Contractor does not intend to pay to a Subcontractor or material supplier because of a dispute or other reason.

**9.3.2** Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

**9.3.3** The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

#### **9.4 CERTIFICATES FOR PAYMENT**

**9.4.1** The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Subparagraph 9.5.1.

**9.4.2** The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's observations at the site and the data comprising the Application for Payment, that the Work has progressed to the point indicated and that, to the best of the Architect's knowledge, information and belief, quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to minor deviations from the Contract Documents correctable prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

#### **9.5 DECISIONS TO WITHHOLD CERTIFICATION**

**9.5.1** The Architect may decide not to certify payment and may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Subparagraph 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Subparagraph 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also decide not to certify payment or, because of subsequently discovered evidence or subsequent observations, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss because of:

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims;
- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or another contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 persistent failure to carry out the Work in accordance with the Contract Documents.

**9.5.2** When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

#### **9.6 PROGRESS PAYMENTS**

**9.6.1** After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

**9.6.2** The Contractor shall promptly pay each Subcontractor, upon receipt of payment from the Owner, out of the amount paid to the Contractor on account of such Subcontractor's portion of the Work, the amount to which said Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of such Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in similar manner.

**9.6.3** The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

**9.6.4** Neither the Owner nor Architect shall have an obligation to pay nor to see to the payment of money to a Subcontractor except as may otherwise be required by law.

**9.6.5** Payment to material suppliers shall be treated in a manner similar to that provided in Subparagraphs 9.6.2, 9.6.3 and 9.6.4.

**9.6.6** A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

## **9.7 FAILURE OF PAYMENT**

**9.7.1** If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Architect or awarded by arbitration, then the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, which shall be accomplished as provided in Article 7.

## **9.8 SUBSTANTIAL COMPLETION**

**9.8.1** Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the Work for its intended use.

**9.8.2** When the Contractor considers that the Work, or a portion thereof which the owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected. The Contractor shall proceed promptly to complete and correct items on the list. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item whether or not included on the Contractor's list, which is not in accordance with the requirements of the Contract Documents, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. The Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion. When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion which shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion. The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate.

**9.8.3** Upon Substantial Completion of the Work or designated portion thereof and upon application by the Contractor and certification by the Architect, the Owner shall make payment, reflecting adjustment in retainage, if any, for such Work or portion thereof as provided in the Contract Documents.

## **9.9 PARTIAL OCCUPANCY OR USE**

**9.9.1** The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Subparagraph 11.3.11 and authorized by public authorities having jurisdiction over the Work. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Subparagraph 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

**9.9.2** Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

**9.9.3** Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

## **9.10 FINAL COMPLETION AND FINAL PAYMENT**

**9.10.1** Upon receipt of written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's observations and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in said final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Subparagraph 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

**9.10.2** Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be cancelled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

**9.10.3** If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims. The making of final payment shall constitute a waiver of claims by the Owner as provided in Subparagraph 4.3.5.

**9.10.4** Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment. Such waivers shall be in addition to the waiver described in Subparagraph 4.3.5.

## **ARTICLE 10**

### **PROTECTION OF PERSONS AND PROPERTY**

#### **10.1 SAFETY PRECAUTIONS AND PROGRAMS**

**10.1.1** The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

**10.1.2** in the event the Contractor encounters on the site material reasonably believed to be asbestos or polychlorinated biphenyl (PCB) that has not been rendered harmless, the Contractor shall immediately stop Work in the area affected and report the condition to the Owner and Architect in writing. The Work in the affected area shall not thereafter be resumed except by written agreement of the Owner and Contractor if in fact the material is asbestos or polychlorinated biphenyl (PCB) and has not been rendered harmless. The Work in the affected area shall be resumed in the absence of asbestos or polychlorinated biphenyl (PCB), or when it has been rendered harmless, by written agreement of the Owner and Contractor, or in accordance with final determination by the Architect on which arbitration has not been demanded, or by arbitration under Article 4.

**10.1.3** The Contractor shall not be required pursuant to Article 7 to perform without consent any Work relating to asbestos or polychlorinated biphenyl (PCB).

**10.1.4** To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material is asbestos or polychlorinated biphenyl (PCB) and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself including loss of use resulting there from, but only to the extent caused in whole or in part by negligent acts or omissions of the Owner, anyone directly or indirectly employed by the Owner or anyone for whose acts the Owner may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Subparagraph 10.1.4.

## **10.2 SAFETY OF PERSONS AND PROPERTY**

**10.2.1** The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to:

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on for off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

**10.2.2** The Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

**10.2.3** The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

**10.2.4** When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

**10.2.5** The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Clauses 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Clauses 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Paragraph 3.18.

**10.2.6** The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

**10.2.7** The Contractor shall not load or permit any part of the construction or site to be loaded so as to endanger its safety.

## **10.3 EMERGENCIES**

**10.3.1** in an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Paragraph 4.3 and Article 7.

## **ARTICLE 11**

### **INSURANCE AND BONDS**

#### **11.1 CONTRACTOR'S LIABILITY INSURANCE**

**11.1.1** The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations under the Contract and for which the Contractor may be legally

liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 claims under workers' or workmen's compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- .2 claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 claims for damages insured by usual personal injury liability coverage that are sustained (1) by a person as a result of an offense directly or indirectly related to employment of such person by the Contractor, or (2) by another person;
- .5 claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting there from;
- .6 claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle; and
- .7 claims involving contractual liability insurance applicable to the Contractor's obligations under Paragraph 3.18.

**11.1.2** The insurance required by Subparagraph 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from date of commencement of the Work until date of final payment and termination of any coverage required to be maintained after final payment.

**11.1.3** Certificates of Insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work. These Certificates and the insurance policies required by this Paragraph 11.1 shall contain a provision that coverages afforded under the policies will not be cancelled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. If any of the foregoing insurance coverages are required to remain in force after final payment and are reasonably available, an additional certificate evidencing continuation of such coverage shall be submitted with the final Application for Payment as required by Subparagraph 9.10.2. Information concerning reduction of coverage shall be furnished by the Contractor with reasonable promptness in accordance with the Contractor's information and belief.

## **11.2 OWNER'S LIABILITY INSURANCE**

**11.2.1** The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance. Optionally, the Owner may purchase and maintain other insurance for self-protection against claims that may arise from operations under the Contract. The Contractor shall not be responsible for purchasing and maintaining this optional Owner's liability insurance unless specifically required by the Contract Documents.

## **11.3 PROPERTY INSURANCE**

**11.3.1** Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance in the amount of the initial Contract Sum as well as subsequent modifications thereto for the entire Work at the site on a replacement cost basis without voluntary deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Paragraph 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Paragraph 11.3 to be covered, whichever is earlier. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Work.

**11.3.1.1** Property insurance shall be on an all-risk policy form and shall insure against the perils of fire and extended coverage and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, false-work, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's services and expenses required as a result of such insured loss. Coverage for other perils shall not be required unless otherwise provided in the Contract Documents.

**11.3.1.2** If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then affect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor, then the Owner shall bear all reasonable costs properly attributable thereto.

**11.3.1.3** If the property insurance requires minimum deductibles and such deductibles are identified in the Contract Documents, the Contractor shall pay costs not covered because of such deductibles. If the Owner or insurer increases the

required minimum deductibles above the amounts so identified or if the Owner elects to purchase this insurance with voluntary deductible amounts, the Owner shall be responsible for payment of the additional costs not covered because of such increased or voluntary deductibles. If deductibles are not identified in the Contract Documents, the Owner shall pay costs not covered because of deductibles.

**11.3.1.4** Unless otherwise provided in the Contract Documents, this property insurance shall cover portions of the Work stored off the site after written approval of the Owner at the value established in the approval, and also portions of the Work in transit.

**11.3.2 Boiler and Machinery Insurance.** The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

**11.3.3 Loss of Use Insurance.** The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

**11.3.4** If the Contractor requests in writing that insurance for risks other than those described herein or for other special hazards be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

**11.3.5** If during the Project construction period the Owner insures properties, real or personal or both, adjoining or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Subparagraph 11.3.7 for damages caused by fire or other perils covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

**11.3.6** Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Paragraph 11.3. Each policy shall contain all generally applicable conditional definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be cancelled or allowed to expire until at least 30 days' prior written notice has been given to the Contractor.

**11.3.7 Waivers of Subrogation.** The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other perils to the extent covered by property insurance obtained pursuant to this Paragraph 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

**11.3.8** A loss insured under Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Subparagraph 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

**11.3.9** If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or in accordance with an arbitration award in which case the procedure shall be as provided in Paragraph 4.5. if after such loss no other special agreement is made, replacement of damaged property shall be covered by appropriate Change Order.

**11.3.10** The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection be made, arbitrators shall be chosen as provided in Paragraph 4.5. The Owner as fiduciary shall, in that case, make settlement

with insurers in accordance with directions of such arbitrators, if distribution of insurance proceeds by arbitration is required, the arbitrators will direct such distribution.

**11.3.11** Partial occupancy or use in accordance with Paragraph 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

#### **11.4 PERFORMANCE BOND AND PAYMENT BOND**

**11.4.1** The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

**11.4.2** Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall permit a copy to be made.

### **ARTICLE 12**

#### **UNCOVERING AND CORRECTION OF WORK**

##### **12.1 UNCOVERING OF WORK**

**12.1.1** If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if required in writing by the Architect, be uncovered for the Architect's observation and be replaced at the Contractor's expense without change in the Contract Time.

**12.1.2** If a portion of the Work has been covered which the Architect has not specifically requested to observe prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be charged to the Owner. If such Work is not in accordance with the Contract Documents, the Contractor shall pay such costs unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

##### **12.2 CORRECTION OF WORK**

**12.2.1** The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether observed before or after Substantial Completion and whether or not fabricated, installed or completed. The Contractor shall bear costs of correcting such rejected Work, including additional testing and inspections and compensation for the Architect's services and expenses made necessary thereby.

**12.2.2** If, within one year after the date of Substantial Completion of the Work or designated portion thereof, or after the date for commencement of warranties established under Subparagraph 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. This period of one year shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual performance of the Work. This obligation under this Subparagraph 12.2.2 shall survive acceptance of the Work under the Contract and termination of the Contract. The Owner shall give such notice promptly after discovery of the condition.

**12.2.3** The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner;

**12.2.4** If the Contractor fails to correct nonconforming Work within a reasonable time, the Owner may correct it in accordance with Paragraph 2.4. If the Contractor does not proceed with correction of such nonconforming Work within a reasonable time fixed by written notice from the Architect, the owner may remove it and store the salvable materials or equipment at the Contractor's expense. If the Contractor does not pay costs of such removal and storage within ten days after written notice, the Owner may upon ten additional days' written notice sell such materials and equipment at auction or at private sale and shall account for the proceeds thereof, after deducting costs and damages that should have been borne by the Contractor, including compensation for the Architect's services and expenses made necessary thereby. If such proceeds of

sale do not cover costs that the Contractor should have borne, the Contract Sum shall be reduced by the deficiency, If payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Owner.

**12.2.5** The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work which is not in accordance with the requirements of the Contract Documents.

**12.2.6** Nothing contained in this Paragraph 12.2 shall be construed to establish a period of limitation with respect to other obligations that the Contractor might have under the Contract Documents. Establishment of the time period of one year as described in Subparagraph 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

### **12.3 ACCEPTANCE OF NONCONFORMING WORK**

**12.3.1** If the Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

## **ARTICLE 13**

### **MISCELLANEOUS PROVISIONS**

#### **13.1 GOVERNING LAW**

**13.1.1** The Contract shall be governed by the law of the place where the Project is located.

#### **13.2 SUCCESSORS AND ASSIGNS**

**13.2.1** The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to the other party hereto and to partners, successors, assigns and legal representatives of such other party in respect to covenants, agreements and obligations contained in the Contract Documents. Neither party to the Contract shall assign the Contract as a whole without written consent of the other. if either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

#### **13.3 WRITTEN NOTICE**

**13.3.1** written notice shall be deemed to have been duty served if delivered in person to the individual or a member of the firm or entity or to an officer of the corporation for which it was intended, or if delivered at or sent by registered or certified mail to the last business address known to the party giving notice.

#### **13.4 RIGHTS AND REMEDIES**

**13.4.1** Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

**13.4.2** No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing.

#### **13.5 TESTS AND INSPECTIONS**

**13.5.1** Tests, inspections and approvals of portions of the Work required by the Contract Documents or by laws, ordinances, rules, regulations or orders of public authorities having jurisdiction shall be made at an appropriate time. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice, of when and where tests and inspections are to be made so the Architect may observe such procedures. The Owner shall bear costs of tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded.

**13.5.2** If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Subparagraph 13.5. 1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so the Architect may observe such procedures. The Owner shall bear such costs except as provided in Subparagraph 13.5.3.

**13.5.3** If such procedures for testing, inspection or approval under Subparagraphs 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, the Contractor shall bear all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses.

**13.5.4** Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

**13.5.5** If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

**13.5.6** Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

### **13.6 INTEREST**

**13.6.1** Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

### **13.7 COMMENCEMENT OF STATUTORY LIMITATION PERIOD**

**13.7.1** As between the Owner and Contractor:

**.1 Before Substantial Completion.** As to acts or failures to act occurring prior to the relevant date of Substantial Completion, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than such date of Substantial Completion;

**.2 Between Substantial Completion and Final Certificate for Payment.** As to acts or failures to act occurring subsequent to the relevant date of Substantial Completion and prior to issuance of the final Certificate for Payment, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of issuance of the final Certificate for Payment; and

**.3 After Final Certificate for Payment.** As to acts or failures to act occurring after the relevant date of issuance of the final Certificate for Payment, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of any act or failure to act by the Contractor pursuant to any warranty provided under Paragraph 3.5, the date of any correction of the Work or failure to correct the Work by the Contractor under Paragraph 12.2, or the date of actual commission of any other act or failure to perform any duty or obligation by the Contractor or Owner, whichever occurs last.

## **ARTICLE 14**

### **TERMINATION OR SUSPENSION OF THE CONTRACT**

#### **14.1 TERMINATION BY THE CONTRACTOR**

**14.1.1** The Contractor may terminate the Contract if the Work is stopped for a period of 30 days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor, for any of the following reasons:

**.1** issuance of an order of a court or other public authority having jurisdiction;

**.2** an act of government, such as a declaration of national emergency, making material unavailable;

**.3** because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Subparagraph 9.4. 1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents;

**.4** if repeated suspensions, delays or interruptions by the Owner as described in Paragraph 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any, 365-day period, whichever is less; or

**.5** the Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Subparagraph 2.2.1.

**14.1.2** If one of the above reasons exists, the Contractor may, upon seven additional days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed and for proven loss with respect to materials, equipment, tools, and construction equipment and machinery, including reasonable overhead, profit and damages.

**14.1.3** If the Work is stopped for a period of 60 day's through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has persistently failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Subparagraph 14.1.2.

## **14.2 TERMINATION BY THE OWNER FOR CAUSE**

**14.2.1** The Owner may terminate the Contract if the Contractor:

- .1 persistently or repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 persistently disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

**14.2.2** When any of the above reasons exist, the Owner, upon certification by the Architect that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 takes possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 accept assignment of subcontracts pursuant to Paragraph 5.4; and
- .3 finishes the Work by whatever reasonable method the Owner may deem expedient.

**14.2.3** When the Owner terminates the Contract for one of the reasons stated in Subparagraph 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

**14.2.4** If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, such excess shall be paid to the Contractor, If such costs exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Architect, upon application, and this obligation for payment shall survive termination of the Contract.

## **14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE**

**14.3.1** The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

**14.3.2** An adjustment shall be made for increases in the cost of performance of the Contract, including profit on the increased cost of performance, caused by suspension, delay or interruption. No adjustment shall be made to the extent:

- .1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of this Contract.

**14.3.3** Adjustments made in the cost of performance may have a mutually agreed fixed or percentage fee.

**End of Document**

# **Standard Form of Agreement Between Owner and Contractor**

*where the Basis of Payment is a STIPULATED SUM*

This **AGREEMENT** is made:

**BETWEEN** the Owner:

and the Contractor:

for the following Project:

The Architect is:

Alan Bell Architect, Inc.  
128 Lovvorn Road  
Carrollton, GA 30117

The Owner and Contractor agree as follows.

## ARTICLE 1

### THE CONTRACT DOCUMENTS

The Contractor shall complete the Work described in the Contract Documents for the project. The Contract Documents consist of:

- .1 this Agreement signed by the Owner and Contractor;
- .2 General Conditions of the Contract;
- .3 the Drawings and Specifications prepared by the Architect, dated and enumerated as follows:

Drawings:

T-1  
Civil Title Sheet  
C-1A.0 thru C-6.0  
CD-1.0 thru CD-4.0  
A-1 thru A-15  
P-1  
E-1 thru E-5

Specifications:

As noted on drawings and Project Manual

- .4 addenda prepared by the Architect as follows:
  - Addendum #\_\_\_
  - Addendum #\_\_\_
  - Addendum #\_\_\_
- .5 written change orders or orders for minor changes in the Work issued after execution of this Agreement; and
- .6 other documents, if any, identified as follows:

## ARTICLE 2

### DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION DATE

The date of commencement shall be the date of this Agreement unless otherwise indicated below. The Contractor shall substantially complete the Work not later than \_\_\_\_\_, 2011 subject to adjustment by Change Order.

### **ARTICLE 3**

#### **CONTRACT SUM**

- 3.1** Subject to additions and deductions by Change Order, the Contract Sum is: \$ \_\_\_\_\_
- 3.2** The Contract Sum shall include all items and services necessary for the proper execution and completion of the Work.

### **ARTICLE 4**

#### **PAYMENT**

- 4.1** Based on Contractor's Applications for Payment certified by the Architect, the Owner shall pay the Contractor as follows:

Pay requests shall be submitted on AIA Document G702, Application and Certificate for Payment with AIA Document G703, Continuation Sheet no later than the 25th of each month for payment to be made on the 10th of the following month, with 10% retainage on each draw amount until work is half completed. At that time, if owner is satisfied with progress, retainage may be dropped from remainder of pay requests.

- 4.2** Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate of 1.5% per month, or in the absence thereof, at the legal rate prevailing at the place of the Project.

### **ARTICLE 5**

#### **INSURANCE**

- 5.1** The Contractor shall provide Contractor's Liability and other Insurance as follows:

Workmen's Compensation Insurance for at least \$500,000 each occurrence and \$500,000 total for bodily injury including personal injury.  
Property damage for at least \$100,000

- 5.2** The Owner shall provide Owner's Liability and Owner's Property Insurance as follows:

Property insurance in the full amount of insurable value. The insurance shall include the interests of the bank, or other mortgage holder, if any, and the Owner shall insure against "all risks" of physical loss or damage

**5.3** The Contractor shall obtain an endorsement to its general liability insurance policy to cover the Contractor's obligations under Paragraph 3 of General Conditions of the Contract.

**5.4** Certificated of insurance shall be provided by each party showing their respective coverage prior to commencement of the Work.

**ARTICLE 6**

**OTHER TERMS AND CONDITIONS**

This Agreement entered into as of the day and year first written above.

OWNER

CONTRACTOR

\_\_\_\_\_  
*(Signature)*

\_\_\_\_\_  
*(Signature)*

\_\_\_\_\_

\_\_\_\_\_

**PART 1 - GENERAL**

**1.01 DESCRIPTION:**

- A. Name of Project: **A New Amphitheater For:  
City of Carrollton  
Carrollton, Georgia**
- B. Owner: City of Carrollton  
315 Bradley Street  
Carrollton, Georgia 30117
- C. Contract Documents: Prepared by A. Alan Bell, Architect, Inc.
- D. Summary by References: Work of Contract can be summarized by reference to the contract, contract conditions, and specification sections as listed in the Project Manual "Table of Contents", drawings listed in "List of Drawings", and addenda and modifications to the contract documents issued after printing this project manual.
- E. Abbreviated Written Summary:
  - 1. Work under base bid:
    - a. **A New Amphitheater @ 122 Bradley Street**

**1.02 ALTERNATES:**

- A. Definitions: Alternates are defined as alternate products, materials, equipment or systems for the work, which may, at Owner's option be selected and recorded in the contract (Owner-Contractor Agreement) to either supplement or replace corresponding basic requirements of contract documents.
- B. General Provisions: Alternates are listed at end of this section. Each alternate is defined by abbreviated language, recognizing that drawings and specification sections document the requirements. Coordination of related work is required to ensure that work affected by each selected alternate is complete and properly interfaced with work of alternates.
- C. Notification: Immediately following award of Contract, prepare and distribute to each entity to be involved in performance of the work, a notification of status of each alternate. Indicate which alternates have been: 1) Accepted, 2) Rejected, and 3) Deferred for consideration at a later date as indicated. Include full description of negotiated modifications to alternates, if any.

**PART 2 - NOT USED**

**PART 3 - EXECUTION**

- 3.01 ALTERNATES:** No alternates at this time (*June 10, 2011*)

END OF SECTION 01005

**PART 1 - GENERAL**

1.1.1. RELATED DOCUMENTS

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

1.1.2. COORDINATION

- A. Owner retains the right to place and install, in coordination with Contractor's construction schedule, as many items and/or as much equipment as he may require during the progress of the Work, before completion of the various parts of the Work. This shall not in any way evidence completion of the Work or any portion thereof, nor shall it signify Owner's acceptance of the Work or any portion thereof.

**PART 2 - PRODUCTS**

1.1.1. BY OWNER PRODUCTS

- A. By Owner: Items shown or noted "By Owner" on the drawings and/or in the specifications shall be furnished and installed by Owner. As a part of the contract, the general contractor shall be responsible for coordinating and scheduling with the owner and the owner's subcontractors for owner furnished and installed items. Included, but not inclusive, in this category are:
  - 1. Woven PVC shading/cable system
  - 2. Landscaping
  - 3. Audio/Visual equipment
  - 4. Park Amenities (picnic tables, umbrellas, etc....)
- B. Contractor is responsible for protecting By Owner items from damage during storage and handling, including damage from exposure to the elements.
- C. If By Owner items are damaged as a result of Contractor's operations, Contractor shall repair or replace them.

**PART 3 - EXECUTION**

1.1.1. GENERAL CONTRACTOR RESPONSIBILITY

- A. Contractor shall be responsible for verifying integrity of work performed by Owner's contractors with respect to moisture penetration and water leakage of any kind. Ensure building does not leak.

END OF SECTION 01018

**PART 1 - GENERAL**

**1.01 DESCRIPTION:**

This section covers requirements for schedules and payments.

**1.02 PROGRESS SCHEDULE:**

- A. Submit a comprehensive bar-chart type progress schedule.

**1.03 SCHEDULE OF VALUES:**

- A. Prepare a schedule of values in such a manner that each major item of work and each subcontracted item of work is shown on a single line.
- B. Show dollar value and per cent of total for each unit of work scheduled. Submit not later than 7 days prior to first payment request, and revise each time schedule is affected by change order or other value revision.

**1.04 PAYMENT REQUESTS**

- A. The form of application shall be approved by the architect.
- B. Submit request for each calendar month, for the portion of the Contract sum properly allocated to labor, materials and equipment incorporated into the work, and the portion of the Contract Sum properly allocated to materials and equipment suitably stored, up to the twenty-fifth of the month, less previous payments and retainage.
- C. Prior to first pay request, submit:
1. Schedule of values
  2. Progress schedule
- D. Application at Time of Substantial Completion: Following issuance of Architect's final "certificate of substantial completion," the contractor shall submit or do the following:
1. Occupancy permits and similar approvals or certifications by governing authorities and franchised services, assuring Owner's full access and use of completed work.
  2. Warranties, (guarantees), maintenance agreements and similar provisions of contract documents.
  3. Test/adjust/balance records, maintenance instructions, meter readings, start-up performance reports, and similar change-over information germane to Owner's occupancy, use, operation and maintenance of completed work.
  4. Final cleaning of the work.
  5. Application for reduction of retainage, and consent of surety.
  6. Advice to Owner on coordination of shifting insurance coverage, including proof of extended coverage as required.
  7. Listing of Contractor's incomplete work, recognized as exceptions to Architect's certificate of substantial completion.

- E. Final Payment Application:
1. Removal of temporary facilities, services, surplus materials, rubbish and similar elements.
  2. Consent of surety for final payment.
  3. Receipt of Statutory Affidavit, Contractor's Warranty, and Roofing Guarantee.
- F. Application Transmittal: Submit 3 executed copies of each payment application, with a transmittal form.

**PART 2 - NOT USED**

**PART 3 - NOT USED**

**END OF SECTION 01155**

**PART 1 - GENERAL**

**1.01 SUMMARY:**

- A. Section Includes: Product related submittals.
  - 1. Shop drawings, product data and samples.
  - 2. Shop drawing, product data and sample submittal schedule.
  
- B. Related Documents and Sections:
  - 1. Document 00700-General Conditions:
    - a. Definitions of shop drawings, product data and samples.
    - b. Contractor review.
  
  - 2. Section 01630-Product Options and Substitutions:
  
  - 3. Section 01705-Project Closeout: Administrative submittals after substantial completion.
    - a. Project record documents.
    - b. Operation and maintenance data.
    - c. Warranties and bonds.
    - d. Spare parts and maintenance materials.
    - e. Other closeout documents.

**1.02 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES:**

- A. Shop Drawings:
  - 1. Prepare special use drawings, as follows:
    - a. Title
    - b. Dimensions
    - c. Materials
    - d. Fasteners
    - e. Utilities
  - 2. Contract documents prepared by architect or consultants are not acceptable as shop drawing submittals.
  - 3. Submit bond copies or blue line prints. Submit number required by contractor, plus two to be retained by architect. Submit number required by contractor, plus three to be retained by architect when review by a professional engineer is required (Plumbing, Mechanical, Electrical, Structural, etc....).
  
- B. Product Data:
  - 1. Prepare manufacturers standard specifications and descriptive literature, as follows:
    - a. Mark to show specific information and any options, if any, required for this project.
    - b. Include printed color charts, for color selection by architect, when actual samples are not required.
  - 2. Submit number required by contractor, plus 2 to be retained by architect.
  
- C. Samples:
  - 1. Prepare and submit actual samples of required products for architect review of color, texture or finish. Show full color range for products with a range of color.
  - 2. Submit number required by contractor, plus one to be retained by architect.

- D. Architect Review: Architect will review and mark each submittal with appropriate action, as follows:
1. "Approved" indicates submittal information is acceptable and work may proceed.
  2. "Approved as Noted" indicates submittal information is acceptable as noted and work may proceed, subject to compliance with notations.
  3. "Returned for Correction" or "NOT Approved" indicates submittal information is not acceptable and work may not proceed. Revise submittal or prepare new submittal, to comply with notations, and resubmit for subsequent review by architect.

**PART 2 - NOT USED**

**PART 3 - NOT USED**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
  - 1. General project coordination procedures.
  - 2. Conservation.
  - 3. Coordination Drawings.
  - 4. Administrative and supervisory personnel.
  - 5. Project meetings.
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility will be assigned to a specific contractor.
- C. Related Sections: The following Sections contain requirements that relate to this Section:
  - 1. Division 1 Section "Construction Progress Documentation" for preparing and submitting the Contractor's Construction Schedule.
  - 2. Division 1 Section "Execution Requirements" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
  - 3. Division 1 Section "Closeout Procedures" for coordinating Contract closeout.

1.3 COORDINATION

- A. Coordination: Coordinate construction operations included in various Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.
- B. Contractor shall coordinate timing and work directly related to work and services being provided by Owner's Contractors and vendors so that project progresses in an orderly and timely fashion – woven PVC shading, landscape, audio/visual equipment, picnic tables, umbrellas, etc...

1.4 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. General: In addition to a full time Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.
  - 1. Include special personnel required for coordination of operations with other contractors.
  - 2. Owner reserves the reasonable right to approve Contractor's personnel before and or during the project.
  - 3. Project superintendent is to be on site the duration of each workday through the later of final punch list completion.
  - 4. Contractor may not change or reassign the Project Superintendent without prior discussion and approval of the Owner.

1.5 PROJECT MEETINGS

**SECTION 01310 – PAGE 2**  
**PROJECT MANAGEMENT AND COORDINATION**

- A. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner prior to the start of construction. Coordinate date with Owner. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
  - 1. Attendees: Authorized representatives of Owner; Contractor and its superintendent; major subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  
- B. Post Construction Meeting: Schedule meeting just prior to substantial completion to review equipment and systems operation, repair, and trouble-shooting with Operations Management. The intent of the meeting being to alleviate unnecessary warranty calls.
  - 1. Attendees: Owner's Operation Management, Contractor and appropriate Sub-Contractors.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01310

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.
- B. Related Sections include the following:
  - 1. Division 1 Section "Project Management and Coordination" for submitting Coordination Drawings.
  - 2. Division 1 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's Construction Schedule.
  - 3. Division 1 Section "Quality Requirements" for submitting test and inspection reports and Delegated-Design Submittals.
  - 4. Division 1 Section "Closeout Procedures" for submitting warranties Project Record Documents and operation and maintenance manuals.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information that requires Architect's responsive action.
- B. Informational Submittals: Written information that does not require Architect's approval. Submittals may be rejected for not complying with requirements.

1.4 SUBMITTAL PROCEDURES

- A. General: All submittals are to be made to the Owner's Construction Manager.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
  - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that requires sequential activity.
  - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    - a. Owner's Construction Manager reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Owner's Construction Manager's receipt of submittal.
  - 1. Initial Review: Allow 10 days for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Owner's Construction Manager will advise Contractor when a submittal being processed must be delayed for coordination.
  - 2. Concurrent Review: Where concurrent review of submittals by Architect's consultants, Owner, or other parties is required, allow 15 days for initial review of each submittal.

- a. Structural Steel
  - b. Roof Framing
  - c. Foundation
  - d. Plumbing
  - e. Mechanical
  - f. Electrical
3. Allow 10 days for processing each resubmittal.
  4. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.
- D. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
  2. Include the following information on label for processing and recording action taken:
    - a. Project name.
    - b. Date.
    - c. Name and address of Contractor.
    - d. Name of manufacturer.
    - e. Other necessary identification.
- E. Deviations: Highlight, encircle, or otherwise identify deviations from the Contract Documents on submittals.
- F. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- G. Use for Construction: Use only final submittals with mark indicating action taken by Architect and Owner's Construction Manager in connection with construction.

## PART 2 - PRODUCTS

### 2.1 ACTION SUBMITTALS

- A. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
1. Preparation: Include the following information, as applicable:
    - a. Dimensions.
    - b. Identification of products.
    - c. Fabrication and installation drawings.
    - d. Roughing-in and setting diagrams.
    - e. Shop work manufacturing instructions.
    - f. Schedules.
    - g. Design calculations.
    - h. Notation of dimensions established by field measurement.
  2. Number of Copies: Submit four blue- or black-line prints of each submittal. Architect and Owner's Construction Manager will retain two prints; remainder will be returned. Mark up and retain one returned print as a Project Record Drawing.

### 2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE

**SECTION 01330 – PAGE 3**  
**SUBMITTAL PROCEDURES**

- A. Construction Schedules: Along with the Invitation to Bid, the Owner will submit to Contractor his Anticipated Construction Time.
- B. Type: Network analysis system using the critical path method, generally as outlined in Associated General Contractors of America (AGC) publication “The use of CPM in Construction – A Manual for General Contractors” is preferred, but a horizontal bar chart with separate bar for each major trade or operation, identifying first work day of each week is acceptable.
- C. Sequence of Construction: Show complete sequence of construction by activity, identifying work of separate stages and other logically grouped activities.
- D. Percentage of Completion: Show projected percentage of completion for each item of work as of time of each Application for Payment.
- E. Submittal Dates: Show submittal dates required for shop drawings, product data, and samples, and product delivery dates, including those furnished by Owner.
- F. Progress Reports: The Contractor shall, on Friday of each week, complete and make distribution of a synopsis of job progress by trade category with distribution as directed by Owner. The form shall be completed by the Contractor’s job superintendent, complete with a “remarks” space for written communication of minor job problems and requests that can be made under field conditions.
- G. Copies Required:
  - 1. Initial Issue: Submit three; within 10 days after date of notice to proceed. After review by Owner, revise and resubmit as required.
  - 2. Revised: Submit three; with each Application for Payment, reflecting changes since previous submittal.
- H. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
  - 1. Name, address, and telephone number of entity performing subcontract or supplying products.

2.3 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
  - 1. Number of Copies: Submit two copies of each submittal, unless otherwise indicated. Owner’s Construction Manager will return copies.
  - 2. Test and Inspection Reports: Comply with requirements in Division 1 Section "Quality Requirements."
- B. Contractor's Construction Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation."
- C. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Owner’s Construction Manager.

3.2 ARCHITECT'S AND OWNER'S CONSTRUCTION MANAGER'S ACTION

- A. Action Submittals: Architect and Owner's Construction Manager will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
  - 1. No Exceptions:
  - 2. Exceptions as Noted:
  - 3. Revise and Resubmit:
- B. Informational Submittals: Owner's Construction Manager will review each submittal and will not return it, or will reject and return it if it does not comply with requirements. Owner's Construction Manager will forward each submittal to appropriate party.
- C. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

END OF SECTION 01330

**PART 1 - GENERAL**

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes Contractor provided testing laboratory services.
- B. Related Sections include the following:
  - 1. Division 1 Section "Cutting and Patching" for repair and restoration of construction disturbed by testing and inspecting activities.
  - 2. Division 1 Section "Contract Closeout" for record documents.
  - 3. Divisions 2 through 16 Sections for specific test and inspection requirements.

1.3 REFERENCES

- A. ANSI/ASTM D3740 – Practice for evaluation of agencies engaged in testing and/or inspection of soil and rock used in Engineering design and construction.
- B. ANSI/ASTM E329 – Standard recommended practice for inspection and testing agencies for concrete, steel and bituminous materials as used in construction..

1.4 SECTION AND PAYMENT

- A. Contractor shall employ and pay for services of an Owner-acceptable independent testing laboratory to perform specified inspection and testing. Employment of testing laboratory in no way relieves Contractor of obligation to perform Work in accord with requirements of Contract Documents.

1.5 QUALITY ASSURANCE

- A. Laboratory: Employ laboratory authorized to operate in state in which project is located and which maintains a full-time registered Engineer on staff to review services.
- B. Equipment: Testing equipment shall be calibrated at reasonable intervals with devices of an accuracy traceable to either National Bureau of Standards or accepted values of natural physical constants.

1.6 CONTRACTOR SUBMITTALS

- A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

1.7 LABORATORY RESPONSIBILITIES

- A. Test samples of mixes submitted by Contractor.

- B. Provide qualified personnel at site after due notice; cooperate with Owner and Contractor in performance of services.
- C. Perform specified inspection, sampling, and testing of products.
- D. Ascertain compliance of materials and mixes with requirements of Contract Documents.
- E. Promptly notify Owner and Contractor of observed irregularities or non-conformance of Work or products.
- F. Perform additional inspections and tests required by Owner, bolt tightening, welding, etc....
- G. Attend pre-construction conferences and progress meetings when requested.

1.8 LABORATORY REPORTS

- A. Reports: Prepare and submit certified written reports after each inspection and test. Promptly submit two copies of laboratory report to Owner and to Contractors. Include the following:
  - 1. Date of issue.
  - 2. Project title and number.
  - 3. Name, address, and telephone number of testing agency.
  - 4. Dates, time, and locations of samples and tests or inspections.
  - 5. Identification of product and Specification Section.
  - 6. Type of inspection or test.
  - 7. Test and inspection results and an interpretation of test results.
  - 8. Ambient conditions at time of sample taking and testing and inspecting.
  - 9. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  - 10. Name and signature of laboratory inspector.
  - 11. Recommendations on retesting and re-inspecting.
- B. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.9 LIMITS OF TESTING LABORATORY AUTHORITY

- A. Laboratory may not release, revoke, alter, or enlarge on requirements of Contract Documents, approve or accept any portion of the Work, assume any duties of Contractor and has no authority to stop work.

1.10 CONTRACTOR RESPONSIBILITIES

- A. Deliver to laboratory at designated location adequate samples of materials proposed to be used which require testing, together with proposed mix design.
- B. Cooperate with laboratory personnel, and provide access to Work.

- C. Provide incidental labor and facilities to provide access to work to be tested, to obtain and handle samples at the site or at source of products to be tested, to facilitate tests and inspections, and for storage and curing of test samples.
- D. Notify Owner and laboratory 24 hours prior to expected time for operations requiring inspection and testing services.

**PART 2 - PRODUCTS (Not Used)**

2.1

**PART 3 - EXECUTION**

3.1 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
  - 1. Provide materials and comply with installation requirements specified in other Sections of these Specifications. Restore patched areas and extend restoration into adjoining areas in a manner that eliminates evidence of patching.
  - 2. Comply with the Contract Document requirements for Division 1 Section "Cutting and Patching."
- B. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01400

**PART 1 - GENERAL**

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection facilities.
- B. Temporary utilities include, but are not limited to, the following:
  - 1. Sewers and drainage.
  - 2. Water service and distribution.
  - 3. Sanitary facilities, including toilets, wash facilities, and drinking-water facilities.
  - 4. Heating and cooling facilities.
  - 5. Ventilation.
  - 6. Electric power service.
  - 7. Lighting.
  - 8. Telephone service.
- C. Support facilities include, but are not limited to, the following:
  - 1. Project identification and temporary signs.
  - 2. Waste disposal facilities.
  - 3. Field offices.
  - 4. Storage and fabrication sheds.
  - 5. Construction aids and miscellaneous services and facilities.
- D. Security and protection facilities include, but are not limited to, the following:
  - 1. Environmental protection.
  - 2. Stormwater control.
  - 3. Tree and plant protection.
  - 4. Pest Control
  - 5. Security enclosure and lockup.
  - 6. Barricades, warning signs, and lights.
  - 7. Temporary enclosures.
  - 8. Temporary partitions.
- E. Related Sections include the following:
  - 1. Division 1 Section "Submittal Procedures" for procedures for submitting copies of implementation and termination schedule and utility reports.
  - 2. Division 1 Section "Execution Requirements" for progress cleaning requirements.
  - 3. Divisions 2 through 16 for temporary heat, ventilation, and humidity requirements for products in those Sections.

1.3 DEFINITIONS

**SECTION 01500 – PAGE 2**  
**TEMPORARY FACILITIES, UTILITIES AND CONTROLS**

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

1.4 USE CHARGES

- A. General: Cost or use charges for temporary facilities are not chargeable to Owner or Architect and shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, the following:
  - 1. Owner's construction forces.
  - 2. Occupants of Project.
  - 3. Testing agencies.
  - 4. Personnel of authorities having jurisdiction.
- B. Sewer Service: Pay sewer service use charges for sewer usage, by all parties engaged in construction, at Project site.
- C. Water Service: Pay water service use charges, whether metered or otherwise, for water used by all entities engaged in construction activities at Project site.
- D. Electric Power Service: Pay electric power service use charges, whether metered or otherwise, for electricity used by all entities engaged in construction activities at Project site.

1.5 QUALITY ASSURANCE

- A. Standards: Comply with ANSI A10.6, NECA's "Temporary Electrical Facilities," and NFPA 241.
  - 1. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with trade regulations and union jurisdictions.
  - 2. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility as required before use. Obtain required certifications and permits.

1.6 PROJECT CONDITIONS

- A. Temporary Utilities: At earliest feasible time, when acceptable to Owner, change over from use of temporary service to use of permanent service.
  - 1. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.
- B. Conditions of Use: The following conditions apply to use of temporary services and facilities by all parties engaged in the Work:
  - 1. Keep temporary services and facilities clean and neat.
  - 2. Relocate temporary services and facilities as required by progress of the Work.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Provide new materials suitable for use intended.

2.2 EQUIPMENT

- A. General: Provide equipment suitable for use intended.
- B. Field Offices: Mobile units with lockable entrances, operable windows, and serviceable finishes; heated and air-conditioned.
- C. Fire Extinguishers: Hand carried, portable, UL rated. Provide class and extinguishing agent as indicated or a combination of extinguishers of NFPA-recommended classes for exposures.
1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.
- D. Self-Contained Toilet Units: Single-occupant units of chemical, aerated recirculation, or combustion type; vented; fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.
- E. Heating Equipment: Unless Owner authorizes use of permanent heating system; provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
  2. Heating Units: Listed and labeled, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use for type of fuel being consumed.
- F. Electrical Outlets: Properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button, and pilot light.
- G. Power Distribution System Circuits: Where permitted and overhead and exposed for surveillance, wiring circuits, not exceeding 125-V ac, 20-A rating, and lighting circuits may be nonmetallic sheathed cable.
- H. **Provide project identification sign** with 4'-0" x 8'-0" x 3/4" thick APA A-A Exterior plywood panel, painted on both sides in two colors, 2 x 4 painted wood top and bottom panel braces and 4 x 4 painted wood posts, complying with the layout shown below. Locate on-site as directed by Architect.



**SECTION 01500 – PAGE 4**  
**TEMPORARY FACILITIES, UTILITIES AND CONTROLS**

**PART 3 - EXECUTION**

**3.1 INSTALLATION, GENERAL**

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

**3.2 TEMPORARY UTILITY INSTALLATION**

- A. General: Engage appropriate local utility company to install temporary service or connect to existing service. Where utility company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with utility company recommendations.
  - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
  - 2. Provide adequate capacity at each stage of construction. Before temporary utility is available, provide trucked-in services.
  - 3. Obtain easements to bring temporary utilities to Project site where Owner's easements cannot be used for that purpose.
- B. Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload-protected disconnecting means, automatic ground-fault interrupters, and main distribution switchgear.
  - 1. Install electric power service underground, unless overhead service must be used.
  - 2. Install power distribution wiring overhead and rise vertically where least exposed to damage.
  - 3. Connect temporary service to Owner's existing power source, as directed by electric company officials.
- C. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations and traffic conditions.
- D. Telephone Service: Provide temporary telephone service throughout construction period for common-use facilities used by all personnel engaged in construction activities.
  - 1. Provide additional telephone lines for the following:
    - a. Provide a dedicated telephone line for each facsimile machine and computer with modem in each field office.
  - 2. Provide an answering machine on superintendent's telephone.
  - 3. Provide a portable cellular telephone for superintendent's use in making and receiving telephone calls when away from field office.

**3.3 SUPPORT FACILITIES INSTALLATION**

- A. General: Comply with the following:

**SECTION 01500 – PAGE 5**

**TEMPORARY FACILITIES, UTILITIES AND CONTROLS**

1. Locate field offices, storage sheds, sanitary facilities, and other temporary construction and support facilities for easy access.
- B. Project Identification and Temporary Signs: Prepare Project identification and other signs in sizes indicated. Install signs where indicated to inform public and persons seeking entrance to Project. Do not permit installation of unauthorized signs.
  1. Contractor to provide 4 by 8 ft sheet of 3/4 inch marine grade plywood on (2) 4 by 4 inch posts for Owner's Project Sign.
- C. Contractor Signs and Advertising: Contractor and principle subcontractors may have company signs on the Field Office, at the Contractor's expense if desired,. No freestanding signs or advertising other than the Project ID sign or waning signs will be permitted.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Stormwater Control: Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of stormwater from heavy rains.
- B. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from construction damage. Protect tree root systems from damage, flooding, and erosion.
- C. Pest Control: Before deep foundation work has been completed, retain a local exterminator or pest-control company to recommend practices to minimize attraction and harboring of termites, rodents, roaches, and other pests. Engage this pest-control service to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Obtain extended warranty for Owner. Perform control operations lawfully, using environmentally safe materials.
- D. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
- E. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and public of possible hazard. Where appropriate and needed, provide lighting, including flashing red or amber lights.
- F. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
- G. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
  1. Provide fire extinguishers, installed on walls on mounting brackets, visible and accessible from space being served, with sign mounted above.
  2. Store combustible materials in containers in fire-safe locations.
  3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for firefighting. Prohibit smoking in hazardous fire-exposure areas.
  4. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition.

**SECTION 01500 – PAGE 6**  
**TEMPORARY FACILITIES, UTILITIES AND CONTROLS**

3.5 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage caused by freezing temperatures and similar elements.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

END OF SECTION 01500

**PART 1 - GENERAL**

**1.01 DESCRIPTION**

This section covers products and prior approvals.

**1.02 PRODUCTS:**

Products are specified by ASTM or other reference standard, and/or by manufacturer's name and model number or trade name. When specified only by reference standard, Contractor may select any product meeting this standard, by any manufacturer. When several products or manufacturers are specified as being equally acceptable, Contractor has the option of choosing among those named.

**1.03 SUBSTITUTIONS/PRIOR APPROVALS:**

- A. If it is desired to use products different from those indicated in the Contract Documents, the party requesting the substitution shall make written application as described herein. The burden of proving equality of proposed substitutions rests on the party making the request for substitution.
1. Requests for substitution shall reach the Architect **not less than 7 days prior** to the date set for opening of bids.
  2. Requests received by Architect after this date will not be considered.
  3. Requests for substitution shall be accompanied by such technical data as the party making the request desired to submit. Architect will consider reports from independent testing laboratories, verified experience records from previous users, and other printed or written information valid in the circumstances.
  4. Requests for substitution shall indicate in what respects proposed materials or products differ from those specified.
  5. Requests for substitution shall be accompanied by the manufacturer's printed recommendations describing the installation, use and care, as applicable, of the proposed substitution.
  6. Determination as to acceptability of proposed substitution will be made based only upon data submitted.
- B. If a proposed substitution is approved by Architect, an addendum will be issued to prospective bidders not less than three days prior to the date set for opening of bids. Unless substitutions are received and approved as described above, the successful bidder shall be responsible for furnishing materials and products in accordance with the Contract Documents.

**PART 2 - PRODUCTS**

**2.01 REQUESTS FOR PRIOR APPROVAL:**

1. Date of Request: \_\_\_\_\_, 2007      Job Bid Date: \_\_\_\_\_, 2007
2. Name of Party Proposing Substitute:

3. Job Name:
4. Specification Section and Paragraph:
5. Specified Item:
6. Proposed Substitute:
7. Manufacturer:
8. Deviations from the Specified Item:
9. Manufacturer's Recommendations for Use and Installation: *(List Recommendation)*
10. Change in Other Work to Permit Use of Proposed Substitute: List of changes. *(Submit drawings if required for clarity.)*
11. Technical Data to Support Request for Approval: *(List ASTM designations met, submit testing laboratory reports and experience records, etc.)*
12. Other supporting data: *(Submit brochures, samples, drawings, etc.)*

### **PART 3 - EXECUTION**

#### **3.01 GENERAL:**

In connection with the use of any substitute item approved by the Architect it shall be the General Contractor's responsibility to see that such items meet all space requirements, and that any alterations to connecting items necessitated by use of the alternate items are properly made at no increase in cost to the Owner, and that all items are in compliance with the specification requirements.

**END OF SECTION**

**PART 1 - GENERAL**

**1.01 DESCRIPTION:**

This section covers general requirements in preparation for final acceptance, final payment, normal termination of contract and occupancy by Owner.

**1.02 PREREQUISITES TO SUBSTANTIAL COMPLETION:**

- A. General: Prior to requesting Architect's inspection for certification of substantial completion (for either entire work or portions thereof), complete the following:
1. In progress payment request, show either 100% completion for portion of work claimed as "substantially complete", or list incomplete items, value of incompleteness, and reasons for being incomplete.
  2. Advise Owner of pending insurance change-over requirements.
  3. Submit specific warranties, workmanship/maintenance bonds, maintenance agreements, final certifications and similar documents.
  4. Complete start-up testing of systems, and instructions of Owner's operating/maintenance personnel.
  5. Complete final cleaning up requirements, including touch-up painting of marred surfaces.

**1.03 SUBSTANTIAL COMPLETION:**

The date of substantial completion of the work or designated portion is the date certified by the Architect when construction is sufficiently complete, in accordance with the Contract Documents, so the Owner can occupy.

**1.04 PREREQUISITES TO FINAL ACCEPTANCE:**

- A. General: Prior to requesting Architect's final inspection, complete the following:
1. Submit final payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
  2. Submit updated final statement, accounting for additional (final) changes to Contract Sum.
  3. Submit certified copy of Architect's final punch-list of itemized work to be completed or corrected, stating that each item has been completed.
  4. Submit consent of surety.
  5. Revise and submit evidence of final, continuing insurance coverage complying with insurance requirements.

**1.05 RECORD DOCUMENT SUBMITTALS:**

- A. Record Drawings: Maintain a white-print set (blue-line or black- line) of contract drawings and shop drawings in clean, undamaged condition, with mark-up of actual installations which vary substantially from the work as originally shown.

- B. Maintenance Manuals: Organize maintenance-and-operating manual information into suitable sets of manageable size, and bind into individual binders properly identified and indexed.

**PART 2 - NOT USED**

**PART 3 - EXECUTION**

**3.01 CLOSEOUT PROCEDURES:**

General Operating/Maintenance Instructions: Arrange for each installer of work requiring continuing maintenance or operation, to meet with Owner's personnel, at project site, to provide basic instructions needed for proper operation and maintenance of entire work.

**3.02 FINAL CLEANING:**

General: Provide final cleaning of the work, at time indicated, consisting of cleaning each surface or unit of work to normal "clean" condition expected for a first-class building cleaning and maintenance program. Comply with manufacturer's instructions for cleaning operations.

**END OF SECTION 01705**

**PART 1 - GENERAL**

1.1.1. RELATED DOCUMENTS

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

1.1.2. SUMMARY

- A. This Section includes procedural requirements for cutting and patching.
- B. Related Sections include the following:
  - 1. Divisions 2 through 16 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.1.3. DEFINITIONS

- A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.1.4. QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
- C. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Owner's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

1.1.5. WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

**PART 2 - PRODUCTS**

1.1.1. MATERIALS

- A. General: Comply with requirements specified in other Sections of these Specifications.
- B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
  - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

**PART 3 - EXECUTION**

1.1.1. EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
  - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
  - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

1.1.2. PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to minimize interruption of services to occupied areas.

1.1.3. PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
- B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable

seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
  - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
4. Ceilings: Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

**END OF SECTION 01731**

**PART 1 - GENERAL**

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - 1. Inspection procedures.
  - 2. Project Record Documents.
  - 3. Operation and maintenance manuals.
  - 4. Warranties.
  - 5. Instruction of Owner's personnel.
  - 6. Final cleaning.
- B. Related Sections include the following:
  - 1. Division 1 Section "Execution Requirements" for progress cleaning of Project site.
  - 2. Divisions 2 through 16 Sections for specific closeout and special cleaning requirements for products of those Sections.

1.3 PROJECT COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
  - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
  - 2. Advise Owner of pending insurance changeover requirements.
  - 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
  - 4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, all lien, and similar releases.
  - 5. Prepare and submit Project Record Documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
  - 6. Obtain Final Certificate of Occupancy.
  - 7. Complete startup testing of systems.
  - 8. Submit certified Test and Balance report for HVAC system.
  - 9. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
  - 10. Advise Owner of changeover in heat and other utilities.
  - 11. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
  - 12. Complete final cleaning requirements, including touchup painting.
  - 13. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

1.4 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
  - 1. Organize list of spaces in sequential order, starting with exterior areas first.
  - 2. Owner reserves the right to add items to the punch list and determine acceptability of item resolution.

1.5 PROJECT RECORD DOCUMENTS

- A. General: Do not use Project Record Documents for construction purposes. Protect Project Record Documents from deterioration and loss. Provide access to Project Record Documents for Owner's reference during normal working hours.
- B. Record Drawings: Maintain and submit one set of blue- or black-line white prints of Contract Drawings and Shop Drawings.
  - 1. Mark Record Prints to show the actual installation where installation varies from that shown originally.
    - a. Accurately record information in an understandable drawing technique.
    - b. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
  - 2. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
  - 3. Mark important additional information that was either shown schematically or omitted from original Drawings.
  - 4. Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location. Organize into manageable sets; bind each set with durable paper cover sheets. Include identification on cover sheets.

1.6 OPERATION, MAINTENANCE AND WARRANTY MANUALS

- A. Assemble two complete sets of operation and maintenance data indicating the operation and maintenance of each system, subsystem, and piece of equipment not part of a system. Include operation and maintenance data required in individual Specification Sections and as follows:
  - 1. Operation Data:
    - a. Emergency instructions and procedures.
    - b. System, subsystem, and equipment descriptions, including operating standards.
    - c. Operating procedures, including startup, shutdown, seasonal, and weekend operations.
    - d. Description of controls and sequence of operations.
    - e. Piping diagrams.
  - 2. Maintenance Data:
    - a. Manufacturer's information, including list of spare parts.
    - b. Name, address, and telephone number of Installer or supplier.
    - c. Maintenance procedures.
    - d. Maintenance and service schedules for preventive and routine maintenance.
    - e. Maintenance record forms.

- f. Sources of spare parts and maintenance materials.
  - g. Copies of maintenance service agreements.
  - h. Copies of warranties and bonds.
3. Warranty Data:
- a. Provide a 1-year warranty on labor and materials from General Contractor and each subcontractor.
  - b. General Contractor to coordinate an inspection of the finished roof system by the manufacturer to ensure compliance to warranty requirements for system installation and provide inspection documentation to the Owner. Any costs associated with this inspection shall be paid by the General Contractor.
- B. Organize operation and maintenance manuals into suitable sets of manageable size. Bind and index data in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, with pocket inside the covers to receive folded oversized sheets. Identify each binder on front and spine with the printed title "OPERATION AND MAINTENANCE MANUAL," Project name, and subject matter of contents.

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS**

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

## **PART 3 - EXECUTION**

### **3.1 DEMONSTRATION AND TRAINING**

- A. Instruction: Instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

### **3.2 FINAL CLEANING**

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
  - 1. Complete the following cleaning operations before requesting inspection for certification of Completion for entire Project:
    - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
    - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
    - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
    - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
    - e. Remove snow and ice to provide safe access to building.

- f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
  - g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
  - h. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
  - i. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
  - j. Remove labels that are not permanent.
  - k. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
    - 1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
  - l. Wipe surfaces of mechanical and electrical equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
  - m. Replace parts subject to unusual operating conditions.
  - n. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
  - o. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
  - p. Clean ducts, blowers, and coils if units were operated without filters during construction.
  - q. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
  - r. Leave Project clean and ready for occupancy.
  - s. Clean roof of all debris, screws, excess material, etc..
  - t. Power wash all sidewalks, ramps, and parking areas.
- C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 01770

PART 1 - GENERAL

The Contractor for this project shall coordinate, cooperate, work with, and schedule his work so as not to delay, hinder or interfere with other Contractors on the site.

The Contractor must carry on all his construction operation, including storage of materials, in such a way as to interfere as little as possible with roadway traffic, school traffic, pedestrian traffic, and other construction. Contractor recognizes that his work is related to work by others and agrees to coordinate his work with all other Contractors engaged in work on the site at no additional cost.

MAINTENANCE OF TRAFFIC: The Contractor shall maintain vehicular traffic around site at all times. The roads around the site must remain open during the construction period. There shall be no interference with the traffic except as may be proposed by the Contractor and approved in advance by the Owner. The Contractor shall not block any parking or service areas associated with the surrounding properties except as may be approved in advance by the owner's representative.

The terms "Contractor" and "This Contractor", and "Site Contractor" are defined as "Site Work Contractor".

The term "Prime Contractor or General Contractor" shall be defined as the Contractor whose legal contractual agreement is directly with the City of Carrollton.

Contractor shall maintain operations of all existing surrounding electrical, water, sanitary sewer and gas service for the duration of the Project.

Contractor shall be responsible for providing safe temporary closures on water line stubs to withstand water pressures if the line is pressurized.

Retaining walls, footing drains, etc. associated with construction of buildings are not a part of the Site Contractor's work.

Contractor shall be responsible for protecting his work, both completed and partially completed, from erosion, floods, fire, windstorms, hurricanes and other natural disasters or occurrences until final acceptance by Prime Contractor and /or Owner. The cost of protection and/or replacement of any work damaged or destroyed shall be borne by the Contractor.

END OF SECTION

**PART 1 - GENERAL**

**1.01 DESCRIPTION:**

This section covers selective demolition to accommodate modification work.

**1.02 WORK QUALIFICATIONS:**

- A. Workmen executing this work shall be experienced in demolition and in handling equipment of size and type to accomplish work indicated.
- B. Disconnection of utility services shall:
  - 1. Be only as scheduled with the Owner.
  - 2. Be in accord with utility company regulations.

**1.03 SUBMITTALS:**

- A. Sequence schedule
- B. Inspection reports

**1.04 JOB CONDITIONS:**

- A. Material Handling:
  - 1. Remove debris from site as it accumulates.
  - 2. Items salvaged for Owner shall be protected at all times and shall be carefully removed from existing work and safely stored until they are again incorporated into the work or turned over to the Owner as directed.
- B. Protection:
  - 1. Erect and maintain temporary bracing, dust barriers, barricades and cover to protect general public and property from harm or damage due to execution of this work.
  - 2. Employ demolition and debris handling technique to limit and control air pollution in vicinity of these operations to lowest level practical and in compliance with governing regulations.
  - 3. Clean adjacent work remaining of dust, dirt and debris caused by execution of this work, to restore them to conditions existing prior to start of this work.
- C. Scheduling: This work shall be scheduled to permit the use of adjacent facilities not involved in these operations.
- D. Inspection of Job:
  - 1. Before demolition operations begin, arrange for a joint visual inspection and report with the Owner's delegated representative, the Architect, the Contractor and other interested parties as directed.

**PART 2 - MATERIALS**

**2.01 DISPOSITION OF SALVAGE MATERIALS:**

- A. Except as otherwise indicated, materials resultant from demolition operations become property of Contractor.
- B. Items of salvageable value to Contractor shall be transported from site as they are removed; storage or sale of such items on Owner's property will not be permitted.

**PART 3 - EXECUTION**

**3.01 DEMOLITION:**

- A. Drawings note and indicate work that is to be removed. All other work not specifically so noted or indicated shall remain and shall be protected from adjacent demolition operations.
- B. Cutting: Cut all areas of the existing site that are to receive new construction. Make such cuttings to neat straight lines and only to the size required to accommodate the construction to be installed.
- C. Patching: Patch all areas of the existing site which are damaged by work under this contract and which are not to be rebuilt. Such patching shall be of the same materials and finish as that damaged and performed in a manner restoring the damaged areas to good condition suitable for refinishing and matching existing.

**3.02 UTILITIES:**

- A. Disconnection: Before starting demolition, disconnect or arrange for disconnection of utility service to area to be demolished in accordance with regulations of utility concerned and in compliance with "Notice to Owner" as herein specified.
- B. Protection
  - 1. Preserve in operating condition active utilities traversing demolition area until substitute facilities are provided, or until Owner approves interruption of services and durations.
  - 2. Protect all utility work and repair any damage caused by work under this contract to satisfaction of utility company concerned.

**END OF SECTION 02070**

PART 1 - GENERAL

1.01 DESCRIPTION:

This section covers general site clearing including:

- Removal of trees and other vegetation
- Topsoil stripping
- Clearing and grubbing
- Removal of site improvements

1.02 JOB CONDITIONS:

- A. Protect improvements on adjoining properties and on Owner's property as indicated to remain in place.
- B. Restore damaged improvements to their original condition, as acceptable to parties having jurisdiction.

PART 2 - PRODUCTS

(Not applicable)

PART 3 - EXECUTION

3.01 SITE CLEARING:

- A. General: Remove asphalt paving, concrete curb and gutter, trees, shrubs, grass and other vegetation, improvements, or obstructions interfering with installation of new construction. Remove such items elsewhere on site or premises as specifically indicated. Removal includes digging out stumps and roots.
- B. Clearing and Grubbing: Clear site of trees, shrubs and other vegetation, except for those indicated to be left standing.
  - 1. Completely remove stumps, roots, and other debris protruding through ground surface.
  - 2. Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated.
  - 3. Place fill material in not exceeding 6" loose depth, and thoroughly compact to a density equal to adjacent original ground.
- C. Topsoil: Topsoil is defined as friable clay loam surface soil found in a depth indicated in the soils report. Satisfactory topsoil is reasonably free of subsoil, clay lumps, stones, and other objects over 2" in diameter, and without weeds, roots, and other objectionable material.
  - 1. Strip Topsoil to whatever depths encountered in a manner to prevent intermingling with underlying subsoil or other objectionable material.
  - 2. Remove heavy growths of grass from areas before stripping.
  - 3. Where trees are indicated to be left standing, stop topsoil stripping a sufficient distance to prevent damage to main root system.

4. Stockpile topsoil in storage piles in areas where directed.
- D. Removal of Improvements: Remove site improvements necessary to permit construction.
- 3.02 DISPOSAL OF WASTE MATERIALS:
- A. Burning on Owner's Property: Burning will not be permitted.
  - B. Remove debris from Owner's property and dispose of off-site in legal manner.

END OF SECTION 02110

**PART 1 – GENERAL**

**1.01 SUMMARY:**

- A. Section Includes:
1. Backfill of excavations.
  2. Preparation of subgrade for building slab.
  3. Trench excavation and backfilling.

**1.02 SUBMITTALS:**

- A. Test Reports: Geotechnical inspection and test reports.

**1.03 QUALITY ASSURANCE:**

- A. Geotechnical Testing: **Contractor will select and provide** owner approved testing service to provide field quality control during earthwork execution.
- B. Existing Utilities: Locate existing underground utilities in areas of work.
- C. Protection of Persons and Property: Barricade open excavations occurring as part of this work and post with warning signs.
- D. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.

**PART 2 – PRODUCTS**

**2.01 SOIL MATERIALS:**

Definitions:

1. Satisfactory soil material: Clean subsoil, free of debris, organic matter, topsoil, frozen matter and rock larger than 1/2 cubic foot.
2. Unsatisfactory soil material: Soil materials not capable of compaction to required density, rock larger than 1/2 cubic foot, debris and organic matter.
3. Backfill and Fill Materials: Satisfactory soil materials free of waste, frozen materials, vegetable and other deleterious matter.

**PART 3 – EXECUTION**

**3.01 EXCAVATION:**

- A. Excavation consists of removal and disposal of material encountered when establishing required finish grade elevations.
1. Excavate to lines and levels indicated. If soil conditions permit, cut footing trenches to exact size of concrete and omit forms. Notify Architect if earth of doubtful bearing is encountered.
  2. Excavation Classifications: The following classifications of excavation will be made when unanticipated rock excavation is encountered in the work:

- a. Do not perform such work until material to be excavated has been cross-sectioned and classified by Architect. Such excavation will be paid on basis of contract conditions relative to changes in work.
  - b. Earth excavation includes removal and disposal of material of any classification indicated in data on subsurface conditions, and other materials encountered that are not classified as rock excavation or unauthorized excavation.
  - c. Rock Excavation:
    1. General Excavation - Any material which cannot be excavated with single-tooth ripper drawn by a crawler tractor having a minimum draw bar pull rated at not less than 53,000 pounds (D 8 or equivalent).
    2. Trench Excavation: Any material which cannot be excavated with a backhoe having a bucket curling force rated at not less than 18,000 pounds (Caterpillar 215 series backhoe or equivalent), and occupying an original volume of at least one (1) cubic yard or more.
    3. Intermittent drilling performed to increase production and not necessary to permit excavation of material encountered will be classified as earth excavation.
    4. Rock payment lines are limited to the following:
      - a. Two feet outside of concrete work where forms are required, except footings.
      - b. One foot outside the perimeter and bottom of footings.
      - c. In pipe trenches, 6" below invert elevation of pipe and 2 ft. wider than the inside diameter of pipe, but not less than 3 ft. minimum trench width.
      - d. Neat outside dimensions of concrete work where no forms are required.
      - e. Under slabs on grade, 6" below the bottom of concrete slabs.
- B. Additional Excavation: When excavation has reached required subgrade elevations, notify Architect/Engineer who will make an inspection of conditions.
1. If unsuitable bearing materials are encountered at required subgrade elevations, carry excavations deeper and replace excavated material as directed by Architect/Engineer.
  2. Removal of unsuitable material and its replacement as directed will be paid on basis of contract conditions relative to changes in work.
- C. Stability of Excavations: Slope sides of excavations to comply with local codes and ordinances having jurisdiction. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated. Maintain sides and slopes of excavations in safe condition until completion of backfilling.
- D. Dewatering: Prevent surface water and subsurface or ground water from flowing into excavations and from flooding project site and surrounding area.
1. Do not allow water to accumulate in excavations. Remove water to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to stability of subgrades and foundations. Provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations.
  2. Establish and maintain temporary drainage ditches and other diversions outside excavation limits to convey rainwater and water removed from excavations to collecting or run-off areas. Do not use trench excavations as temporary drainage ditches.

- E. Material Storage: Stockpile satisfactory excavated materials where directed, until required for backfill or fill.
- F. Excavation for Structures: Conform to elevations and dimensions shown within a tolerance of plus or minus 0.10', Excavate by hand to final grade just before concrete reinforcement is placed.
- G. Excavation for Trenches: Dig trenches to the uniform width required for particular item to be installed, sufficiently wide to provide ample working room. Provide 6" to 9" clearance on both sides of pipe or conduit.
  - 1. Where rock is encountered, carry excavation 6" below require elevation and backfill with a 6" layer of crushed stone or gravel prior to installation of pipe.
  - 2. Except as otherwise indicated, excavate for exterior water-bearing piping (water, steam, condensate, drainage) so top of piping is not less than 3'-0" below finished grade.
  - 3. Backfill trenches with concrete where trench excavations pass within 18" of column or wall footings and which are carried below bottom of such footings, or which pass under wall footings. Place concrete to level of bottom of adjacent footing.

**3.02 COMPACTION:**

- A. General: Control soil compaction during construction providing minimum percentage of density specified for each area classification as indicated below.
- B. Percentage of Maximum Density Requirements: Compact subgrade and structural fill material to the following percentages of maximum density in accordance with Standard Proctor, ASTM D698:
  - 1. Building Slabs and Pavement: Scarify and recompact top 8 inches of subgrade and compact each layer of backfill or fill material at 95 percent.
  - 2. Lawn Areas: Scarify and recompact top 8 inches of subgrade and compact each layer of backfill or fill material at 90 percent.
- C. Moisture Control: Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade, or layer of soil material, to prevent free water appearing on surface during or subsequent to compaction operations.

**3.03 BACKFILL AND FILL:**

- A. General: Place acceptable soil material in layers to required subgrade elevations.
- B. Backfill excavations as promptly as work permits.
- C. Placement and Compaction: Place backfill and fill materials in layers not more than 8" in loose depth for material compacted by heavy compaction equipment and not more than 4" in loose depth for material compacted by hand-operated tampers.

**3.04 GRADING:**

- A. General: Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated, or between such points and existing grades.
- B. Grading Outside Building Lines: Grade areas adjacent to building lines to drain away from structures and to prevent ponding. Finish surfaces free from irregular surface changes.

- C. Compaction: After grading, compact subgrade surfaces to the depth and indicated percentage of maximum or relative density for each area classification.

**3.05 FIELD QUALITY CONTROL:**

- A. Geotechnical Testing: Allow testing service to inspect and approve subgrades and fill layers before covering.
- B. Subgrade Inspection: Proof roll to locate any unsatisfactory soil material.
- C. Foundation Inspection: Verify design bearing pressure of exposed soil material.
- D. Provide additional material, corrective work and testing, at no additional cost to owner, if in architect's opinion based on geotechnical reports, subgrade or structural fill is placed below specified density.

**3.06 DISPOSAL OF EXCESS AND WASTE MATERIALS:**

- A. Excess or unacceptable excavated material shall be disposed off site.

**END OF SECTION**

**PART 1 - GENERAL**

**1.01 DESCRIPTION:**

This section covers temporary erosion control required to prevent soil erosion and contain sediment on site, during construction period.

**PART 2 - PRODUCTS**

**2.01 SEDIMENT BARRIERS:**

- A. Silt Fence: Filter fabric and posts meeting Georgia D.O.T. Specification.

**PART 3 - EXECUTION**

**3.01 GENERAL:**

- A. Temporary erosion control is considered incidental to all land disturbing operations. The drawings show the limits of permanent grassing required under this contract. The Contractor is responsible for erosion control over the entire site.
- B. Design temporary erosion control measures to control soil erosion at its potential source with downstream sediment barriers used as a backup.

**3.02 TEMPORARY EROSION CONTROL:**

- A. Install sediment barriers prior to site clearing work, at bottom of slopes, around drainage structure inlets and along any adjacent paved areas.
- B. Maintain erosion control measures until permanent site construction work is complete and permanent grass is established over disturbed areas. Clean up washouts and repair sediment barriers promptly. Remove accumulated sediment when it reaches mid-height of barrier.
- C. Maintain construction access to roadways by preventing mud from washing or being tracked onto existing paving.

**3.03 CLEAN-UP AND REMOVAL:**

Remove temporary erosion control measures, including accumulated sediment and restore effected areas, after approval by Architect.

END OF SECTION

**PART 1 - GENERAL**

**1.01 SUMMARY:**

- A. Section Includes: Termiticide for subterranean termite control, applied as a pretreatment in new construction.

**1.02 SUBMITTALS:**

- A. Product Data: Manufacturers specifications and descriptive literature for Termiticide.
- B. Certification of Compliance Letter: Applicator shall provide a written certification on company letterhead that Termiticide has been placed in the specified concentration and at the specified rates.
- C. Warranty: Applicators REPAIR AND REPLACE GUARANTEE against subterranean termite infestation, up to lifetime of treated area.
1. Limited to repair and replace only.
  2. Annual renewal payments, to be paid by owner after the first year.
  3. Applicator shall submit a copy of a one million dollar liability insurance policy prior to application.

**1.03 QUALITY ASSURANCE:**

- A. Regulatory Requirements: Specified Termiticide is approved by Environmental Protection Agency.
- B. Applicator shall have at least 5 years experience in commercial soil pretreatment.

**PART 2 - PRODUCTS**

**2.01 TERMITICIDE:**

- A. Product: PREVAIL CONCENTRATE, applied in water solution mixture of 1 gallon Prevail to 100 gallons water (or approved equal).

**PART 3 - EXECUTION**

**3.01 APPLICATION:**

- A. Apply Termiticide solution directly to soil or crushed stone drainage fill.
- B. Reapply Termiticide solution, as follows:
1. Retreat areas disturbed by excavation work, after initial treatment.
  2. Retreat areas receiving precipitation, after initial treatment and before polyethylene vapor barrier is placed.
- C. Post warning signs around application area. Remove signs after floor slab is poured-in-place.

**3.02 PRETREATMENT SCHEDULE:**

- A. Building Perimeters, Floating Slab Foundation:
  - 1. Apply at rate of 1 gallon per 2 1/2 linear feet, for each foot of soil depth from grade to footing, along inside of exterior foundation walls.
  - 2. Apply at rate of 1 gallon per 5 linear feet, along foundation wall, inside concrete block cells.
  
- B. Floor Slab Penetrations: Apply at rate of 1 gallon per 2 1/2 linear feet, as follows:
  - 1. Along thru-slab expansion and control joints.
  - 2. Around interior column footings or piers.
  - 3. Around pipes and conduits.
  
- C. Floor Slabs: Apply at rate of 1 gallon per 10 square feet, as follows:
  - 1. Under concrete slabs-on-grade.
  - 2. Under turned-down slab edges.

END OF SECTION

**PART 1 - GENERAL**

**1.01 DESCRIPTION:**

- A. This section covers asphalt paving.

**1.02 SUBMITTALS:**

Material Certificates: Provide materials certificates signed by asphalt producer and Contractor, certifying that materials comply with specified requirements.

**1.03 JOB CONDITIONS:**

- A. Weather Limitations: Apply prime and tack coats when ambient temperature is above 50 deg F (10 deg C), and when temperature has not been below 35 deg F (1 deg C) for 12 hours immediately prior to application. Do not apply when base is wet or contains an excess of moisture.
- B. Construct asphalt concrete surface course when atmospheric temperature is above 40 deg F (4 deg C), and when base is dry.
- C. Grade Control: Establish and maintain required lines and elevations.
- D. Traffic Control:
1. Maintain vehicular and pedestrian traffic during paving operations, as required for other construction activities.
  2. Provide flagmen, barricades, warning signs and warning lights for movement of traffic and safety and to cause the least interruption of work.

**1.04 QUALITY CRITERIA:**

Industry Standard: Georgia Department of Transportation (D.O.T.) Standard Specifications for Construction of Roads and Bridges, current edition.

**PART 2 - PRODUCTS**

**2.01 PAVING MATERIALS:**

- A. Graded Aggregate: Meeting Georgia D.O.T. Specifications, Section 815.
- B. Intermediate Aggregate: Meeting Georgia D.O.T. specifications for Type "B" hot-mixed asphaltic concrete.
- C. Surface Aggregate: Meeting Georgia D.O.T. Specifications for Type "E" hot-mix asphaltic concrete.
- D. Base Course: Crusher-run.

**2.02 MARKING PAINT:**

Traffic Lane Marking Paint: Chlorinated rubber base, factory mixed, quick drying, non-bleeding, yellow color.

**PART 3 - EXECUTION**

**3.01 SURFACE PREPARATION:**

- A. Base Course: Place 1/2 thickness of base course material over areas to receive paving when sub-grade preparation is complete. Top dress with additional material as required during construction and just before paving work begins, to bring base course up to full, uniform design thickness.
- B. Remove loose material from compacted base surface immediately before applying prime coat.
- C. Proof roll prepared base surface to check for unstable areas and areas requiring additional compaction.
- D. Notify Contractor of unsatisfactory conditions. Do not begin paving work until deficient base areas have been corrected and are ready to receive paving.
- E. Prime Coat: Apply at rate of 0.20 to 0.50 gal. per sq. yd., over compacted subgrade. Apply material to penetrate and seal, but not flood, surface. Cure and dry as long as necessary to attain penetration and evaporation of volatile.
- E. Tack Coat: Apply to contact surfaces of previously constructed asphalt or portland cement concrete and surfaces abutting or projecting into asphalt pavement. Distribute at rate of 0.05 to 0.15 gal. per sq. yd. of surface.
- F. Allow drying until at proper condition to receive paving.

**3.02 PLACING MIX:**

- A. General: Place asphalt concrete mixture on prepared surface spread and strike-off. Spread mixture at minimum temperature of 225 deg F (107 deg C). Place inaccessible and small areas by hand. Place to required grade, cross-section, and compacted thickness.
- B. Paver Placing: Place in strips not less than 10' wide, unless otherwise acceptable to Architect. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Complete base course for a section before placing surface course.
- C. Joints: Make joints between successive days' work, to ensure continuous bond between adjoining work. Construct joints to have same texture, density and smoothness as other sections of asphalt concrete course. Clean contact surfaces and apply tack coat.

**3.03 ROLLING:**

- A. General: Begin rolling when mixture will bear roller weight without excessive displacement. Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.

- B. Breakdown Rolling: Accomplish breakdown or initial rolling immediately following rolling of joints and outside edge. Check surface after breakdown rolling, and repair displaced areas by loosening and filling, if required, with hot material.
- C. Second Rolling: Follow breakdown as soon as possible, while mixture is still hot. Continue rolling until mixture has been thoroughly compacted.
- D. Finish Rolling: Perform finish rolling while mixture is still warm enough for removal of roller marks. Continue rolling until roller marks are eliminated and course has attained maximum density.
- E. Compaction: Compact paving base course material to the following percentages of maximum density in accordance with Standard Proctor ASTM D698:
  - 1. DOT paving: 100 percent.
  - 2. On site paving: 98 percent.
- F. Patching: Remove and replace paving areas mixed with foreign materials and defective areas. Cut-out such areas and fill with fresh, hot asphalt concrete. Compact by rolling to maximum surface density and smoothness.

**3.04 CLEANING AND PROTECTION:**

- A. At completion of each operation, remove excess or spilled materials from site. Do not dump or spread excess asphalt materials on project site.
- B. After placement of surface course, do not permit vehicular traffic on pavement until it has cooled and hardened and in no case sooner than 12 hours.

**3.05 FIELD QUALITY CONTROL:**

- A. General: Test in-place asphalt courses for compliance with requirements for thickness and surface smoothness. Repair or remove and replace unacceptable paving as directed by Architect.
- B. Thickness: In-place compacted thickness will not be acceptable if exceeding following allowable variation from required thickness:
  - 1. Base Course: 1/4", plus or minus.
  - 2. Intermediate Course: 1/4" plus or minus
  - 3. Surface Course: 1/4", plus or minus.
- C. Surface Smoothness: Test finished surface of each asphalt concrete course for smoothness, using 10' straightedge applied parallel with, and at right angles to centerline of paved area. Surfaces will not be acceptable if exceeding the following tolerances for smoothness.
  - 1. Base Course Surface: 1/4".
  - 2. Intermediate Course: 1/4"
  - 3. Wearing Course Surface: 3/16".

END OF SECTION

**PART 1 - GENERAL**

**1.01 SUMMARY:**

- A. Section Includes: Under slab drainage.

**PART 2 - PRODUCTS**

**2.01 DRAINAGE FILL:**

- A. Material: Choose one of the following:
  - 1. "Crusher Run" crushed stone.
  - 2. No. 57 stone

**PART 3 - EXECUTION**

**3.01 INSTALLATION:**

- A. Placing: Place drainage fill course in single layer over sub-grade areas to receive concrete floor slab on grade.
- B. Screeding: Rake drainage fill to provide uniform level surface.

END OF SECTION

**PART 1 - GENERAL**

**1.01 DESCRIPTION OF WORK:**

- A. Extent of storm sewer system work is shown on drawings.
- B. Storm sewer system work includes, but is not limited to, the following:
  - 1. Catch basins
  - 2. Storm sewer pipe
- C. Comply with the requirements of applicable Division 2 sections for excavation and backfilling.
- D. Comply with requirements of applicable Division 3 sections for concrete.

**1.02 QUALITY ASSURANCE:**

Installer: A firm specializing and experienced in storm sewer system work for not less than 2 years.

**1.03 SUBMITTALS:**

Shop Drawings: Submit shop drawings for system, showing pipe types and sizes, locations, elevations and slopes for horizontal runs. Include details of structures and connections.

**PART 2 - PRODUCTS**

**2.01 STORM SEWER PIPE:**

- A. General: Furnish O-ring gaskets with couplings of same type and class of material as pipe or of material having equal or superior physical and chemical properties as acceptable to the Architect/Engineer.
- B. Corrugated Steel Pipe (CMP): Galvanized, corrugated steel pipe with minimum 0.05 inch thick bituminous coating and standard couplings.
  - 1. Up to 36-inch diameter: 16 gauge
  - 2. 36 inch diameter and larger: 14 gauge
- C. O-ring gaskets shall meet the requirements of ASTM-C-361. The gaskets shall have the following cross-sectional diameters for the given sizes of pipe:

<u>CORRUGATION SIZE</u> (INCHES)	<u>PIPE SIZE</u> (INCHES)	<u>CHORD DIAMETER</u> (INCHES)
2-2/3 X 1/2	12 thru 36	13/16
2-2/3 x 1/2	42 thru 120	7/8

- D. Reinforced Concrete Pipe (RCP): ASTM C76, Class 3 with rubber gasket joints and flared end sections.

**2.02 SAND-CEMENT BAG RIP-RAP:**

- A. Cement bags or burlap sacks with 1 to 2 cubic foot capacity filled with a mixture of 1 part portland cement to 5 parts sand.

**PART 3 - EXECUTION**

**3.01 PIPE INSTALLATION:**

- A. General: Install pipe in accordance with governing authorities having jurisdiction, except where more stringent requirements are indicated.
- B. Inspect pipe before installation to detect apparent defects.
- C. Lay pipe beginning at low point of a system, true to grades and alignment indicated with unbroken continuity of invert.
- D. Install joints in accordance with manufacturer's recommendations.

**3.02 BACKFILLING:**

General: Conduct backfill operations of open-cut trenches closely following laying, jointing and bedding of pipe, and after inspection.

**END OF SECTION 02720**

**PART 1 - GENERAL**

**1.01 JOB CONDITIONS:**

- A. Scheduling and sequencing: Schedule site improvement work of other trades required to be installed prior to execution of this work.

**1.02 QUALITY ASSURANCE:**

- A. Applicable standards; Comply with standards of the following, except where more stringent requirements are shown or specified:
  - 1. American Concrete Institute (ACI).
  - 2. American Society for Testing and Materials (ASTM).
  - 3. American Wood Preservers Association (AWPA).

**PART 2 - PRODUCTS**

**2.01 MATERIALS:**

- A. Concrete: As specified in Division 3, concrete, including formwork and reinforcement, except as follows:
  - 1. Compressive strength:
    - A. Curbs and Gutters: 3,500 psi
    - B. Walks, steps and other non-vehicular pavements: 3000 PSI.
  - 2. Course aggregate size: 1" maximum.
  - 3. Slump: 4" maximum.
  - 4. Air entrainment: 3% minimum.
- B. Expansion joint material: Non-extruding type, cane fiber bound and impregnated with bituminous material.
- C. Joint sealant:
  - 1. Acceptable products:
    - A. Sonneborn Building Products, Senolastic Paving Joint Sealant/NP-2.
    - B. Tremco, Inc. THC-900/THC-901.
  - 2. Characteristics: Two-component polyurethane sealant for horizontal traffic-bearing surface. Color as selected by Architect from manufacturer's standard selection.

**PART 3 - EXECUTION**

**3.01 PREPARATION:**

- A. Prepare subgrade as specified in Earthwork section, to uniform grade and density.
- B. Moisten subgrade just prior to concrete placement. Place no concrete on subgrade which is saturated or which contain standing water.

**3.02 CONCRETE CURB AND GUTTER:**

- A. Form curb and gutter to profiles indicated.
- B. Form in lengths not to exceed 12'-0" for straight sections, 4'-0" for curved sections.
- C. Curb and gutter may be placed using automatic curb and gutter machine. Saw control joints as soon as concrete has attained initial set.
- D. Form curb and gutter to straight lines and true radii. Formwork shall hold weight of wet concrete without deflection. Lay out radii with curved formwork. Clean all formwork prior to reuse.
- E. Provide uniform radius at curb face and light brushed finish in accord with ACI 301.

**3.03 CONCRETE WALKS, STEPS AND PAVEMENTS:**

- A. Slope walks, step treads and pavements minimum of 1/8" per foot to prevent ponding of water.
- B. Joints:
  - 1. Provide expansion joints to isolate pavement from permanent construction abutting or within paved areas, including joints between pavement and curbing, steps, walls and drainage structures. Align joints with drainage structures and changes in dimension or type of pavement. Align joints between adjacent pavement and curbs.
  - 2. Form control joints to depth of 1/4 thickness of pavement, spaced at regular intervals, to form rectangular pavement sections not to exceed dimensional ratio of 1-1/2 to one and maximum dimension of 12'-0". Joint locations shall be acceptable to Architect.
  - 3. Form expansion joints at intersection of pavement with building walls with filler strip placed 1/2" below top of concrete and seal joint using specified sealant.
- C. Tool edges and joints of walks and pavements after finishing to 1/4" radius.
- D. Non-slip broom finish: Immediately after trowel finishing, roughen concrete surface with broom in direction perpendicular to main traffic route. Coordinate required final finish with Architect before application. Apply non-slip broom finish to exterior concrete walks, pavements, platforms and ramps.
- E. Thickness: Min. 4" for walks

**END OF SECTION 02800**

**PART 1 - GENERAL**

**1.01 RELATED DOCUMENTS:** Drawings and general provisions of Contract apply to work of this section.

**1.02 DESCRIPTION OF WORK:** All concrete work as indicated on the drawings and specified herein.

**1.03 REFERENCE STANDARDS**

Comply with provisions of following codes, specifications and standards, except where more stringent requirements are shown or specified:

1. ACI 301 Specifications for Structural Concrete for Buildings.
2. ACI Standard 614 Recommended Practice for Measuring, Mixing, and Placing Concrete.

**1.04 SUBMITTALS:**

- A. Product Data: Submit manufacturer's product data with application and installation instructions for proprietary materials and items, including reinforcement and forming accessories, admixtures, patching compounds, water stops, joint systems, curing compounds, dry-shake finish materials and other items required by drawings or specifications.
- B. Samples: Submit samples of materials when requested by the Architect, including names, sources and descriptions.

**PART 2 - PRODUCTS**

**2.01 FORM MATERIALS:**

- A. Unless otherwise indicated construct formwork with plywood, metal, metal-framed plywood faced or other acceptable panel-type materials, to provide continuous, straight, smooth, exposed surfaces. Provide form material with sufficient thickness to withstand pressure of newly-placed concrete without bow or deflection.

**2.02 REINFORCING MATERIALS:**

- A. Reinforcing Bars (Rebar): ANSI/ASTM A 615, Grade 60, for Bars #4 and larger. Grade 40 is to be used for #3 bars.
- B. Steel Wire: ANSI/ASTM A 82, plain, cold-drawn, steel.
- C. Welded Wire Fabric (WWF): ANSI/ASTM A 185, welded steel wire fabric.
- D. Supports for Reinforcement: Provide supports for reinforcement including bolsters, chairs, spacers and other devices for spacing, supporting and fastening reinforcing bars and welded wire fabric in place. Use wire bar type supports complying with CRSI recommendations, unless otherwise acceptable to Architect.

**2.03 CONCRETE MATERIALS:**

- A. Portland Cement: ANSI/ASTM C 150, Type I, unless otherwise acceptable to Architect. Use one brand of cement throughout the project.

- B. Aggregates:
  - 1. Normal Weight Aggregates: ANSI/ASTM C 33, and as herein specified. Provide aggregates from a single source for exposed concrete. Maximum aggregate size is 1" unless specified otherwise on the drawings.
  - 2. Lightweight Aggregates: ANSI/ASTM C 330.
- C. Water: Potable.
- D. Calcium chloride: not permitted.
- E. Fly ash: Class C or Class F conforming to ASTM C618

**2.04 RELATED MATERIALS:**

- A. Moisture Barrier: Provide moisture barrier cover over prepared base material where indicated. Use polyethylene sheet not less than 6 mils thick, in accordance with ANSI/ASTM E 154.

**2.05 PROPORTIONING AND DESIGN OF MIXES:**

- A. Design mixes to provide normal weight concrete with the properties indicated on drawings and schedules. Unless noted otherwise on the drawings, concrete strength is to be as follows:  
3000 psi 28-day compressive strength for general use.
- B. Admixtures: All admixtures are to be used in strict compliance with the manufacturer's instructions.
  - 1. Fly ash may be used to partially replace cement content at the Contractor's option, provided that strength and air content requirements are met, and that the mix design is submitted and approved as required in Sect 1.04.
- C. Slump Limits: Proportion mixes to result in concrete slump at point of placement not less than 3" or more than 5".

NOTE: The delivery ticket shall show the amount of water that may be added at the job site, and water in excess of this amount shall not be added. If greater workability is desired, use a super plasticizing admixture.

**PART 3 - EXECUTION**

**3.01 MIXING:**

- A. Ready-Mix Concrete: Comply with requirements of ANSI/ASTM C94, and as herein specified.
- B. Water shall not be added to concrete at the job site except as approved and authorized on the delivery ticket by the mix designer.

**3.02 JOINTS:**

- A. Construction Joints: Locate and install construction joints, which are not shown on drawings, so as not to impair strength and appearance of the structure, as acceptable to Architect.
- B. Provide keyways as shown on drawings.
- C. Place construction joints as shown on drawings or as approved by Architect.
- D. Isolation Joints in Slabs-on-Ground: Construct isolation joints in slabs-on-ground at points of contact between slabs on ground and vertical surfaces, such as columns or walls, and elsewhere as indicated.

**3.03 CONCRETE PLACEMENT:**

- A. Pre placement Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel and items to be embedded or cast-in. Notify other crafts to permit installation of their work; cooperate with other trades in setting such work. Moisten wood forms immediately before placing concrete where form coatings are not used.

NOTE: Notify architect for inspection of formwork and reinforcing minimum 24 hours before concrete placement.

- B. Placing Concrete Slabs:
1. Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed.
  2. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.
- C. Maintain reinforcing in proper position during concrete placement operations.
- D. Hot Weather Placing:
1. When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 305 and as herein specified.

**3.04 MONOLITHIC SLAB FINISHES:**

- A. Float Finish (Flt-Fn): Apply float finish to monolithic slab surfaces to receive trowel finish and other finishes as herein after specified, and slab surfaces which are to be covered with membrane or elastic waterproofing, and as otherwise indicated.

After screeding, consolidating, and leveling concrete slabs, do not work surface until ready for floating. Begin floating when surface water has disappeared or when concrete has stiffened sufficiently to permit operation of power-driven floats, or both. Consolidate surface with power-driven floats or by hand-floating if area is small or inaccessible to power units. Check and level surface plane to a tolerance not exceeding 1/4" in 10' when tested with a 10' straightedge. Cut down high spots and fill low spots. Uniformly slope surfaces to drains. Immediately after leveling, re-float surface to a uniform, smooth, granular texture.

- B. Trowel Finish (Tr-Fn): Apply trowel finish to monolithic slab surfaces to be exposed-to-view, and slab surfaces to be covered with resilient flooring, paint or other thin film finish coating system.
- C. After floating, begin first trowel finish operation using power-driven trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand-troweling operation, free of trowel marks, uniform in texture and appearance, and with a surface plane tolerance not exceeding 1/8" in 10' when tested with a 10' straightedge. Grind smooth surface defects that would telegraph through applied floor covering system.
- D. Non-Slip Broom Finish (NSBrm-Fn): Apply non-slip broom finish to exterior concrete platforms, steps and ramps, and elsewhere as indicated.

Immediately after trowel finishing, slightly roughen concrete surface fiber bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

**3.05 CONCRETE CURING AND PROTECTION:**

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- B. Curing Methods: Perform curing of concrete by one of the following methods: By curing compound, by moist curing, by moisture-retaining cover curing, or by combinations thereof, as herein specified.
  - 1. Provide curing compound to slabs as follows: Apply specified curing and sealing compound to concrete slabs as soon as floors can be walked upon without damage. Apply uniformly in continuous operation by power-spray or roller in accordance with manufacturer's directions. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.
  - 2. Provide moisture curing by following methods:
    - a. Keep concrete surface continuously wet by covering with water.
    - b. Continuous water-fog spray.
    - c. Covering concrete surface with specified absorptive cover, thoroughly saturating cover with water and keeping continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with 4" lap over adjacent absorptive covers.
    - d. Maintain concrete above 50 F and in a moist condition for at least the first seven days after placement.
  - 3. Provide moisture-cover curing as follows:  
Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3" and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape. Maintain concrete above 50 F and in a moist condition for at least the first seven days after placement.
- C. Do not use membrane curing compounds where they are incompatible with coating materials applied directly to the concrete surface, such as liquid floor hardener, waterproofing, damp proofing, membrane roofing, flooring, painting, and other coatings and finish materials.
- D. Curing Formed Surfaces: Cure formed concrete surfaces, including undersides of beams, supported slabs and other similar surfaces by moist curing with forms in place for full curing period or until forms are removed. If forms are removed, continue curing by methods specified above, as applicable.

**3.06 QUALITY CONTROL TESTING:**

- A. Sampling and testing for quality control during placement of concrete will include the following:
  - 1. Slump: ASTM C 143; one test for each concrete load at point of discharge; and one test for each set of compressive strength test specimens.
  - 2. Concrete Temperature: Test hourly when air temperature is 40 F and below, or 80 F and above, and each time a set of compression test specimens are made.
- B. When total quantity of a given class of concrete is less than 50 cu. yds., strength test may be waived by Architect if, in his judgment, evidence of satisfactory strength is provided.

**END OF SECTION**

**PART 1 - GENERAL**

**1.01 DESCRIPTION:**

This section covers masonry work including:

- Face Brick
- Concrete Block And Accessories
- Mortar
- Mortar Net

**1.02 JOB CONDITIONS:**

- A. Protection of Work: During erection, cover top of walls with heavy waterproof sheeting at end of each days' work. Cover partially completed structures when work is not in progress.
- B. Do not apply uniform loading for at least 24 hours after building masonry walls or columns.
- C. Do not apply concentrated loads for at least 3 days after building masonry walls or columns.
- D. Staining: Prevent grout or mortar or soil from staining the face of masonry to be left exposed or painted. Remove immediately grout or mortar in contact with such masonry. Protect base of walls from rain-splashed mud and mortar splatter by means of coverings spread on ground and over wall surface.
- E. Protect sills, ledges and projections from droppings of mortar.
- F. Cold Weather Protection:
  - 1. Do not lay masonry when air temperature is below 35 degrees F or when the temperature is expected to fall below 25 degrees F within a 24 hour period after it has been laid.
  - 2. Do not lay masonry units that are wet or frozen.
  - 3. Remove any ice or snow formed on masonry bed by carefully applying heat until top surface is dry to the touch.
  - 4. Remove all masonry determined to be damaged by freezing conditions.

**1.02 QUALITY ASSURANCE:**

- A. Qualifications of workmen: A minimum of one skilled journeyman mason shall be present at all times during brick work to personally supervise work of this section.

**PART 2 - PRODUCTS**

**2.01 FACE BRICK:**

- A. Furnish Grade SW, face brick meeting ASTM C216, of size, color and texture to be selected by Architect.
- B. Manufacturers: Provide brick from one of the following:  
Bickerstaff, Cherokee or Boral
- C. Manufactured Units:
  - 1. Type: ASTM 216, Grade SW face brick:
    - a. Type: FBS
    - b. Size: Modular, 2 1/4" by 3 5/8" by 7 5/8"
- D. For applications resulting in exposure of brick surfaces which otherwise would be concealed from view and seating area, provide solid units with all exposed surfaces finished.

**2.02 CONCRETE BLOCK UNITS:**

- A. Size: Manufacturer's standard units with nominal face dimensions.
- B. Standard Block: Lightweight, hollow load bearing units, ASTM C 90, Grade N.

**2.03 MORTAR:** All mortar for brick shall be colored as selected by Architect. Mortar shall be premixed and prepackaged, Type S, meeting ASTM C-270. Use regular mortar for all concrete block masonry.

**2.04 MORTAR MIXING MATERIALS:**

- A. Water: Clean and drinkable.
- B. Sand: Clean, ASTM C-144

**2.05 GROUT:** Comply with ASTM C 476 for grout for use in construction of reinforced and non-reinforced unit masonry. Use grout of consistency that will completely fill all spaces intended to receive grout.

**2.06 MASONRY ACCESSORIES:**

- A. Horizontal Joint Reinforcing and Ties for Masonry: Provide welded wire units prefabricated in straight lengths of not less than 10', with matching corner ("L") and intersecting ("T") units. Fabricate from cold-drawn steel wire complying with ASTM A 82, with deformed continuous side rods and plain cross rods, into units with widths of approximately 2" less than nominal width of walls and partitions as required to position side rods for full embedment in mortar. Products shall have a current Compliance Report from the Southern Building Code Congress. Provide the following type of joint reinforcing:
  - 1. Truss type with diagonal cross rods spaced 16 inches on center.
  - 2. Wire Sizes: Fabricate with 9-gage side and cross rods.
  - 3. Wire Finish: Provide manufacturer's standard mill galvanized finish.
  - 4. Products: Subject to compliance with requirements, use products manufactured by one of the following:
    - AA Wire Products
    - DUR-O-WAL
    - National Wire Products
- B. Flexible Anchors: Where masonry is indicated to be anchored to structural framework with adjustable anchors, provide 2-piece anchors which will permit horizontal and vertical movement of masonry but will provide lateral restraint.
- C. Flashing: Polyvinyl chloride formed into uniform flexible sheets not less than 20-mils thick and black in color.
- D. Premolded Control Joint Strips: Solid rubber strips with a Shore A durometer hardness of 60 to 80, designed to fit standard sash block and maintain lateral stability in masonry wall, size and configuration as indicated.
- E. Weep holes: Provide weep holes at 32" o.c.
- F. Masonry Detergent Cleaner: PROSOKO, Sure Klean 600 or Vana Trol.

**3.01 INSTALLATION, GENERAL:**

- A. Thickness: Build masonry construction to the full thickness shown.
- B. Cut masonry units with motor-driven saw designed to cut masonry with clean sharp, un-chipped edges. Cut units as required to provide pattern shown and to fit adjoining work neatly. Use full units without cutting wherever possible. Use dry cutting saws to cut concrete masonry units.
- C. Do not wet concrete masonry units.
- D. Pattern Bond: Lay concrete block in running bond, or as directed by Architect or shown on drawings. Lay brick in running bond.
- E. Layout walls in advance for accurate spacing of surface bond patterns, with uniform joint widths and to properly locate openings, movement-type joints, returns and offsets. Avoid the use of less-than-half size units at corners, jambs and wherever possible at other locations.
- F. Lay-up walls plumb and with courses level, accurately spaced and coordinated with other work.
- G. Stopping and Resuming Work: Rack back ½-masonry unit length in each course; do not tooth. Clean exposed surfaces of set masonry, and remove loose masonry units and mortar prior to laying fresh masonry.

**3.02 MORTAR BEDDING AND JOINTING:**

- A. Lay brick and solid concrete masonry units with completely filled bed, head and collar joints; butter ends with sufficient mortar to fill head joints and shove into place.
- B. Lay hollow concrete masonry units with full mortar coverage on horizontal and vertical face shells.
- C. Joints: Maintain joint widths shown, except for minor variations required to maintain bond alignment. Lay walls with 3/8" joints. Cut joints flush for masonry walls that are to be concealed or to be covered by other materials. Tool exposed joints slightly concave using a jointer larger than joint thickness. Rake out mortar in preparation for application of caulking or sealants where shown.

**3.03 CAVITY WALLS:**

- A. Keep cavity clean of mortar droppings and other materials during construction. Strike joints facing cavity, flush. Install cavity mat or mesh to assure weeping. Mesh shall be continuous and 10" high and shall be "Mortar Net" by Hohmann & Barnard, Inc., (516) 234-0600, or approved equal.
- B. Provide weep holes in exterior wythe of cavity, composite and veneer walls located immediately above ledges and flashing, spaced 32" o.c.
- C. Tie exterior wythe to back-up with continuous horizontal joint reinforcing embedded in mortar joints at not more than 16" o.c. vertically.

**3.04 HORIZONTAL JOINT REINFORCING:**

- A. Install continuous horizontal joint reinforcing in all concrete block walls at 16" o.c. vertically.

**3.05 ANCHORING MASONRY WORK:**

- A. Provide anchoring devices of the type indicated.
- B. Anchor masonry to structural members with metal ties embedded in masonry joints and attached to structure. Provide anchors with flexible tie sections.

- C. Bonding Masonry Walls to Masonry Walls: Use horizontal joint reinforcement or metal lath at 16 inches on center vertically, or use flat bar 1 1/4" wide by 1/8" thick with 2 inch bend each end spaced at 32 inches on center vertically.

**3.06 LINTELS:**

- A. Install loose lintels of steel or concrete filled block where required.

**3.07 CONTROL AND EXPANSION JOINTS:**

- A. Provide vertical expansion, control and isolation joints in masonry where shown. Build in related masonry accessory items as the masonry work progresses. Masonry control joints shall not exceed 40' 0".

**3.08 FLASHING OF MASONRY WORK:**

- A. Provide concealed flashings in masonry work at, or above, all shelf angles, lintels, ledges and other obstructions to the downward flow of water in the wall so as to divert such water to the exterior. Prepare masonry surfaces smooth and free from projections that could puncture flashing. Place through-wall flashing on bed of mortar and cover with mortar. Seal penetrations in flashing with mastic before covering with mortar.
- B. Extend flashings the full length of lintels and shelf angles and minimum of 4" into masonry each end. Extend flashing from a line 1/2" in from exterior face of outer wythe of masonry, through the outer wythe, turned up a minimum of 4", and through the inner wythe to within 1/2" of the interior face of the wall in exposed work. Where interior surface of inner wythe is concealed by furring, carry flashing completely through the inner wythe and turn up approximately 2". At heads and sills turn up ends 2" to form a pan.
- C. Provide weep holes in the head joints of the same course of masonry bedded in the flashing mortar.

**3.09 REPAIR, POINTING AND CLEANING:**

- A. Remove and replace masonry units which are loose, chipped, broken, stained or otherwise damaged, or if units do not match adjoining units as intended. Provide new units to match adjoining units and install in fresh mortar or grout, pointed to eliminate evidence of replacement.
- B. Pointing:
  - 1. During the tooling of joints, enlarge any voids or holes, except weep holes, and completely fill with mortar. Point-up all joints at corners, openings and adjacent work to provide a neat, uniform appearance, properly prepared for application of caulking or sealant compounds.
  - 2. All mortar joints shall be rubbed and pointed using portland cement and sand mixture on the natural block. All joints shall be uniform in width and depth and all nubbins at the intersections of head and bead joints shall be removed.
- C. Clean exposed brick masonry surfaces by the bucket and brush hand cleaning method or by high pressure water method.
- D. Clean exposed concrete block masonry by dry brushing at the end of each day's work and after final pointing to remove mortar spots and droppings.

END OF SECTION

**PART 1 - GENERAL**

**1.01 DESCRIPTION:**

This section covers structural steel.

**1.02 QUALITY ASSURANCE:** Comply with the following codes and standards.

- A. AISC "Code of Standard Practice for Steel Buildings and Bridges".
- B. AISC "Specifications for the Design, Fabrication, and Erection of Structural Steel for Buildings", including the "Commentary" and Supplements thereto as issued.
- C. AISC "Specifications for Structural Joints using ASTM A 325 or A 490 Bolts" approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation.
- D. AWS D1.1 "Structural Welding Code".
- E. ASTM A 6 "General Requirements for Delivery of Rolled Steel Plates, Shapes, Sheet Piling and Bars for Structural Use".
- F. **TESTING AND INSPECTION:** The owner shall, at his discretion, provide an independent testing agency to check structural steel connections for compliance with the AISC "Specification for Structural Joints Using ASTM A325 or A490 Bolts", and AWS D1.1 "Structural Welding Code". The Contractor and architect shall coordinate when the testing agency is to be on site.

**1.03 SUBMITTALS:**

- A. Shop Drawings: Submit shop drawings, stamped and signed by a Professional Engineer registered to practice in the State where building is to be erected, including complete details and schedules for fabrication and assembly of structural steel members procedures and diagrams.
- B. Provide setting drawings, templates, and directions for installation of anchor bolts and other anchorages to be installed by others.

**1.04 DELIVERY, STORAGE AND HANDLING:**

- A. Deliver materials to site at such intervals to insure uninterrupted progress of work.
- B. Deliver anchor bolts and anchorage devices, which are to be embedded in cast-in-place concrete or masonry, in ample time to not to delay work.
- C. Store materials to permit easy access for inspection and identification. Keep steel members off ground, using pallets, platforms, or other supports. Protect steel members and packaged materials from deterioration and damage.

**PART 2 - PRODUCTS**

**2.01 MATERIALS:**

- A. Metal Surfaces, General: For fabrication of work which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness. Remove such blemishes by grinding, or by welding and grinding, prior to cleaning, treating and application of surface finishes.
- B. Structural Steel Shapes, Plates and Bars: ASTM A 36.
- C. Cold-Formed Steel Tubing: ASTM A 500, Grade B.
- D. Hot-Formed Steel Tubing: ASTM A 501.
- E. Anchor Bolts: ASTM A 307, non-headed type unless otherwise indicated.
- F. High-Strength Threaded Fasteners: Heavy hexagon structural bolts, heavy hexagon nuts, and hardened washers, complying with ASTM A 325.
- G. Electrodes for Welding: Comply with AWS Code.
- H. Structural Steel Primer Paint: Fabricator's standard rust-inhibiting primer.
- I. Non-metallic Shrinkage-Resistant Grout:
  - 1. Pre-mixed, non-metallic, non-corrosive, non-staining product containing selected silica sands, portland cement, shrinkage compensating agents, plasticizing and water reducing agents, complying with CRD-C621.
  - 2. Manufacturer: Subject to compliance with requirements, provide one of the following:  
Euco N.S.; Euclid Chemical Co.  
Masterflow 713; Master Builders  
Five Star Grout; U.S. Grout Corp.

**2.02 FABRICATION:**

- A. Shop Fabrication and Assembly: Fabricate and assemble structural assemblies in shop to greatest extent possible. Fabricate items of structural steel in accordance with AISC Specifications and as indicated on final shop drawings.
- B. Connections: Weld or bolt shop connections, as indicated. Visible joints shall be close fitting. Exposed welds that are exposed or visible shall be continuous regardless of strength requirements. Fabricated joints shall be as strong and rigid as adjoining sections.
- C. High-Strength Bolted Construction: Install high-strength threaded fasteners in accordance with AISC "Specifications for Structural Joints using ASTM A 325 or A 490 Bolts" (RCRBSJ).
- D. Welded Construction: Comply with AWS Code for procedures, appearance and quality of welds, and methods used in correcting welding work.

- E. Holes for Other Work: Provide holes required for securing other work to structural steel framing, and for passage of other work through steel framing members, as shown on final shop drawings.
- F. Cut, drill or punch holes perpendicular to metal surfaces. Do not flame cut holes or enlarge holes by burning. Drill holes in bearing plates.
- G. Shop coat: Provide not less than 2 mil thick dry Primer coat applied by brush or spray.

**PART 3 - EXECUTION**

**3.01 ERECTION:**

- A. Temporary Shoring and Bracing: Provide temporary shoring and bracing members with connections of sufficient strength to bear imposed loads. Remove temporary members and connections when permanent members are in place and final connections are made. Provide temporary guy lines to achieve proper alignment of structures as erection proceeds.
- B. Anchor Bolts: Furnish anchor bolts and other connectors required for securing structural steel to foundations and other in-place work.
- C. Furnish templates and other devices as necessary for presetting bolts and other anchors to accurate locations.
- D. Setting Bases and Bearing Plates: Clean concrete and masonry bearing surfaces of bond-reducing materials and roughen to improve bond to surfaces. Clean bottom surface of base and bearing plates.
- E. Set loose and attached base plates and bearing plates for structural members on wedges or other adjusting devices.
- F. Tighten anchor bolts after supported members have been positioned and plumbed. Do not remove wedges or shims, but if protruding, cut off flush with edge of base or bearing plate prior to packing with grout.
- G. Pack grout solidly between bearing surfaces and bases or plates to ensure that no voids remain. Finish exposed surfaces, protect installed materials, and allow to cure.
- H. Field Assembly: Set structural frames accurately to lines and elevations indicated. Align and adjust various members forming a part of complete frame or structure before permanently fastening. Clean bearing surfaces and other surfaces which will be in permanent contact before assembly. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
- I. Level and plumb individual members of structure within specified AISC tolerances.
- J. Splice members only where indicated and accepted on shop drawings.

- K. Comply with AISC Specifications for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.
- L. Do not enlarge unfair holes in members by burning or by use of drift pins, except in secondary bracing members. Ream holes that must be enlarged to admit bolts.
- M. Gas Cutting: Do not use gas cutting torches in field for correcting fabrication errors in primary structural framing.
- N. Touch-Up Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint. Apply paint to exposed areas using same material as used for shop painting.
- O. Bolted connections: Erector shall tighten bolts by use of "Calibrated Wrench" or "Turn of the Nut" methods. Marks shall be provided for the inspector when using the "Turn of the Nut" method.

**END OF SECTION 05120**

**PART 1 - GENERAL**

**1.01 DESCRIPTION:**

This section covers miscellaneous metal fabrications including:

- Loose bearing and leveling plates
- Loose steel lintels
- Miscellaneous framing and supports
- Steel pipe railing
- Wall Brackets

**1.02 SUBMITTALS:**

- A. Shop Drawings: Submit shop drawings for fabrication and erection of miscellaneous metal fabrications. Include plans, elevations and details of sections and connections. Show anchorage and accessory items. Provide templates for anchor and bolt installation by others.

**PART 2 - PRODUCTS**

**2.01 MATERIALS:**

For fabrication of miscellaneous metal work that will be exposed to view, use only materials that are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness.

- A. Steel Plates, Shapes and Bars: ASTM A 36.
- B. Steel Pipe ASTM A53; black finish, standard weight (schedule 40).
- C. Fasteners: Provide zinc-coated fasteners for exterior use or where built into exterior walls. Select fasteners for the type, grade and class required.
- D. Primer Paint: Fabricator's standard rust inhibiting primer.

**2.02 FABRICATION, GENERAL:**

- A. Workmanship: Use materials of size and thickness indicated or, if not indicated, as required to produce strength and durability in finished product for use intended.
- B. Weld corners and seams continuously, complying with AWS recommendations. At exposed connections, grind exposed welds smooth and flush to match and blend with adjoining surfaces.
- C. Provide for anchorage of type shown, coordinated with supporting structure. Fabricate and space anchoring devices to provide adequate support for intended use.
- D. Cut, reinforce, drill and tap miscellaneous metal work as indicated to receive finish hardware and similar items.
- E. Shop paint miscellaneous metal work, except members or portions of members to be embedded in concrete or masonry, surfaces and edges to be field welded, and galvanized surfaces, unless otherwise indicated.

**2.03 MISCELLANEOUS METAL FABRICATIONS:**

- A. Rough Hardware: Furnish bent or otherwise custom fabricated bolts, plates, anchors, hangers, dowels and other miscellaneous steel and iron shapes as required.

- B. Miscellaneous Framing and Supports: Provide miscellaneous steel framing and supports which are not a part of structural steel framework, as required to complete work.
- C. Fabricate miscellaneous units to sizes, shapes and profiles shown or, if not shown, of required dimensions to receive adjacent other work to be retained by framing.

**2.04 LOOSE BEARING AND LEVELING PLATES:**

Provide loose bearing and leveling plates for steel items bearing on masonry or concrete construction, made flat, free from warps or twists, and of required thickness and bearing area. Drill plates to receive anchor bolts and for grouting as required.

**2.05 LOOSE STEEL LINTELS:**

Provide loose structural steel lintels for openings and recesses in masonry walls and partitions as shown. Provide not less than 8" bearings at each side openings, unless otherwise indicated.

**PART 3 - EXECUTION**

**3.01 PREPARATION:**

- A. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installation of anchorages, such as concrete inserts, sleeves, anchor bolts and miscellaneous items having integral anchors, which are to be embedded in concrete or masonry construction. Coordinate delivery of such items to project site.

**3.02 INSTALLATION:**

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction.
- B. Cutting, Fitting and Placement: Set work accurately in location, alignment and elevation, plumb, level, true and free of rack, measured from established lines and levels.
- C. Fit exposed connections accurately together to form tight hairline joints. Weld connections that are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Grind exposed joints smooth and touch-up shop paint coat.
- D. Field Welding: Comply with AWS Code for procedures of manual shielded metal-arc welding, appearance and quality of welds made, and methods used in correcting welding work.

**3.03 ADJUST AND CLEAN:**

- A. Touch-Up Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting.

**END OF SECTION**

**PART 1 - GENERAL**

**1.01 SUMMARY:**

- A. Section Includes:
  - 1. Lumber.
  - 2. Plywood.

**1.02 REFERENCES:**

- A. Lumber Standards: Comply with PS 20 and with applicable rules of the respective grading and inspecting agencies for species and products indicated.
- B. Plywood Product Standards: Comply with PS 1 (ANSI A 199.1) or, for products not manufactured under PS 1 provisions, with applicable APA Performance Standard for type of panel indicated.

**1.03 PRODUCT HANDLING:** Delivery and Storage: Keep materials dry at all times. Protect against exposure to weather and contact with damp or wet surfaces. Stack lumber and plywood, and provide air circulation within stacks.

**1.04 JOB CONDITIONS:** Coordination: Fit carpentry work to other work; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds and similar supports to allow proper attachment of other work.

**PART 2 - PRODUCTS**

**2.01 LUMBER:**

- A. Factory-mark each piece of lumber with type, grade, mill and grading agency.
- B. Nominal Sizes: Lumber sizes shall conform to American Softwood Lumber Standard PS 20-70 and shall be surfaced on all four sides (S4S).
- C. Species:
  - 1. Preservative Treated: No.2 or better southern pine.
  - 2. Standard 2x4 or smaller: No.2, western fir or Spruce.
  - 3. Standard 2x6 or larger: No.2 or better, Southern Yellow Pine or western fir.
- D. Miscellaneous Lumber: Provide wood for support or attachment of other work including cant strips, bucks, nails, blocking, furring, grounds, stripping and similar members. Provide lumber of sizes indicated, worked into shapes shown.

**2.02 PLYWOOD:**

- A. Trademark: Identify each plywood panel with appropriate APA trademark.
- B. Equipment Backboards: FRT APA CD PLUGGED
  - Type: INTERIOR, EXPOSURE 1.
  - Thickness: 3/4 inch
  - Edges: Square
  - Fire Resistance: Class A.

**2.03 FASTENERS AND ANCHORAGES:**

Provide size, type, material and finish as indicated and as recommended by applicable standards, complying with applicable Federal Specifications for nails, staples, screws, bolts, nuts, washers and anchoring devices. Provide metal hangers and framing anchors of the size and type recommended by the manufacturer for each use including recommending nails.

**2.04 PRESERVATIVE TREATMENT:**

- A. Pressure-treat all lumber in direct contact with concrete or masonry construction. Comply with applicable requirements of AWPA Standards C2 (Lumber) and of AWPB Standards listed below.
- B. Pressure-treat lumber with water-borne preservatives to net retention of 0.25 pcf, kiln-dry to 19 percent maximum moisture content and stamp AWPB Quality Mark LP2, ABOVE GROUND USE.

**PART 3 - EXECUTION****3.01 INSTALLATION:**

- A. Discard units of material with defects that might impair quality of work, and units that are too small to use in fabricating work with minimum joints or optimum joint arrangement.
- B. Set carpentry work accurately to required levels and lines, with members plumb and true and accurately cut and fitted.
- C. Securely attach carpentry work to substrate by anchoring and fastening as shown and as required by recognized standards.

**3.02 WOOD NAILERS AND BLOCKING:**

- A. Provide wherever shown and where required for attachment of other work.
- B. Attach to substrates as required to support applied loading. Countersink bolts and nuts flush with surfaces, unless otherwise show.

**3.03 INSTALLATION OF PLYWOOD:**

Comply with applicable recommendations contained in Form No. E 304, "APA Design/Construction Guide - Residential & Commercial," for types of plywood products and applications indicated.

END OF SECTION

**PART 1 - GENERAL**

**1.01 SUBMITTALS:**

Submit wood treatment data, including chemical treatment manufacturer's instructions for handling, storing, installing and finishing treated materials.

**PART 2 - PRODUCTS**

**2.01 LUMBER, GENERAL:**

Comply with DOC PS 20 and with applicable grading rules of inspection agencies certified by the American Lumber Standards Committee's (ALSC) Board of Review. Provide dressed lumber, S4S, with each piece factory marked with grade stamp of inspection agency.

- A. For exposed lumber, furnish pieces with grade stamps applied to ends or back of each piece, or omit grade stamps and provide grade-compliance certificates issued by inspection agency.
- B. Provide lumber with 15 percent maximum moisture content at time of dressing for 2-inch nominal (38-mm) actual thickness or less, unless otherwise indicated.

**2.02 WOOD PRESERVATIVE -TREATED MATERIALS:**

Comply with applicable requirements of AWPA C2 (lumber) and AWPA C9 (plywood). Mark each treated item with the Quality Mark Requirements of an inspection agency approved by ALSC's Board of Review.

**2.03 PRESSURE-TREAT:**

Pressure treat above ground items with waterborne preservatives to a minimum retention of 0.25 lb/cu. ft. (4.0 kg/cu. m). After treatment, kiln-dry lumber and plywood to a maximum moisture content of 19 and 15 percent, respectively. Treat indicated items and the following:

- A. Wood, nailers, curbs, equipment support bases, blocking, stripping and similar members in connection with roofing, flashing, vapor barriers and waterproofing.
- B. Wood sills, sleepers, blocking, furring, stripping and similar concealed members in contact with masonry or concrete.
- C. Wood framing members less than 18 inches (460 mm) above grade.
- D. Wood floor plates installed over concrete slabs directly in contact with earth.
- E. Wood members in contact with ground or freshwater with waterborne preservatives to a minimum retention of 0.40 lb/cu. ft. (6.4 kg/cu. m).

**2.04 DIMENSION LUMBER:**

Provide dimension lumber of grades indicated according to the ALSC National Grading Rule (NGR) provisions of the inspection agency indicated.

- A. Framing: Provide Construction or No. 2 grade and any of the following species:
1. Spruce-pine-fir; NELMA or NLGA.
  2. Southern pine; SPIB.

**PART 3 - EXECUTION**

- 3.01 Set carpentry** to required levels and lines, with members plumb, true to line, cut and fitted.
- 3.02 Fit carpentry** to other construction; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds and similar supports to allow attachment of other construction.
- 3.03 Securely attach** carpentry work as indicated and according to applicable codes and recognized standards.
- 3.04 Countersink** nail heads on exposed carpentry work and fill holes with wood filler.
- 3.05 Installation of Structural-Use Panels**: Comply with applicable recommendations contained in APA Form No E30, "APA Design/Construction Guide: Residential & Commercial," for types of structural-use panels and applications indicated.

END OF SECTION

**PART 1 - GENERAL**

**1.01 SUMMARY:**

- A. Section Includes: Bituminous Dampproofing.
- B. Related Sections: 07210, mastic application of rigid board, cavity wall insulation.

**1.02 SUBMITTALS:**

- A. Product Data: Manufacturers specifications and descriptive literature.

**1.03 SITE CONDITIONS:**

- A. Environmental Requirements: Apply dampproofing only in fair weather at temperatures above 40 degrees F.

**PART 2 - PRODUCTS**

**2.01 BITUMINOUS DAMPPROOFING:**

- A. Manufacturers:
  - 1. Specified dampproofing is based on a product of W.R. MEADOWS OF GA, INC., Austell, Georgia, 770-948-1934 to establish project requirements.
  - 2. Acceptable substitute products, subject to compliance with specified requirements, are:
    - a. KARNAK CORPORATION, KARNAK 220.
    - b. SONNEBORN BUILDING PRODUCTS, HYDROCIDE 700B.
- B. Materials: SEALMASTIC-TYPE 2, Emulsion-Type Dampproofing, asbestos free, asphalt base, clay emulsion with fibers, for brush-on or spray application.

**PART 3 - EXECUTION**

**3.01 APPLICATION:**

- A. Comply with manufacturer's installation instructions and submittals approved by architect.

**END OF SECTION**

**PART 1 - GENERAL**

**1.01 DESCRIPTION:**

- A. Section Includes:  
1. Batt Insulations

**1.02 SUBMITTALS:**

Product Data: Manufacturers technical data and installation instructions.

- 1.03 JOB CONDITIONS:** Protect insulations from harmful weather exposure and physical damage.

**PART 2 - PRODUCTS**

**2.01 FIBERGLASS BATT INSULATION:**

- A. Characteristics: Un-faced fiberglass Batt designed for friction fit installation.  
Physical properties:  
K Factor: 0.27  
Density: 0.5 pounds per cubic foot  
Flame spread rating: 25
- B. Manufacturer: Subject to compliance with requirements, provide products of one of the following:  
Certain-Teed  
Owens/Corning

**PART 3 - EXECUTION**

**3.01 BATT INSTALLATION:**

- A. Extend insulation full thickness over entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation. Remove projections that interfere with placement.

**END OF SECTION**

SECTION 07610  
Metal Roofing

PART 1 - GENERAL

1.01 DESCRIPTION

- A. General:
1. Furnish all labor, material, tools, equipment and services for all preformed roofing as indicated, in accord with provisions of Contract Documents.
  2. Completely coordinate with work of all other trades.
  3. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
  4. See Division 1 for General Requirements.
- B. Related Work Specified Elsewhere:
1. Structural steel: Section 05100.
  2. Flashing and sheet metal: Section 07600.

1.02 QUALITY ASSURANCE

- A. Applicable Standards:
1. SMACNA: "Architectural Sheet Metal Manual", Sheet Metal and Air Conditioning Contractors National Association, Inc.
  2. LGSI: "Light Gage Structural Institute"
  3. AISC: "Steel Construction Manual", American Institute of Steel Construction.
  4. AISI: "Cold Form Steel Design Manual", American Iron and Steel Institute (1996 Edition).
  5. UL580: "Tests for Uplift Resistance of Roof Assembles", Underwriters Laboratories, Inc.
  6. UL2218: Class 4 Impact Resistance Rating
  7. ASTM E 283-84: "Standard Test Method for Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Difference Across the Specimen", American Society for Testing and Materials.
  8. ASTM E 331-83: "Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference", American Society for Testing and Materials.
  9. ASTM E 1514-93: "Standard Specification for Structural Standing Seam Steel Roof Panel Systems", American Society for Testing and Materials.
  10. ASTM E 1592-95: "Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference", American Society for Testing and Materials.
  11. ASTM A 792-83-AZ50 (Painted) & ASTM A792-83-AZ55 (Bare Galvalume Plus®): "Specifications for Steel Sheet, Aluminum-Zinc Alloy Coated by the Hot Dip Process, General Requirements (Galvalume®)", American Society for Testing and Materials
  12. ASTM E 408-71: Standard Test Method for Total Normal Emittance of Surfaces Using Inspection- Meter Techniques.
  13. ASTM E 903-96: Standard Test Method for Solar Absorptance, Using Integrating Spheres. (Energy Star? for Roof Products)
- B. Manufacturer's Qualifications:
1. Manufacturer has a minimum of five years experience in manufacturing metal roof systems of this nature. Panels specified in this section shall be produced in a factory environment (not with a portable roll former with fixed-base roll forming equipment) and in line leveling

assuring the highest level of quality control. A letter from the manufacturer certifying compliance will accompany the product material submittals.

C. Installation Contractor's Qualifications:

1. Installation contractor shall be an approved installer, certified by the manufacturer before the beginning of installation of the metal roof system, specifically for MBCI's LokSeam® metal roof system, Certification by manufacturer must include the following:
  - a. Maintain \$250,000 minimum general liability insurance coverage.
  - b. Maintain statutory limits of worker's compensation coverage as mandated by law.
  - c. Have no viable claims pending regarding negligent acts or defective workmanship on previously performed or current projects.
  - d. Has not filed for protection from creditors under any state or federal insolvency or debtor relief statutes or codes.
  - e. Project foreman is the person having received certification by the manufacturer specific training in the proper installation of the selected metal roof system and will be present to supervise whenever material is being installed. Specific certified installer program shall include the following:
  - f. Provide certification letter that installation contractor has a minimum of three years' of metal product installation experience immediately preceding the date upon which work is to commence.

### 1.03 SYSTEM PERFORMANCE REQUIREMENTS

A. Performance Testing:

1. Metal roof system must be tested in accordance with Underwriters Laboratories, Inc. (UL) Test Method 580 "Tests for Uplift Resistance of Roof Assemblies".
2. Metal roof system must be installed in accordance with UL Construction method: #254 12" wide panels (22 ga. panels @ Stage), (24 ga. panels @ Toilets and Media) with LokSeam® UL 90 Clips
3. Metal roof system must be tested in accordance with ASTM E 1592-95 for negative loading when AISI specifications do not apply. Determine panel bending and clip-to-panel strength by testing in accordance with ASTM E 1592-95. Capacity for gauge, span or loading other than those tested may be determined by interpolating test values only.
4. Metal roof system must meet the air infiltration requirements of ASTM E 283-84 when tested with a 6.24 PSF pressure differential. The resulting air infiltration leakage rate will be a minimum of 12" LokSeam®-(.0215 cfm/sq. ft.).
5. Metal roof system must meet the water penetration requirements of ASTM E 331-83 when tested with a 6.24 PSF pressure differential with no uncontrollable water leakage when five gallons per hour of water is sprayed per square foot of roof area
6. Metal Roof Panels shall be high reflectance and high emittance in accordance with Energy Star.

### 1.04 DESIGN REQUIREMENTS

A. Roof Design Loads:

1. Design criteria shall be in accordance with the most current version of IBC.
2. Dead Loads
  - a. The dead load shall be the weight of the SSMR system. Collateral loads, such as sprinklers, mechanical and electrical systems, and ceilings shall not be attached to the panels.
3. Live Loads
  - a. The panels and concealed anchor clips shall be capable of supporting a minimum uniform live load of 20 psf.
4. Roof Snow Loads
  - a. The design roof snow loads shall be as shown on the contract drawings.
5. Wind Loads
  - a. The design wind uplift pressure for the roof system shall be as shown on the contract drawings. The design uplift force for each connection assembly

shall be that pressure given for the area under consideration, multiplied by the tributary load area of the connection assembly. The safety factor listed below shall be applied to the design force and compared against the ultimate capacity. Prying shall be considered when calculating fastener design loads.

- aa. Single fastener in each connection: 3.00
  - bb. Two or more fasteners in each connection: 2.25
- Design specifications. Maximum deflection under applied live load, snow or wind load shall not exceed  $L/240$  of the span length.

## 1.05 SUBMITTALS

- A. Shop drawings:
  - 1. Submit complete shop drawings and erection details, approved by the metal roofing manufacturer, to the architect Architect's for review. Do not proceed with manufacture of roofing materials prior to review of shop drawings and field verification of all dimensions. Do not use drawings prepared by the architect for shop or erection drawings.
  - 2. Shop drawings show methods of erection, roof and wall panel layout, sections and details, anticipated loads, flashings, sealants, interfaces with all materials not supplied and proposed identification of component parts and their finishes.
- B. Performance Tests:
  - 1. Submit certified test results by a recognized testing laboratory or manufacturer's lab (witnessed by a professional engineer) in accordance with specified test methods for each panel system.
- C. Calculations:
  - 1. Submit engineering calculations defining all cladding loads for all roof areas based on design criteria listed in Para

## 1.04 Design Requirements, allowable clip loads and required number of fasteners to secure the panel clips to the designated substructure.

- 1. Compute uplift loads on clip fasteners with full recognition of prying forces and eccentric clip loading.
  - 2. Calculate holding strength of fasteners in accordance with submitted test data provided by the fastener manufacturer based on length of embedment and properties of materials.
  - 3. Submit thermal calculations and details of floating clip, flashing attachments, and accessories certifying the free movement in response to the expansion/ contraction forces resulting from a total temperature differential of 110 degrees F.
- A. Samples:
    - 1. Submit samples and color chips for all proposed finishes.
      - a. Submit one 8-inch long sample of panel, including clips.
      - b. Submit two 3 inches x 5 inch color chip samples in color selected by the architect.
  - B. Warranties:

Metal roof system manufacturer shall submit a specimen copy of the warranty upon final acceptance of the project. Provide one of the following warranties.

    - 1. Finish:
      - a. Covering bare metal against rupture, structural failure and perforation due to normal atmospheric corrosion exposure for a period of 20 years.
      - b. Covering panel finish against cracking, checking, blistering, peeling, flaking, chipping, chalking and fading for a period of twenty (20) years.
    - 2. Weathertightness:

Metal roof system manufacturer shall submit a specimen copy of manufacturer's Weathertightness Warranty, including evidence of application for warranty and manufacturer's acceptance of the applicator and warranty conditions.

a. Standard Warranty

- F. Test Reports:
1. Submit Test Reports showing that metal panels have been tested in accordance with the Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference of ASTM E 1592-95.
  2. Metal roof system must meet the air infiltration requirements of ASTM E 283-84 when tested with a 6.24 PSF pressure differential. The resulting air infiltration leakage rate will be a minimum of 12" LokSeam®-(.0215 cfm/sq. ft.).
  3. Submit Test Reports showing that metal panels meet the water penetration requirements of ASTM E 331-83 when tested with a 12.00 PSF pressure differential with no uncontrollable water leakage when five gallons per hour of water is sprayed per square foot of roof area.
- G. Metal Roof System Fabrication Certification:
1. Submit a letter from the metal roof system manufacturer certifying the LokSeam® panels have been produced in a factory environment (not job site roll formed) with fixed-base roll forming equipment and in line leveling.
- H. Certified Installers Qualifications:
1. Submit certificate from manufacturer certifying that installer of the metal roof system has met all of the criteria outlined in "1.02 C. Installer's qualifications" and is an authorized installer certified by the manufacturer.
  2. Submit the formal syllabus for the classroom and hands-on training.
  3. Submit five references from five different architects or building owners for projects that have been in service for a minimum of two years, stating satisfactory performance by the installation contractor.

#### 1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Delivery:
1. Deliver metal roof system to job site properly packaged to provide protection against transportation damage.
- B. Handling:
1. Exercise extreme care in unloading, storing and erecting metal roof system to prevent bending, warping, twisting and surface damage.
- C. Storage:
1. Store bundled sheets off the ground sufficiently high enough to allow air circulation beneath bundle and to prevent rising water from entering bundle. Slightly elevate one end of bundle. Prevent rain from entering bundle by covering with tarpaulin, making provision for air circulation between draped edges of tarpaulin and the ground. Prolonged Storage of sheets in a bundle is not recommended. If conditions do not permit immediate erection, extra care should be taken to protect sheets from staining or watermarks.

#### 1.07 WEATHERTIGHTNESS WARRANTY

- A. The Contractor shall provide to the Owner, a Standard warranty signed by the roofing manufacturer of the Standing Seam Roof System as outlined below:
- B. Standard Warranty;
1. For a period of twenty (20) years from the date of substantial completion, the roofing manufacturer WARRANTS to the Building Owner ("Owner"): that the roofing manufacturer's furnished roof panels, flashing, and related items used to fasten the roof panels and flashing to the roof structure ("Roof System") will not allow intrusion of water from the exterior of the roofing manufacturer's Roof System into the building envelope, when exposed to ordinary weather conditions and ordinary wear and usage. The Date of substantial completion is the date that is certified by the Architect, Owner, or Owner's Representative, when the roofing manufacturer's Roofing System is completed and accepted by or on behalf of the Owner.

2. The Roofing Installer shall have the sole and exclusive obligation for all warranty work commencing on the date of substantial completion up to and until the roof system has performed leak free for (24) consecutive months. The sole and exclusive obligation for all warranty work commencing on the date the roof has been leak free for (24) consecutive months and under all circumstances terminates on the 20 year anniversary of the date certified as substantial completion of the roofing manufacturer's roof system.
3. Roofing Manufacturer's Liability: The total liability of the roofing manufacturer under standard warranty is Standard I, Limited solely to \$.20 sq. ft. of the actual roof area.

## PART 2 - PRODUCTS

LokSeam® SERIES, architectural structural standing seam metal roof system; minimum slope of 1/2:12]

### 2.01 MATERIALS

- A. Metal Roof System Profile:
  1. 1-3/4" inch high rib x 18 inch wide panel.
- B. Panel Style:
  1. Narrow rib, vertical leg, concealed fastener, positive snap lock standing seam, utilizing male and female rib configurations, with factory applied hot melt mastic in female rib.
- C. Gauge:
  1. (22 gauge @ Stage), (24 gauge @ Toilets and Media) UL90 rated - Underwriters Laboratories
- D. Substrate:
  1. Galvalume® steel sheet, 0.5 ounces/square foot, minimum yield of 50,000 PSI.
- E. Clip:
  1. 18 gauge UL-rated clip with two fasteners to structural (UL-90 rated - Underwriters Laboratories).
- F. Texture:
  1. Smooth with striations
- G. Finish:
  1. Premium fluorocarbon coating produced with Kynar 500 (20 year warranty).
- H. Color:
  1. Selected from metal roof system manufacturer's standard offering.
- I. Acceptable Manufacturer:
  1. MBCI - Houston, TX - (281) 445-8555.
  2. ENGLERT – Alco, TN – (865) 970-0090
  3. IMETCO – Tucker, GA – (770) 908-1030

Or pre-approved equal.
- J. Other manufacturers desiring approval comply with Section 01630.

### 2.02 MISCELLANEOUS MATERIALS

- A. Fasteners:
  1. All self-tapping/self-drilling fasteners, bolts, nuts, self-locking rivets and other suitable fasteners shall be designed to withstand specified design loads.
  2. Use long life fasteners for all interior and exterior metal roof system applications.
  3. Provide fasteners with a factory applied coating in a color to match metal roof system application.
  4. Provide neoprene washers under heads of exposed fasteners.
  5. Locate and space all exposed fasteners in a true vertical and horizontal alignment. Use proper torque settings to obtain controlled uniform compression for a positive seal without rupturing the neoprene washer.
- B. Accessories:

1. Provide all components required per the metal roof system manufacturer's approved shop drawings for a complete metal roof system to include panels, panel clips, trim/flashing, fascias, ridge, closures, sealants, fillers and any other required items.
  - a. All outside closures will be fabricated from Pre-Painted Galvalume sheet steel of the same gauge, finish and color as the panels.
  - b. All tape seal is to be a pressure sensitive, 100 percent solids, polyisobutylene compound sealing tape with a release paper backing. Provide permanently elastic, non-sagging, non-toxic, non-staining tape seal approved by the metal roof system manufacturer.
  - c. All joint sealant is to be a one-part elastomeric polyurethane sealant approved by the metal roof system manufacturer.

## 2.03 FABRICATION

- A. Material shall be in-line leveled prior to roll forming the panel profile.
- B. Where possible, roll form panels in continuous lengths, full length of detailed runs.
- C. Standard panel length shall be no more than 40 feet long for 22 gauge and 24 gauge. (For longer length availability, contact manufacturer).
- D. Fabricate trim/flashing and accessories to detailed profiles.
- E. Fabricate trim/flashing from same material as panel.

## PART 3 - EXECUTION

### 3.01 SURFACE CONDITIONS

- A. Examination:
  1. Inspect installed work of other trades and verify that such work is complete to a point where this work may continue.
  2. Verify that installation may be made in accordance with approved shop drawings and manufacturer's instructions. This specifically includes verifying that secondary structural members and/or decking are installed to meet UL and building code requirements. Coordinate with metal roof system manufacturer to insure that reduced clip spacing at eave, rake, ridge and corner areas are accommodated.
- B. Discrepancies:
  1. In event of discrepancy, notify the architect (owner).
  2. Do not proceed with installation until discrepancies have been resolved.

### 3.02 INSTALLATION

- A. Install metal roof system so that it is weathertight, without waves, warps, buckles, fastening stresses or distortion, allowing for expansion and contraction.
- B. Install metal roof system in accordance with manufacturer's instructions and shop drawings.
- C. Provide concealed anchors at all panel attachment locations.
- D. Install panels plumb, level and straight with seams and ribs parallel, conforming to design as indicated.

### 3.03 ROOF CURB INSTALLATION

- A. Comply with metal roof system manufacturer's shop drawings, instructions and recommendations for installation of roof curbs. Refer to metal roof system manufacturer's standard installation details. Anchor curbs securely in place with provisions for thermal and structural movement.

### 3.04 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service
  1. During installation, provide for two on-site inspections of roof application by qualified technical representative of the manufacturer.

2. Upon completion of installation, provide final inspection by a technical representative of roofing manufacturer to confirm that roofing system has been installed in accordance with manufacturer's requirements.

### 3.05 CLEANING, PROTECTION

- A. Dispose of excess materials and remove debris from site.
- B. Clean work in accordance with manufacturer's recommendations.
- C. Protect work against damage until final acceptance. Replace or repair to the satisfaction of the architect, any work that becomes damaged prior to final acceptance.
- D. Touch up minor scratches and abrasions with touch up paint supplied by the metal roof system manufacturer.
- E. Do not allow panels or trim to come in contact with dissimilar metals such as copper, lead or graphite. Water run-off from these materials is also prohibited.

END OF SECTION

**PART 1 - GENERAL**

**1.01 SUMMARY:**

- A. Section Includes: Sheet Metal Flashing and Trim.
- B. Related Requirements:
  - 1. Section 07900, joint sealers.
  - 2. Plumbing roof penetrations.

**1.02 INDUSTRY STANDARD:**

Provide products that comply with applicable requirements of SMACNA "Architectural Sheet Metal Manual," except as otherwise indicated.

**1.03 SUBMITTALS:**

Shop Drawings: Show joining, profiles, accessories, anchorages, flashing connections, expansion provisions and relationship to supporting structure and to adjoining roof and wall construction.

**PART 2 - PRODUCTS**

**2.01 SHEET METAL FLASHING AND TRIM:**

- A. Aluminum Sheet: Alloy and temper recommended by manufacturer for use intended, factory finish. 10 year color warranty (color to be chosen by Architect).
  - 1. Miscellaneous Flashing: 0.032 inch thick.
  - 2. Base Flashing: .024-inch aluminum.
  - 3. Counter Flashing: .024-inch aluminum.
- B. Concealed Fasteners: Same metal as item fastened or other non-corrosive metal as recommended by manufacturer.
- C. Plumbing roof penetrations shall be flashed with a flashing equal to Deck-Mate by Portals Plus.

**2.02 FABRICATION:**

- A. Fabricate sheet work in accord with approved shop drawings.
- B. Form sheet metal works with clear, sharp and uniform arises. Hem exposed edges.
- C. Shop weld and miter corners.

**PART 3 - EXECUTION**

**3.01 INSTALLATION:**

- A. Install sheet metal work in accord with approved shop drawings.
- B. Isolate dissimilar materials to prevent electrolysis.
- C. Fasten sheet metal items as indicated or required to provide rigid, secure installation, free of warp or bind. Fastenings shall be made in such manner as not to impair the watertight integrity of the installation. Exposed face nailing will not be permitted.
- D. Install expansion joints per Roof manufactures specifications.
- E. Seal metal-to-metal joints with silicone sealant specified in Section 07900.

**END OF SECTION**

**PART 1 - GENERAL**

**1.01 DESCRIPTION:**

This section covers general building joint sealers.

**1.02 SUBMITTALS:**

- A. Product Data: Submit manufacturer's product specifications and handling/installation/curing instructions.
- B. Color Samples: Submit manufacturer's standard caulking material colors.

**1.03 JOB CONDITIONS:**

Weather Conditions: Do not proceed with installation of sealants under unfavorable weather conditions.

**PART 2 - PRODUCTS**

**2.01 SILICONE SEALANT-TYPE 1: All Exterior Joints**

- A. Acceptable product:
  - 1. Dow Corning Corp. #790.
  - 2. General Electric Company, Silpruf
  - 3. Tremco, Inc., Spectrum I
- B. Colors: As selected by Architect from manufacturer's standard selection.

**2.02 SILICONE SEALANT-TYPE 2: Joints between plumbing fixtures and adjacent surfaces.**

- A. Manufacturer:
  - 1. Specified product is manufactured by DOW CORNING CORPORATION.
- B. Product: DOW CORNING 786 Mildew Resistant Silicone Sealant, one-part silicone, color as per architect.

**2.03 ACRYLIC-LATEX CAULKING COMPOUND: All Interior Joints**

- A. Acceptable products:
  - 1. Sonneborn/Sonolac
  - 2. Pecora Corp./AC-20.
  - 3. Tremco/Acrylic-Latex Caulk.
- B. Characteristics: Flexible, paint able, non-staining, non-bleeding acrylic emulsion.
- C. Color: As per architect

- 2.04** **BACKER ROD:** Provide compressible rod stock in joints over 1/4" wide as recommended by sealant manufacturer for back-up of and compatibility with sealant.

**PART 3 - EXECUTION**

**3.01** **JOINT PREPARATION:**

Clean joint surfaces immediately before installation of sealants or caulking compounds. Remove dirt, insecure coatings, moisture and other substances that could interfere with seal of sealant or caulking compound.

**3.02** **INSTALLATION:**

- A. Comply with manufacturer's printed instructions except where more stringent requirements are shown or specified.
- B. Set joint filler units at depth or position in joint as indicated to coordinate with other work. Do not leave voids or gaps between ends of joint filler units.
- C. For normal moving joints sealed with Elastomeric sealants but not subject to traffic, fill joints to a depth equal to 50% of joint width, but neither more than 1/2" deep nor less than 1/4" deep.
- D. Spillage: Do not allow sealants or compounds to overflow from confines of joints, or to spill onto adjoining work, or to migrate into voids of exposed finishes. Clean adjoining surfaces by whatever means may be necessary to eliminate evidence of spillage.

**END OF SECTION**

**PART 1 - GENERAL**

**1.01 SUMMARY:**

- A. Section Includes:
  - 1. Flush Steel Doors.
  - 2. Steel Frames.
- B. Related Sections:
  - 1. Section 08710-Door Hardware.
  - 2. Section 08800-Glazing.

**1.02 QUALITY ASSURANCE:**

- A. Manufacturers shall be current members of either the Steel Door Institute (SDI) or the Hollow Metal Manufacturers Association (HMMA).
- B. Provide doors and frames from a single manufacturer complying with:
  - 1. Steel Door Institute "Recommended Specifications: Standard Steel Doors and Frames" (ANSI/SDI-100-91).

**1.03 SUBMITTALS:**

- A. Product Data: Specifications, cut-sheets and installation instructions. Include details of core and edge construction, trim for openings and similar components.
- B. Shop Drawings: Provide schedule of doors and frames using same reference numbers as on contract drawings. Include details of each frame type, elevations of door design types, conditions at openings, details of construction, location and installation requirements of finish hardware and reinforcements, and details of joints and connections. Show anchorage and accessory items.

**1.04 DELIVERY, STORAGE AND HANDLING:**

- A. Deliver hollow metal work in cartons or crates to provide protection during transit and job storage.
- B. Inspect hollow metal work upon delivery for damage. Minor damages may be repaired provided finish items are equal in all respects to new work and acceptable to Architect; otherwise, remove and replace damaged items as directed.
- C. Store hollow metal work at building site under cover in manner that will prevent rust and damage.

**PART 2 - PRODUCTS**

**2.01 MANUFACTURER:**

- Subject to compliance with specified requirements, provide standard steel doors and frames by one of the following:
  - 1. Ceco Corp.
  - 2. Republic Builders Products.

3. SteelCraft Manufacturing Co.
4. Habersham Metal Products Co.
5. Curries Manufacturing Co.

**2.02 MATERIALS:**

- A. Hot-Rolled Steel Sheets and Strip: Commercial quality carbon steel.
- B. Cold-Rolled Steel Sheets: Commercial quality carbon steel.
- C. Supports and Anchors: Fabricate of not less than 18 gauge galvanized sheet steel or 7 gauge diameter galvanized steel wire.
- D. Inserts, Bolts and Fasteners: Manufacturer's standard units, except hot-dip galvanize items to be built into exterior walls.
- E. Shop Applied Paint: Rust-inhibitive baked-on primer suitable as a base for specified finish paints.

**2.03 FABRICATION, GENERAL:**

- A. Fabricate steel door and frame units to be rigid, neat in appearance and free from defects, warp or buckle.
- B. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat Phillips heads for exposed screws and bolts.
- C. Finish Hardware Preparation: Prepare doors and frames to receive mortises and concealed finish hardware in accordance with final Finish Hardware Schedule and templates provided by hardware supplier.
- D. Reinforce doors and frames to receive surface-applied hardware with steel shapes and plates, in gauge listed below. Drilling and tapping for surface-applied finish hardware may be done at project site.
  1. Hinges: Min. 8 gauge plate or min. 12 gauge channel with extruded screw holes to provide min. equivalent 8 gauge thread depth.
  2. Locks, bolts, and panic devices: Min.14 gauge.
  3. Push and pull plates: Min. 16 gauge (doors only).
- E. Shop Painting:
  1. Clean, treat, and paint exposed surfaces of steel door and frame units.

**2.04 FLUSH STEEL DOORS:**

- A. Grade III Heavy-duty, Model 2 seamless design.
- B. Reinforce, stiffen, sound deaden and insulate flush doors with manufacturer's standard core construction.
  1. Top and bottom steel reinforcement channels to be 18-gauge minimum and spot-welded within doors as follows:
    - a. Top channel: FLUSH

- b. Bottom channel: INVERTED with weep holes.
  2. Reinforce full cut-outs in flush doors with minimum 18 gauge vertical channels at both sides of openings or min 20 gauge channel full perimeter reinforcing and spot welded in place; reinforce door corners to prevent racking.
  3. All door edges shall be seamless.
- C. Provide metal doors of types and styles indicated on drawings or schedules, primed for on-site paint finish.
- D. Provide all metal doors of the following gauges: Min. 16 gauge
- E. Light Frames: Furnish standard formed steel frames for vision light openings, primed for on-site paint finish. Glazing stops shall be factory installed.

**2.05 STEEL FRAMES:**

- A. Provide metal frames for doors and sidelights of types indicated and primed as specified in paragraph 2.03-H for on-site paint finish.
  1. Fabricate frames with mitered and smooth ground, continuously welded corners for installation into masonry wall construction.
  2. Provide all metal frames of the following gauges: Min. 16 gauge

**PART 3 - EXECUTION**

**3.01 INSTALLATION:**

- A. Install standard steel doors, frames, and accessories in accordance with final shop drawings and manufacturer's data.
- B. Place masonry frames prior to construction of enclosing walls and ceilings. Set frames accurately in position, plumbed, aligned and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders leaving surfaces smooth and undamaged.
- C. Install 3 wall anchors at hinge and strike levels and 1 welded floor anchor per jamb.

**3.02 ADJUST AND CLEAN:**

- A. Prime Coat Touch-up: Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touch-up of compatible air-drying primer.
- B. Final Adjustments: Check and readjust operating finish hardware items, leaving steel doors and frames undamaged and in complete and proper operating conditions.

**END OF SECTION**

**PART 1 - GENERAL**

**1.01 SUMMARY:**

- A. Section Includes:
  - 1. FRP Doors
  - 2. Hardware Schedule
  
- B. Related Requirements:
  - 1. Section 08700, hardware products.
  - 2. Section 08110, hollow metal frames.

**1.02 SUBMITTALS:**

- A. Product Data: Manufacturer's specifications and descriptive literature.
  
- B. Shop Drawings:
  - 1. Doors: Elevations and construction details.
  - 2. Hardware locations.
  
- C. Samples: FRP color selection.

**PART 2 - PRODUCTS**

**2.01 FRP DOORS:**

- A. Approved manufacturers:
  - 1. COMMERCIAL DOOR SYSTEMS; TC-200
  - 2. SPECIAL LITE, INC.; SL-17
  - 3. VISTAWALL ARCH. PRODUCTS CO.;
  
- B. Components:
  - 1. Frame: Hollow Metal 08110
  
  - 2. Core: Urethane foam, 3 pounds per cubic foot density, foamed-in-place, 2 pounds closed cell with 25-33 PSI compression.
  - 3. Face Sheet: Fiberglass reinforced polyester, 0.120 inch thick with textured surface and integral color. Rabbeted edges to fit flush into perimeter slots at stiles and rails. Color to be selected by architect.

**PART 3 - EXECUTION**

**3.01 INSTALLATION:** Install as per manufacturer's written instructions.

**END OF SECTION**

**PART 1 - GENERAL**

1.01 SUMMARY:

- A. Section Includes: Crank operated, coiling counter doors.

1.02 SUBMITTALS:

- A. Product Data: Manufacturers specifications and descriptive literature. Mark to show compliance with project requirements.
- B. Shop Drawings: Show plans, elevations, construction details and attachment to building wall.

**PART 2 - PRODUCTS**

2.01 MANUFACTURERS:

- A. Specified counter doors are based on COOKSON products to establish project requirements.
- B. Acceptable substitute products, subject to compliance with specified requirements, may be manufactured by: NORTH AMERICAN, OVERHEAD DOOR, ATLAS ROLL-LITE, CORNELL IRON WORKS.

2.02 MODEL: COOKSON CD10 series, face mounted, crank operated.

2.03 COMPONENTS:

- A. Curtain: constructed of interconnected strip steel slats conforming to ASTM-526. The curtain shall be constructed of 22 gauge No. 10 (1-1/4" high x 3/8" deep) slats.
- B. Finish shall conform to the following:
1. Hot dipped galvanized G-90 coating consistent with ASTM A-525.
  2. Bonderized coating for prime coat adhesion.
  3. Corrosion inhibiting primer - .2 mils per side.
  4. Thermo-setting tan polyester topcoat with a minimum thickness of .6 mills each side.
- C. Bottom Bar: constructed of tubular extruded aluminum measuring 1-5/16" deep by 2-1/4" high with a double vinyl astragal on the bottom edge. The bottom bar shall receive a 204-R1 clear anodized finish.
- D. Guides: constructed of extruded aluminum and measures 1-3/4" square. Each side of the channel portion capturing the curtain shall contain wool pile weather-stripping. The guides shall receive a 204-R1 clear anodized finish.
- E. Brackets: constructed of 3/16" thick die cast aluminum.

- F. Gears: cast iron with teeth cast from machine cut patterns. The pinion gear shall not be less than a 3" pitch diameter. The gear ratio shall be designed for a maximum effort of not more than 30 pounds.
- G. Barrel: steel tubing of not less than 4" in diameter. Oil tempered torsion springs shall be capable of correctly counter balancing the weight of the curtain. The barrel shall be designed to limit the maximum deflection to .03" per foot of opening width. The finish on the barrel shall be one (1) coat of bronze rust-inhibiting prime paint.
- H. Hood: fabricated from 24 gauge galvanized steel, formed to fit the square brackets. The finish on the hood shall conform to the same specifications as indicated in the curtain section.

2.04 OPERATION:

- A. Doors shall be operated by means of a hand crank with a removable operating arm.

2.05 LOCKING MECHANISMS:

- A. The crank operated doors shall be secured by means of a concealed sliding bolt deadlock in the bottom bar operated by a cylinder lock.

**PART 3 - EXECUTION**

3.01 INSTALLATION:

- A. All rolling steel counter doors shall be installed by an authorized distributor.
- B. Comply with installation instructions, product data and shop drawings, reviewed by Architect. Set counter doors plumb, level and securely mounted to wall. Butt guides to counter top.
- B. Adjust and lubricate moving parts to operate easily, without binding and to provide tight, even fit at counter top.
- C. Clean exposed surface to remove dirt and markings.

3.02 WARRANTY:

- A. All rolling steel counter doors shall be warranted for a period of twelve (12) months from the time of shipment against defects in workmanship and materials.

END OF SECTION

## SECTION 08520

### ALUMINUM WINDOWS

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. The Conditions of the Contract, and all Sections of Division 1, are hereby made a part of this Section.
- B. Section Includes: Factory glazed windows complete with insect screens, reinforcing, shims, anchors, and attachment devices.
- C. Related Sections:
  - 1. Division 7 Section "Joint Sealants."
  - 2. Division 8 Section "Glass and Glazing."
- D. Coordinate work with that of all construction contractors affecting or affected by work of this Contract. Cooperate with such contractors to assure the steady progress of the Work.
- E. Conduct field testing of windows when specified in Division 1 by an independent lab using AAMA field test procedures.

##### 1.2 SYSTEM DESCRIPTION

- A. General: In addition to requirements shown or specified comply with applicable provisions of AAMA/WDMA/CSA 101/I.S.2/A440-05 for design, materials, fabrication and installation of component parts.
- B. New Construction:
  - 1. Coordinate with the Architect and the general contractor that the opening dimensions will be maintained in accordance with the documents.
  - 2. It is the responsibility of the sub-contractor to allow proper clearance for the type of installation in accordance with the manufacturer's standard procedures.
- C. Design Requirements:
  - 1. Manufacturer/subcontractor is responsible for designing system, including installation instructions and necessary modifications to meet specified requirements and maintain visual design concepts.
  - 2. Requirements shown by details are intended to establish basic dimension of unit, sight lines and profiles of members.
  - 3. Provide assemblies free from rattles, wind whistles and noise due to thermal and structural movement and wind pressure.
  - 4. Installation instructions are to take into account specified site peculiarities and expansion and contraction movements so there is no possibility of loosening, weakening or fracturing connection between units and building structure or between units themselves.
  - 5. Provide for expansion and contraction due to structural movement without detriment to appearance or performance.
  - 6. Evacuate water without infiltration to interior from exterior face of wall, water entering joints, and condensation occurring within windows, by drain holes and gutters of adequate size or other acceptable method.
  - 7. Provide concealed fastening wherever possible.

- D. Performance Requirements: Requirements for aluminum windows, terminology and standards of performance, and fabrication and workmanship are those specified and recommended in AAMA/WDMA/CSA 101/I.S.2/A440-05 and applicable general recommendations published by AAMA. Conform to more stringent of specified AAMA standards and following:
1. Air Infiltration Test: Not exceed 0.10 cubic feet per minute per foot of crack length when tested at a pressure of 6.24 psf. Perform tests in accordance with ASTM E 283 with the sash in a closed and locked position.
  2. Water Resistance Test: Subject window unit to a water resistance test in accordance with ASTM E 331 and E547 with no water passing the interior face of the window frame and no leakage as defined in the test method. Mount the glazed unit in its vertical position continuously supported around the perimeter and the sash placed in the fully closed and locked position. When a static pressure of 12 pounds per square foot has been stabilized, apply five gallons of water per square foot of window area to the exterior face of the unit for a period of 15 minutes.
  3. Uniform Load Deflection Test: ASTM E 330 at 95 pounds per square foot: No member deflection more than 1/175 of its span. Maintain test load for a period of 10 seconds resulting in no glass breakage, permanent damage of fasteners, hardware parts, support arms, actuating mechanisms or any other damage causing the window to be inoperable.
  4. Uniform Load Structural Test: Apply a minimum exterior and interior uniform load of 143 pounds per square foot to the entire outside surface of the test unit. Maintain this test load for a period of 10 seconds. Results: No glass breakage, permanent damage of fasteners, hardware parts, support arms, actuating mechanisms, or any other damage causing the window to be inoperable. And no permanent deformation of any frame or vent member in excess of 0.2 percent of its span.
  5. Life Cycle Test: Per AAMA 101 and AAMA 910, provide proof that the product meets the criteria including passing air and water tests at the conclusion of the cycle tests.
  6. Condensation Resistance Factor: Test in accordance with AAMA 1503 standards and tests of thermal performance resulting in a CRF of no less than 59.
  7. "U" Value Tests: (Co-efficient of Heat Transfer): Thermal Transmittance of Conduction with a 15 mph perpendicular dynamic wind: 0.64 BTU/hr/ft<sup>2</sup>/F with clear-clear glass and 0.48 BTU/hr/ft<sup>2</sup>/F using clear-Low E insulating glass..
  8. Testing: Where manufacturer's standard window units comply with requirements and have been tested in accordance with specified AAMA/NWWDA 101/I.S.2-97 tests, provide certification by AAMA certified independent laboratory showing compliance with such tests. Submit copy of the test report signed by the independent laboratory.

### 1.3 SUBMITTALS

- A. Product Data: Submit manufacturer's specifications, recommendations and standard details for aluminum window units.
- B. Shop Drawings: Submit shop drawings, including location floor plans or exterior wall elevations showing all window openings, typical unit elevations at 1/4 inch scale, and half size detail sections of every typical composite member. Show anchors, hardware, operators and other components as appropriate if not included in manufacturer's standard data. Include glazing details and standards for factory glazed units.
- C. Samples:
1. Submit one sample of each required aluminum finish, on 3 x 3 inch long sections of extrusion shapes or aluminum sheets as required for window units.
  2. Submit additional samples, if and as directed by Architect, to show fabrication techniques, workmanship of component parts, and design of hardware and other exposed auxiliary items.

- D. Certifications: Submit certified test laboratory reports by independent laboratory substantiating performance of system. Include other supportive data as required or as necessary including AAMA certification.

#### **1.4 PRODUCT DELIVERY, STORAGE AND HANDLING**

- A. Store and handle windows, mullions, panels, hardware and all pertinent items in strict compliance with the manufacturer's instructions.
- B. Protect units adequately against damage from the elements, construction activities and other hazards before, during and after installation.

#### **1.5 WARRANTY**

- A. Manufacturer's Warrantees: Submit written warrantees from window manufacturer for the following:
  - 1. Windows: Windows furnished are certified as fully warranted against any defects in material or workmanship under normal use and service for a period of one (1) year from date of fabrication.
  - 2. Finish: The pigmented organic finishes on exposed surfaces of windows and component parts (such as panning, trim, mullions and the like) are certified as complying fully with requirements of AAMA 2603 for pigmented organic coating and fully warranted against chipping, peeling, cracking or blistering for a period of five (5) years from date of installation.
  - 3. Insulated Glass: Warranted from visual obstruction due to internal moisture for a period of ten (10) years.

#### **1.6 MAINTENANCE MATERIAL**

- A. Option for additional materials: Furnish and deliver to Owner, at the project location, extra material for maintenance/replacement as listed.
  - 1. Touch-up Paint: \_\_\_\_\_
- B. Upon delivery, obtain signed receipt from Owner's representative. Include copy of receipt with submittals required at time of Substantial Completion.

### **PART 2 - PRODUCTS**

#### **2.1 MANUFACTURERS**

- A. Basis of Design: Series S6800 Thermal Strut Projected window, as manufactured by Graham Architectural Products, York, PA.
- B. Acceptable substitute products:
  - 1. Waussa Window Co.
  - 2. EFCO
- C. Thermal Barrier:
  - 1. Provides a continuous uninterrupted thermal barrier around the entire perimeter of the frame and all sash and not be bridged by any metal conductors at any point.
  - 2. The thermal barrier shall be I-Strut<sup>®</sup> by Technoform or equal, consisting of two glass reinforced polyamide nylon struts, mechanically crimped in the exterior and interior extrusions.
  - 3. Poured and de-bridged urethane thermal barriers shall not be permitted.

- D. Pre-Bid Qualifications:
1. The manufacturer must submit qualification statement and be approved prior to bid.
  2. The manufacturer must verify that it has been engaged in the manufacturing of the product in their production facility for a period of five (5) years.
  3. Sight lines to match the base product specified.
  4. The qualified bidder must verify that the bidder has been involved with the installation of this type of product in a minimum of 5 projects of similar scope and quality.

## 2.2 MATERIALS

- A. Aluminum Extrusions: Alloy and temper recommended by window manufacturer for strength, corrosion resistance and application of required finish, but not less than 22,000 psi ultimate tensile strength, a yield of 16,000 psi. Comply with ASTM B 221.
- B. Fasteners: Aluminum, stainless steel, or other materials warranted by manufacturer to be non-corrosive and compatible with aluminum window members, trim, hardware, anchors and other components of window units.
1. Do not use exposed fasteners on exterior except where unavoidable for application of hardware. Match finish of adjoining metal.
  2. Provide non-magnetic stainless steel, tamper-proof screws for exposed fasteners, where required, or special tamper-proof fasteners.
  3. Locate fasteners so as not to disturb the thermal barrier construction of windows.
- C. Anchors, Clips And Window Accessories: Depending on strength and corrosion-inhibiting requirements, fabricate units of aluminum, non-magnetic stainless steel or hot-dip zinc coated steel or iron complying with ASTM A 123.
- D. Compression Glazing Strips And Weatherstripping: At manufacturer's option, provide neoprene gaskets complying with ASTM D 2000 Designation 2BC415 to 3BC415, PVC gaskets complying with ASTM D2287, or expanded neoprene gaskets complying with ASTM C 509, Grade 4.
- E. Sealant:
1. Unless otherwise indicated for sealants required within fabricated window units, provide elastomeric type as recommended by window manufacturer for joint size and movement, to remain permanently elastic, non-shrinking and non-migrating. Provide product complying with AAMA Specification 803 and 808.
  2. Refer to Division 7 for perimeter sealants between window units and surrounding construction.

## 2.3 WINDOW TYPES (OPERATION)

- A. General: Except as otherwise indicated, provide window units complying with requirements of AAMA Classification "AW" grade windows. Windows for this project will be rated a minimum of AP-AW95 for full size test units per AAMA/NWWDA 101/I.S.2 to withstand a design pressure of 95 psf minimum.
- B. Projected Aluminum Windows (AP):
1. Frame Depth: Minimum 3.500 inches.
  2. Vent Depth: Minimum 3.500 inches.
  3. Wall Thickness: Nominal 0.125 frame and vent.
- C. Accomplish combinations of operable units by providing continuous jamb construction. Splicing is not permitted along entire length of the jamb. Vertical sight lines at all fixed to operable horizontals shall not exceed 3.937 inches.

## 2.4 FABRICATION AND ACCESSORIES

- A. General: Provide manufacturer's standard fabrication and accessories that comply with specifications. Include complete system for assembly of components and anchorage of window units and provide complete pre-glazing at the factory.
- B. Window Material:
1. Windows: Aluminum.
  2. Secondary Members (friction tabs, shoes, weatherstripping guides, etc.): Aluminum or a material compatible with aluminum.
  3. Main Frame and Vent: Nominal thickness of not less than 0.125 inches, except for fin trim either integral or applied. The vent and frame must present a flush interior and exterior surface. Overlap or extensions of ventilators beyond main frame will not be acceptable.
  4. Vent Members: Not less than 3.500 inches in depth.
- C. Master Frame: Not less than 3.500 inches in depth.
- D. Hardware:
1. Material: Aluminum, stainless steel or other non-corrosive materials compatible with aluminum for hardware having component parts that are exposed. Cadmium or zinc-plated steel where used must be in accordance with ASTM Specification B 766 or B 633.
  2. Primary Locking Devices: Cast in white bronze cam action locks. "Hand" cam lock handles on projected units to facilitate operations.
- E. Ventilators:
1. Butt Hinged Ventilators: Two butt hinges with stainless steel pins. Hinges to match the color of windows or of non-rusting and non-magnetic materials.
  2. Limit Hardware:
    - a. Use limit operating stay arms (Anderburg 88SS) or equal.
- F. Thermal Barrier: Provides a continuous uninterrupted dual polyimide strip thermal barrier around the entire perimeter of the frame and all sash and shall not be bridged by any metal conductors at any point.
- G. Construction:
1. Assembly: Miter and seal vents with non-hardening mastic, forming a watertight joint. Structurally reinforce corners of the vent with aluminum gusset blocks and chemically weld, followed by crimping. Mechanical fasteners are not allowed.
  2. Cope corners of the frame with two screws per corner into screw ports and back seal, forming a watertight joint.
- H. Mullions - Other structural members: When mullion units occur, whether they are joined by integral mullions, independent mullions or by a combination of frame members, the resulting members must be capable of withstanding the load outlined under Uniform Load specified load requirements, without deflecting more than 1/175th of its span. When independent or integral mullions are used to join windows, the mullions shall contain a thermal barrier as specified. Evidence of compliance may be by mathematical calculations.
- I. Glazing:
1. Pre-glaze all units at the factory with insulated glass as follows:
    - a. Typical Insulated Glass: Overall thickness of 1 inch with two lites of 1/4 inch as size and loading require.
      - (1) Primary Sealant: Polyisobutylene applied to the edge of the spacer.

- (2) Secondary Sealant: Silicone.
- (3) Air Spacer: Continuous metal spacer with formed corners and an in-line connector, containing desiccant.

- J. Weather Protection:
  - 1. Provide means of drainage for water and condensation that may accumulate in members of window units by use of two weeps per mainframe member.
  - 2. Do not position other material in such a manner as to obstruct the weep holes function.

## **2.5 CASING COVER SYSTEM: (Panning, Trims, Receptors, Mullions, Sills etc.)**

- A. Exterior Casing Covers (Panning, Receptors, Subsills, Sills): Provide extruded prime alloy aluminum 6063-T5 no less than nominal 0.078 inch wall thickness. Casing covers of less than 2 inches in depth from the window frame may be of 0.062 inch wall thickness. Provide aluminum sections of one piece designed to lock around the entire window frame for a weathertight connection.
  - 1. Secure the casing cover section at the corners with stainless steel screws in integral screw ports with the joints back sealed using a compatible sealant.
  - 2. Exposed screws, fasteners or pop rivets are not acceptable on the exterior of the casing cover system.
- B. Exterior mullion covers: Extruded aluminum shape to provide rigidity, no less than nominal 0.062 inch wall thickness. Seal against the casing cover sections with continuous bulbous vinyl weatherstrip interlocked within the mullion cover.
- C. Interior trim:
  - 1. Interior Trim, Closures and Angles: As detailed, of extruded shapes no less than 0.062 inch nominal wall thickness.
  - 2. Snap Trim: Apply in full length without splices and attach with clips spaced no more than 18 inches on center. Clips shall be no less than 3 inches long. No exposed screws will be allowed on interior trim.

## **2.6 ALUMINUM WINDOW FINISHES**

- A. Finish Options
  - 1. Provide manufacturer's standard acrylic or polyester, baked-on, electrostatically applied enamel coating of manufacturer's standard color as selected by the Architect, applied over manufacturer's standard substrate preparation including cleaning, degreasing, and chromate conversion coating.
  - 2. Finish shall meet or exceed AAMA 2603 (formerly AAMA 603).
    - a. Color: As selected by architect from manufacturer's standard color selection.
  - 3.

## **PART 3 - EXECUTION**

### **3.1 PREPARATION**

- A. Perform operations as necessary to prepare openings for proper installation and operation of new retrofit units or new construction units.
- B. Verify openings are in accordance with shop drawings and Architects Drawings.

### **3.2 INSTALLATION**

- A. Comply with manufacturer's specifications and recommendations for installation of window units, hardware, operators and other components of work. In no case shall attachment to structure or to components of the window system be through or affect the thermal barriers of the window units.
- B. Set units plumb, level and true to line, without warp or rack of frames or sash. Anchor securely in place. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action.
- C. Wedge fiberglass insulation between frames of new windows and construction to remain, or between frames and new receptor as applicable. Compress fiberglass to no less than 50 percent of original thickness.
- D. Set sill members and other members in bed of compound as shown, or with joint fillers or gaskets as shown, to provide weathertight construction. Seal units following installation and as required to provide weathertight system.

### **3.3 ADJUST AND CLEAN**

- A. Adjust operating vent and hardware to provide tight fit at contact points and at weatherstripping, for smooth operation and weathertight closure.
- B. Clean aluminum surfaces promptly after installation of windows, exercising care to avoid damage to protective coatings and finishes. Remove excess glazing and sealant compounds, dirt, and other substances. Lubricate hardware and moving parts.
- C. Clean glass promptly after installation of windows. Remove glazing and sealant compound, dirt and other substances.
- D. Comply with all applicable laws, rules and regulations.

### **3.4 PROTECTION**

- A. Initiate all protection and other precautions required to ensure that window units will be without damage or deterioration (other than normal weathering) at time of acceptance.
- B. Send to Architect, with copy to Owner, written recommendations for maintenance and protection of windows following Substantial Completion of Window Contract.

**END OF SECTION**

**PART 1 - GENERAL****1.01 DESCRIPTION OF WORK:**

- A. Work under this section consists of furnishing and installing hardware specified herein and noted on drawings for a complete and operational system, including any electrified hardware components, systems, and/or controls.
- B. Items include, but are not limited to, the following:
1. Hinges - pivots
  2. Flush bolts
  3. Exit devices
  4. Lockset and cylinders
  5. Push plates - pulls
  6. Coordinators
  7. Closers
  8. Kick, mop, and protection plates
  9. Stops, wall bumpers and overhead controls
  10. Thresholds, gasketing and door bottoms
  11. Silencers
  12. Misc. trim and accessories

**1.02 RELATED DOCUMENTS**, drawings and general provisions of the contract, including general and supplementary conditions and Division 1 specification section, apply to this section.

**1.03 RELATED WORK SPECIFIED ELSEWHERE** that should be examined for its effect upon this section:

- A. Section 08110 - Hollow metal doors and frames

**1.04 REFERENCES SPECIFIED** in this section subject to compliance as directed.

- A. NFPA-101-1991 - Life safety Code

**1.05 SUBMITTALS:**

- A. **HARDWARE SCHEDULES:** Submit seven (7) copies each to the Contractor/Architect of the Finish Hardware Schedule. Schedule shall be in the vertical format listing each door opening, including the handing of the opening, door sizes, materials of door and frame, any light or louver openings, degree of opening, all hardware scheduled for the opening and the finish of hardware. Include cut/catalog sheets and any required special mounting instructions with the hardware schedule. Supply the contractor with schedules within two (2) weeks from the date the purchase order is received.
- B. **CERTIFICATE OF COMPLIANCE:** Submit any information necessary to indicate compliance to any or all of these specifications as required.
- C. **CONTRACT SHALL** provide written verification that all hardware supplied for this project meets all of the requirements of this specification.
- D. **SUBMIT** any samples necessary as required by Architect.

- E. TEMPLATES for Finish Hardware items shall be sent to the related door and frame suppliers within three (3) working days of approved schedule receipt.
- F. CLOSER CERTIFICATION: The Contractor shall furnish a certificate executed by a representative of the door closer manufacturer that all closers have been inspected and adjusted, are operating as designed, and have been installed in accordance with the manufacturers instructions.

**1.07 DELIVERY, STORAGE AND HANDLING:**

A. PACKING:

- 1. Furnish all hardware with each unit clearly marked or numbered in accordance with the hardware schedule.
- 2. Pack each item complete with all necessary parts and fasteners.
- 3. Properly wrap and cushion each item to prevent scratches during delivery and storage.

- B. DELIVERIES: Hardware supplier shall stockpile all items in advance to ensure their availability, and make all necessary deliveries in a timely manner to guarantee orderly progress of the total work. Drop shipments from the manufacturer to the jobsite will not be allowed.

C. STORAGE:

- 1. Contractor shall supply a separate, secure, dry storage area sufficient in which to store, protect and organize finish hardware for this project.
- 2. Immediately upon delivery, all items are to be checked by the contractor, acknowledging their arrival. Any shortages or discrepancies shall be notified at this time, and the supplier notified immediately.
- 3. Hardware supplier shall assist in setting up jobsite hardware storage, organizing items so they may be located easily when needed for installation.

- 1.08 SEQUENCING AND SCHEDULING:** Any part if the Finish Hardware required by the frame or door manufacturer or other suppliers that is needed in order to produce doors or frames, such as cover boxes for electrical items included with the hardware, shall be sent to this suppliers in a timely manner so as to not interrupt job progress.

**1.09 WARRANTY:**

- A. All finish hardware, except for closer, shall be supplied with one (1) year warranty against defects in materials and workmanship commencing with date of substantial completion.
- B. Door closers shall carry a ten (10) year warranty.

**PART 2 - PRODUCTS**

- 2.01 FASTENERS:** Furnish all necessary screws, bolts other fasteners of suitable size and type to anchor the hardware in position for a long life under hard use. All closers and exit devices on labeled wood door shall be through-bolted, if required by the manufacturer. All thresholds shall be fastened with

machine screws and anchors. Design of all fasteners shall harmonize with the hardware as to material and finish.

**2.02 ENVIRONMENTAL CONCERN FOR PACKAGING:** The hardware shipped to the jobsite shall be packaged in biodegradable packs, such as paper or cardboard boxes and wrapping. If non-biodegradable packaging is utilized, such as plastic or styrofoam, then the contractor will responsible for their disposal.

**2.03 HINGES:**

**A. GENERAL**

- 1. Unless specified otherwise, provide five-knuckle, button tip, full mortise, template type hinges with non-rising loose pins.
- 2. Furnish three (3) hinges up to ninety inches high and one (1) additional hinge for every thirty inches thereafter.
- 3. Where required to clear trim, provide hinges of sufficient throw.
- 4. Provide 4 ½ x 4 ½ hinges for door sizes to 36".
- 5. At labeled doors, provide steel or stainless steel hinges.

**B. EXTERIOR DOOR HINGES:** Provide out-swing door hinges of solid bronze or stainless steel with non-removable pins.

**C. ACCEPTABLE MANUFACTURERS:**

<u>Boomer</u>	<u>Hager</u>	<u>McKinney</u>	<u>Stanley</u>
BB5000	BB1279	TA2714	FBB179
BB5001	BB1191	TA2314	FBB191
BB5004	BB1168	T4A3786	FBB168
BB5005	BB1199	T43386 F	BB199
4310	1250	1502	2060R

**D. CONTINUOUS GEAR HINGES-ACCEPTABLE MANUFACTURERS:**

<u>Select</u>	<u>Hager</u>	<u>Pemko</u>
SL24A 7	80-224	CFM
SL24A-HD	780-224HD	CFM-MD
SL21A-HD	780-210HD	CFS-HD

**2.04 LOCKS AND LOCK TRIM:**

- A. All locksets, latches and trim shall be of one manufacturer. Locksets shall be manufactured by Best and shall match the City of Carrollton standard keying system.
- B. Provide wrought-box strikes and curved lip ASA strikes with proper lip length to protect trim of the frame, but not to project more than 1/8 inch beyond frame trim or the inactive leaf of a pair of doors.
- C. All trim to be cast or forged.

**D. ACCEPTABLE MANUFACTURERS:**

1. Best Manufacturing – (As per City of Carrollton standard)

**E. LOCK FUNCTIONS**

1. As scheduled.

**2.05 KEYING:**

A. All locks and cylinders shall be furnished keyed to a new master key system. To ensure that the Owner's requirements are satisfied, a meeting shall be held with the Owner, Architect and Hardware Supplier to finalize keying schedule.

B. All locks and cylinders shall be construction master-keyed.

C. Furnish the following:

1. Three (3)-change keys per KD set.
2. Six (6) keys per KA set.
3. Six (6) master keys per each set furnished.
4. Six (6)-construction master keys.
  - a. During the construction, Contractor shall be responsible for issuing construction master keys to authorized personnel and the return of same keys.
  - b. Permanent keys will be sent directly to the Owner by the Hardware Supplier at the completion of the job. This delivery shall be evidenced by a receipt signed by the Owner.
  - c. All cylinders and keys shall be properly tagged to indicate the intended location and the enable the Owner, with a minimum of effort, to establish his key control system.

**2.06 DOOR CLOSERS:**

A. All door closers shall be heavy-duty, surface-mounted, hydraulics type, with a high-strength cast case, and full rack and pinion construction.

B. Provide heavy-duty EDA type arms at out-swing/parallel arm applications.

C. ACCEPTABLE MANUFACTURERS:

<u>LCN</u>	<u>Sargent</u>
4041	1251
4041-EDA	1251-PED
4041-CUSH	350-PS
4041-H-CUSH	350-PSH

**2.08 DOOR STOPS AND HOLDERS:**

A. Place doorstops in such a position that they permit maximum door swing, but do not present a hazard of obstruction.

B. ACCEPTABLE MANUFACTURERS:

1. Floor and wall stops:

<u>NT Quality</u>	<u>Hager</u>	<u>HB Ives</u>
118ES	257F	441
119ES	252F	442
141ES	326W	495
W307TB	237W	407.5

2. Overhead stops and holders:

- a. Sargent - 1540 Series (Int) - 590 Series (Ext)
- b. Glynn-Johnson - 450 Series (Int) - 900 Series (Ext)
- c. Rixson - 55 Series (Int) - 9 Series (Ext)

**2.09 BOLTS AND MISC. HARDWARE:**

A. ACCEPTABLE MANUFACTURERS:

<u>N.T. Quality</u>	<u>Hager</u>	<u>HB Ives</u>	<u>Rockwood</u>
204	279D	054	630
1225	280X	489/487	451
1356	283D	358	557
1358	282D	458	555

**2.10 THRESHOLDS AND GASKETING:**

A. ACCEPTABLE MANUFACTURERS:

<u>Reese</u>	<u>Hager</u>	<u>Pemko</u>
S405A	413S	171A
323C	750SN	315CN
	726	S44D

**2.11 FINISHES: (As Shown)**

A. Hinges

- 1. Exterior - 630
- 2. Interior - 626, or 652

B. Locks, exit devices, door trim, stops - 626 or 630.

C. Closers - 689

**2.12 PROPRIETARY PRODUCTS:** References to specific proprietary products are used to establish minimum standards of utility and quality. There is no intent in excluding equivalent products. Refer to Section 01630 for Prior Approval guidelines and forms.

**2.13 OWNERS STOCK:** At the completion of the project, supply to the Owner the following:

- 1. One complete bitting list of keys.
- 2. One set of instruction sheets for each item furnished.
- 3. One each of any non-standard tool for installation of each item furnished.

**PART 3 - EXECUTION**

**3.01 INSTALLATION OF FINISH HARDWARE:**

- A. Hardware shall be installed by experienced finish carpenters only. Install strictly according to the manufacturers installation instructions.
- B. Check hardware against the approved hardware schedule upon delivery. Store the hardware to protect against loss and damage.
- C. Hardware shall be completely fitted before the final coat of paint or other finish is applied, and then removed for the final coat. Permanently install the hardware after finishing operations are complete and dry. Protect hardware from scratching or other damage, adjust hardware, and turn over to the Owner in perfect operating condition. Tag keys and turn over to the Owner at the time of acceptance of the project. Upon completion of the installation, the Contractor shall, as a condition of its' acceptance, deliver to the Architect a report stating that the Contractors inspection was made, that all recommended adjustments have been completed, and that all Finish Hardware furnished under this section has been installed and is in optimum working condition.

**3.03 HARDWARE SCHEDULE**

- A. The following schedule is furnished for whatever assistance it may afford the contractor; do not consider it as entirely inclusive. Should any particular door or item be omitted in any scheduled hardware heading, provide door or item with hardware same as required for similar purposes. Hardware supplier is responsible for handing and sizing all products as listed in the hardware heading. Quantities listed are for each pair of doors or for each single door.
- B. Manufacturer's Abbreviations:
  - 1. BE – Best Manufacturing
  - 2. MC – McKinney
  - 3. SA - Sargent

**HDWE. SET 1**

SINGLE DOORS 100A, 101A, 102A

EACH DOOR TO HAVE:

3 Hinges.....	TA2714 4 ½ x 4 ½.....	26D.....	SA
1 Lockset.....	70 8204 LNL.....	26D.....	SA
1 Cylinder.....	Best (As Required).....	26D.....	BE
1 Kickplate.....	KP50 7" x 2" LDW.....	US32D.....	MC
1 Closer/Stop.....	351 CPS.....	EN.....	SA
2 Door Silencers.....	S1M.....		MC

**HDWE. SET 2**

SINGLE DOORS 100B, 100C, 100D, 100E, 100F, 101B, 101C

EACH DOOR TO HAVE:

1 Continuous Hinge.....	MCK-25HD x LAR.....	Clear.....	MC
1 Privacy Set.....	LB 8265 LNL.....	26D.....	SA
1 Door Stop.....	WS01/DS02 (As Required).....	US32D.....	MC

END OF SECTION

**PART 1 – GENERAL**

**1.01 SUMMARY:**

- A. Section Includes:  
1. Tempered Glass

**1.02 QUALITY ASSURANCE:**

- A. Prime Glass Manufacturer: One of the following for each type of glass:  
Guardian Industries  
Hordis Brothers  
PPG Industries
- B. Applicable standards:  
1. American National Standards Institute (ANSI), "Safety Performance Standards and Methods of Tests for Safety Glazing Materials used in Buildings," Z97.1.  
2. American Society for Testing and Materials (ASTM).  
3. Consumer Product Safety Commission (CPSC), "Safety Standard for Architectural Glazing Materials." 16-CFR, Part 1201.  
4. Flat Glass Marketing Association (FGMA), "Glazing Manual."  
5. Underwriters Laboratories, Inc. (UL).

**1.03 SUBMITTALS:**

- A. Product Data: Technical data, installation and maintenance instructions for each type of glass.

**PART 2 - PRODUCTS**

**2.01 GLASS PRODUCTS:**

- A. Tempered Glass: Glazing quality, fully tempered float glass complying with CPSC 16-CFR, Part 1201, Category II.  
Color: Clear.  
Thickness: 1/4 inch.

**2.02 GLAZING COMPONENTS:**

- A. Vinyl Foam Glazing Tape: Closed cell, flexible, self-adhesive, non-extruding, polyvinyl chloride foam shim tape, recommended by manufacturer for providing proper clearance for sealant at wet glazed installations.
- B. Setting Blocks: Neoprene or EPDM, 70-90 durometer hardness, with proven compatibility with sealants used.
- C. Sealant: Elastomeric silicone sealant complying with FS TT-S-001543, Class A, non-sag. Provide acid type recommended by manufacturer where only nonporous bond surfaces are contacted; provide nonacid type recommended by manufacturer where one or more porous bond surfaces are contacted. Match all exposed sealant color with frame color. Select sealant for compatibility with other materials.

**PART 3 - EXECUTION**

**3.01 STANDARDS AND PERFORMANCE:**

- A. Watertight and airtight installation of each glass product is required. Each installation must withstand normal temperature changes, wind loading, impact loading (for operating sash and doors), without failure including loss or breakage of glass, failure of sealants or gaskets to remain watertight and airtight, deterioration of glazing materials and other defects in the work.
- B. Protect glass from edge damage during handling and installation, and subsequent operation of glazed components of the work. During installation, discard units with significant edge damage or other imperfections.
- C. Glazing channel dimensions as shown are intended to provide for necessary bite on glass, minimum edge clearance, and adequate sealant thicknesses, with reasonable tolerances. Adjust as required by job conditions at time of installation.
- D. Comply with combined recommendations and technical reports by manufacturers of glass and glazing products as used in each glazing channel, and with recommendations of Flat Glass Marketing Association "Glazing Manual", except where more stringent requirements are indicated.

**3.02 PREPARATION FOR GLAZING:**

Clean all glazing channels and other framing members to receive glass immediately before glazing. Remove coatings which are not firmly bonded to substrate.

**3.03 GLAZING:**

- A. Install setting blocks of proper size in sill rabbet, located 1/4th of glass width from each corner.
- B. Set glass in each series with uniformity of pattern, draw, bow and similar characteristics.
- C. Steel Frames with Loose Stops:
  - 1. Install glass with glazing tape and sealant.
  - 2. Force sealants into channel to eliminate voids and to ensure complete "wetting" or bond of sealant to glass and channel surfaces.
  - 3. Tool exposed surfaces of sealant to provide a substantial "wash" away from glass.
  - 4. Clean and trim excess glazing materials from glass stops and frames.

**3.04 PROTECTION AND CLEANING:**

- A. Protect exterior glass from breakage immediately upon installation, by use of crossed streamers attached to framing and held away from glass. Do not apply markers to surfaces of glass. Remove nonpermanent labels and clean surfaces.
- B. Remove and replace glass which is broken, chipped, cracked, abraded or damaged in other ways during construction period, including natural causes, accidents and vandalism.
- C. Wash and polish glass on both faces.

**END OF SECTION**

**PART 1 - GENERAL**

**1.01 SUMMARY:**

- A. Section Includes:
  - 1. Gypsum board.
  - 2. Accessories.

**1.02 DELIVERY, STORAGE AND HANDLING:**

- A. Deliver materials in original packages, containers or bundles bearing brand name and identification of manufacturer or supplier.
- B. Store materials inside under cover in manner to keep them dry, protected from freezing and damage by construction traffic or other causes. Stack gypsum boards flat to prevent sagging.

**1.03 FIELD CONDITIONS:**

- A. During cold weather maintain continuous minimum working temperature of 55 deg. F for 24 hours before, during and after installation of gypsum drywall assemblies.
- B. Provide adequate ventilation.

**PART 2 - PRODUCTS**

- 2.01 ACCEPTABLE MANUFACTURERS:** Subject to compliance with requirements, provide products of one of the following:  
Georgia-Pacific Corp.  
Gold Bond Building Products Div.  
United States Gypsum Co.  
National Gypsum Co.

- 2.02 GYPSUM BOARD:** Provide maximum lengths available to minimize number of joints.

- A. Moisture Resistant: ASTM C36, WR Board, Tapered edge

- 2.03 TRIM ACCESSORIES:** Provide manufacturer's standard edge, corner and control joint beaded trim for concealment of flanges in joint compound.

**2.04 JOINT TREATMENT MATERIALS:**

- A. Joint Tape: ASTM C475 perforated type.
- B. Joint Compound: ASTM C475 Ready-mixed vinyl-type for interior use.

**PART 3 - EXECUTION**

**3.01 GYPSUM BOARD INSTALLATION:**

- A. Gypsum Board Application and Finishing Standards: ASTM C 840 and GA 216.
- B. Install boards to avoid end-butts joints wherever possible.
- C. Install exposed gypsum board with face side out. Do not install imperfect, damaged or damp boards. Butt boards together for a light contact at edges and ends with not more than 1/16" open space between boards. Do not force into place.
- D. Position boards so that like edges abut, tapered edges against tapered edges and mill-cut or field-cut ends against mill-cut or field cut ends. Do not place tapered edges against cut edges or ends.
- E. Attach gypsum board to supplementary framing and blocking provided for additional support at openings and cutouts.
- F. Space fasteners in gypsum boards in accordance with referenced standards and manufacturer's recommendations, except as otherwise indicated.

**3.02 DRYWALL TRIM INSTALLATION:** Where feasible, use the same fasteners to anchor trim accessory flanges as required to fasten gypsum board to the supports. Otherwise, fasten flanges by nailing or stapling in accordance with manufacturer's instructions and recommendations.

- A. Install metal corner beads at external corners of drywall work.
- B. Install metal edge trim whenever edge of gypsum board would otherwise be exposed or semi-exposed. Provide type with face flange to receive joint compound. Leave 1/4" open joint, to receive sealant or caulk where boards abut other work or where used to form control joints at inside vertical and horizontal corners.
- C. Install metal control joints where boards abut other work, expansion or control joints occur in base wall construction or building structure and where surface area exceeds maximum control joint spacing:
  - 1. Maximum Control Joint Spacing:
    - a. Interior Partitions: 30 feet, length.
  - 2. Use metal control joint or dege trim to form control joints. Provide separate framing support for each control joint flange or edge and do not attach framing on one side of control joint.

**3.03 DRYWALL FINISHING:** Apply treatment at gypsum board joints, trim flanges, fastener heads and surface defects. Pre-fill all open joints.

- A. Apply joint tape at joints between gypsum boards, except where trim accessories are used.
- B. Apply joint compound in 3 coats (not including pre-fill) and sand after last 2 coats.
- C. Partial Finishing: Apply joint compound in 1 coat (not including pre-fill) and omit sanding at drywall construction concealed above ceilings.

END OF SECTION

**PART 1 - GENERAL****1.01 SUMMARY:**

- A. Section Includes: Field-applied painting and finishing of exposed interior and exterior work except for but not limited to the following:
1. Pre-finished items
  2. Operating Parts
  3. Permanent labels

**1.02 SUBMITTALS:**

- A. Material List: Furnish written list of paint materials showing manufacturer, product names and numbers to verify compliance with required product quality.
- B. Color Samples: Furnish 1 set of paint manufacturers' standard colors for selection by Architect.
- C. Mock up: The architect may require a test mock up be painted to determine the correct color and texture of finish.

**1.03 JOB CONDITIONS:**

- A. Apply paints only when temperature of surfaces to be painted and surrounding air temperatures are within the temperature range permitted by paint manufacturer's printed instructions.
- B. Do not apply paint when relative humidity exceeds 85%; or to damp or wet surfaces; unless otherwise permitted by paint manufacturers' printed instructions.

**1.04 SCHEDULING:**

- A. Coordinate work to paint building structure in areas scheduled for painted exposed structure, before installation of pre-finished products. Paint surfaces to remain exposed, to view, in completed building.

**PART 2 - PRODUCTS**

- 2.01 ACCEPTABLE MANUFACTURERS:** This specification is based on Sherwin Williams paint to establish required product quality. Equivalent products of other listed manufacturers are acceptable subject to quality compliance. Provide products of one of the following:

- A. Benjamin Moore
- B. Devoe
- C. Duron
- D. Pittsburgh
- E. Sherwin-Williams

**2.02 EXTERIOR PAINT SCHEDULE:**

- A. Shop-Primed Steel:
1. Semi-Gloss Finish: (handrails) Primer not required on shop-primed items except for touch-up.
    - a. Primer: DTM Acrylic Primer/Finish
    - b. Finish: Two Coats DTM Acrylic Semi-Gloss (B66 200)
- B. Metal:
1. Semi-Gloss Finish:
    - a. Primer: DTM Acrylic Primer/Finish
    - b. Finish: Two Coats DTM Acrylic Semi-Gloss (B66 200)
- C. Parking Stripes:
1. Atlas acrylic traffic paint.
    - a. Color: YELLOW.
  2. Apply traffic paint for striping and other markings with mechanical equipment to produce uniform straight edges. Apply at manufacturer's recommended rates to provide a 15-mil minimum wet film thickness.

**2.03 INTERIOR PAINT SCHEDULE:**

- A. Hollow Metal:
  - 1. Semi-Gloss Paint Finish: (trim)
    - a. Primer: DTM Acrylic Primer/Finish. Primer not required on shop-primed items, except for touch-ups.
    - b. Finish: Two Coats DTM Acrylic Semi-Gloss (B66 200)
- B. Gypsum Board:
  - 1. Eg-Shel finish: Prime exposed gypsum with ProMar Latex Primer/Finish.
    - a. Primer: Prep Rite 200 Latex Primer
    - b. Finish: Two Coats ProMar Latex Eg-Shel (B20-200)
- C. Concrete Masonry, Cast-in-Place Concrete:
  - 1. Semi-Gloss Finish:
    - a. Primer: One coat Block fill (B25W25)
    - b. Finish: Two coats DTM Acrylic Semi-Gloss (B66 200)
- D. Exposed Concrete Slab
  - 1. Two coats H&C Clear 23 Sealer

**PART 3 - EXECUTION****3.01 INSPECTION**

- A. Applicator must examine areas and conditions under which painting work is to be applied and notify Contractor of conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Applicator.
- B. Starting of painting work will be construed as Applicator's acceptance of surfaces and conditions within any particular area.
- C. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint film.

**3.02 SURFACE PREPARATION:**

- A. General: Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified, for each particular substrate condition.
  - 1. Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish-painted, or provide surface-applied protection prior to surface preparation and painting operations. Remove, if necessary, for complete painting of items and adjacent surfaces. Following completion of painting of each space or area, reinstall removed items.
  - 2. Clean surfaces to be painted before applying paint or surface treatments. Program cleaning prior to painting so that cleaning process will not fall onto wet or newly-painted surfaces.
- B. Wood: Clean wood surfaces to be sealed or painted of dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sandpaper smooth those finished surfaces exposed to view, and dust off.
- C. Gypsum board: Clean surfaces to be sealed or painted of dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sandpaper smooth those finished surfaces exposed to view, and dust off.
- D. Galvanized ductwork: Clean surfaces to be painted of dirt, oil, or other foreign substances with, solvent. After cleaning etch surface to accept paint.

**3.03 MATERIALS PREPARATION:**

- A. Mix and prepare painting materials in accordance with manufacturer's directions.
- B. Store materials not in actual use in tightly covered containers. Maintain containers used in storage, mixing and application of paint in a clean condition, free of foreign materials and residue.
- C. Stir materials before application to produce a mixture of uniform density, and stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.

**3.04 APPLICATION:**

- A. General: Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.
  - 1. Apply minimum 1 coat primer, filler or stain and 2 finish coats, to all surfaces. Apply additional coats when undercoats, stains or other conditions show through final coat of paint, until paint film is of uniform finish, color and appearance.
  - 2. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-spectra black paint.
  - 3. Sand lightly between each succeeding enamel and varnish coat.
  - 4. Omit first coat (primer) on metal surfaces that have been shop-primed and touch-up painted, unless otherwise indicated.
  - 5. Apply water repellent to simulated stone in two coats using the flood method.

**3.05 CLEAN-UP AND PROTECTION:**

- A. Clean-Up: During progress of work, remove from site discarded paint materials, rubbish, cans and rags at end of each workday.
- B. Upon completion of painting work, clean window glass and other paint-spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch otherwise damage finished surfaces.
- C. Protection: Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to the Architect.
  - 1. Provide "Wet Paint" signs as required to protect newly-painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.
  - 2. At the completion of work of other trades, touch-up and restore all damaged or defaced surfaces.

END OF SECTION

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. Section Includes:  
1. Continuous Soffit Vents.

**1.02 SUBMITTALS**

- A. Product Data: Manufacturer's specifications and descriptive literature.

**PART 2 - PRODUCTS**

**2.01 CONTINUOUS SOFFIT VENTS**

- A. Specified Product: Air Vent Inc.; "Strip Vent", Series SV 201, slotted unit. Use in exterior wall soffit for continuous gravity ventilation of attic.  
1. Characteristics:  
a. Size: 2" wide by 3/8" deep by 8'-0" long, with 3/8" wide mounting flanges on long edges.  
b. Material: .019 inch aluminum.  
c. Free Area: 9 square inches per linear foot.  
2. Color: To be selected by architect from manufacturer's standard colors.
- B. Acceptable Products:  
1. Browning Metal Products Co., Inc.; "Continuous Undereave Vents", EVA 8L.  
2. Leslie Locke; LSV-8 or SV-8

**PART 3 - NOT USED**

END OF SECTION

**PART 1 - GENERAL**

**1.01 SUMMARY:**

- A. Section Includes:
  - 1. Cast Plaques
  - 2. Screen Print Handicapped Toilet Room Signs
- B. Related Sections: 01505, Temporary Facilities (job sign).

**1.02 SUBMITTALS:**

- A. Product Data: Manufacturers specifications and descriptive literature for each specified product, including color charts for finished materials.
- B. Shop Drawings:
  - 1. Plan layout with each unit identified by manufacturers number.
  - 2. Dimensioned plans, elevations, construction details and special conditions.
  - 3. Blue print rubbing for cast plaque.

**PART 2 - PRODUCTS**

**2.01 MANUFACTURERS:**

- A. Cast Plaque:
  - 1. Specified plaque is based on products of ANDCO INDUSTRIES CORPORATION, Greensboro, NC, 1-404-279-0764, to establish project requirements.
  - 2. Acceptable substitute products, subject to compliance with specified requirements, may be manufactured by: BFG, LEEDS, MATTHEWS, MILLS, METALLIC ARTS, SOUTHWELL, A.R.K. RAMOS, KROY.
  - 3. Provide one cast plaque at location designated by owner.
- B. Screen Print Room Signs:
  - 1. Specified room signs are based on products of ANDCO INDUSTRIES CORPORATION, Greensboro, NC, 1-404-279-0764, to establish project requirements.
  - 2. Acceptable substitute products, subject to compliance with specified requirements, may be manufactured by: ARCHITECTURAL GRAPHICS, APCO, DESK and DOOR NAMEPLATE, MULTI-GRAPHICS, VOMAR, AMERICAN GRAPHICS, MOHAWK, MODE KROY, ADA SIGN SYSTEMS.

**2.02 CAST PLAQUE:**

- A. Manufactured Units: Standard cast bronze plaque with raised copy and concealed mounting lugs drilled and tapped to receive threaded stud anchors.
  - 1. Fabrication:
    - a. Size: 18" high by 24" wide.
    - b. Letters: MEDIUM RIBBON, uppercase.
    - c. Border: No.1, flat band.

- d. Background: Pebble.
- e. Mounting: Type A, concealed fastener.
- f. Copy: Comply with architects supplementary drawing to issued after contract execution.
- 2. Finish: Two coats, clear lacquer over entire plaque after background, borders and letters are finished.
  - a. Background: Oxidized to dark statuary color.
  - b. Borders and Letters: Sanded to satin texture.

**2.03 SCREEN PRINT HANDICAPPED TOILET ROOM SIGNS:**

- A. Manufactured Units: 850-8, two-ply, laminated, screen printed plaque sign with room name, gender symbol and international handicapped symbol.
  - 1. Fabrication:
    - a. Size: 6" high by length required by 3/16" thick.
    - b. Corners: 3/4-inch radius.
    - c. Lettering: As acceptable by Accessibility Guidelines in ADA and ADAAG of 1990, 1 inch uppercase raised 1/32" with Grade 2 Braille.
    - d. Mounting: VTM, 1/16-inch thick, double-sided vinyl foam tape, 2 pieces per sign.
    - e. Copy: Comply with architect's supplementary drawing to be issued after contract execution.
  - 2. Finish: Screen print ink. Color to be selected by architect after contract execution.
- B. Components:
  - 1. Top Surface: 1/16 inch, clear matte acrylic, subsurface printed with room name, gender symbol, handicapped symbol and background color.
  - 2. Base Plate: 1/8 inch, opaque acrylic.

**2.06 SCREEN PRINT SIGNS**

- A. Provide a total of two signs.

**PART 3 - EXECUTION**

**3.01 INSTALLATION:**

- A. Comply with manufacturers instructions and submittals approved by architect.
- B. Cast Plaque:
  - 1. Setting: Mark and drill anchor holes using template furnished by manufacturer.
  - 2. Fastening: Anchor with threaded studs set in anchor holes with Contech, PL400 construction adhesive.
- C. Room Signs:
  - 1. Setting:
    - a. Wall Mount: Set center of sign 5'-0" above floor and 6 inches off strike side of opening.
  - 2. Fastening: Anchor signs to wall surfaces with Contech, PL400 construction adhesive. Hold signs in place with vinyl foam tape until adhesive bond is set.

END OF SECTION

**PART 1 - GENERAL**

**1.01 SUMMARY:**

- A. Section Includes:
  - 1. Fire extinguishers
  - 2. Cabinets

**1.02 SUBMITTALS:**

- A. Product Data: Manufacturers specifications and descriptive literature for each specified product.

**PART 2 - PRODUCTS**

**2.01 MANUFACTURERS:**

- A. Specified extinguishers and cabinets are based on products of J.L. INDUSTRIES, Bloomington, MN, 612-835-6850, to establish project requirements.
- B. Acceptable substitute products, subject to compliance with specified requirements, are manufactured by:
  - 1. LARSEN'S FIRE PROTECTION AND SAFETY EQUIPMENT, Minneapolis, MN, 612-571-1181.
  - 2. POTTER-ROEMER, INC., Cerritos, CA, 213-404-3753.

**2.02 FIRE EXTINGUISHERS:**

- A. Manufactured Units: COSMIC 10E, multi-purpose dry chemical, 10 pound capacity, UL Rated 4A-60BC for Class A, B and C fires.

**2.03 CABINETS:**

- A. Recessed Units:
  - 1. Model No.: ACADEMY 1025 G 10 FX.
    - a. Door Style: Full Glass with Safety Lok
    - b. Door Glazing: Double strength with aluminum hold-down clips.
    - c. Finish: Frame and door: Clear anodized aluminum.  
Box interior: Electrostatic white epoxy.
    - d. Flat Trim: 1 1/4" wide exposed face, square edged frame, 5/16" projection.
    - e. Box: 20 gage steel, continuously welded seams, fire rated design to carry the Warnock Hersey label for 1 or 2 hour walls.

**PART 3 - EXECUTION**

**3.01 INSTALLATION:**

- A. Comply with manufacturer's instructions and submittals approved by architect.
- B. Charge, tag and date each fire extinguisher.

**END OF SECTION**

**PART 1 – GENERAL**

**1.01 DESCRIPTION:**

- A. Section Includes:
1. Toilet Tissue Dispenser
  2. Grab Bars
  3. Hand Dryers
  4. Framed Mirrors
  5. Soap Dispenser

**1.02 SUBMITTALS:**

- A. Product Data: Manufacturer's technical data and installation instructions for each toilet accessory.
- B. Warranties:
1. Mirror: Manufacturer's written 15-year replacement against silver spoilage.
  2. Dryers: Manufacturer's 5-year warranty against defective material and workmanship.
  3. Horizontal Baby Changing Station: Manufacturer's 5-year warranty against defective material and workmanship and 1-year replacement vandalism or natural disaster. Provide minimum \$30,000,000 product liability policy.

**PART 2 – PRODUCTS**

**2.01 MANUFACTURERS:**

This specification is based on A&J Washroom Accessories toilet accessories to establish required product quality. Equivalent products of other listed manufacturers are acceptable, subject to quality compliance. Provide toilet accessories by one of the following:

- A & J Washroom Accessories
- Bobrick Washroom Equipment, Inc.
- Bradley Corp.
- General Accessory Manufacturing Co.
- American Specialties
- World Dryer Corp.
- McKinney/Parker

**2.02 TOILET ACCESSORIES:**

- A. Toilet Tissue Dispenser: Model U840, stainless steel, surface mounted, dual roll.
- B. Grab Bars: UG2-A series, 1 1/4" diameter, stainless steel with peened finish. Concealed mounting with 4 setscrews.
1. Handicapped Toilets:
    - a. Back wall: Model UG2X-A36
    - b. Side wall: Model UG2X-A42
- C. Hand Dryer: Model U1521EA-120V Surface mounted Hands Free Dryer
- D. Mirrors: Size: 24" wide 36" high, Model U704-2436
- E. Soap Dispenser: Model U125, surface mounted, stainless steel, liquid type.

- F. Horizontal Baby Changing Station: Model U944, 35" wide x 21 3/4" high x 4" deep (closed) 22" deep (open) injection molded polypropylene with Microban antimicrobial additive, pneumatic cylinder, 50 pound capacity.

**PART 3 – EXECUTION**

**3.01 INSTALLATION:**

- A. Comply with manufacturer's installation instructions and product data reviewed by architect. Install units plumb and level.

**3.02 ADJUSTING AND CLEANING:**

- A. Adjust toilet accessories for proper operation and verify that mechanisms function smoothly. Replace damaged or defective items.
- B. Clean and polish exposed surfaces after removing protective coatings.

**END OF SECTION**

**Synthetic Grass  
Product Specifications**

<b>Pile Height (Tufted)</b> .....	1 3/4 inch pile height
<b>Pile Weight</b> .....	82 ounces per square yard
<b>Primary Backing</b> .....	Stabilized
<b>Secondary Backing</b> .....	Polyurethane with drainage holes as needed
<b>Face Yarn Type</b> .....	Nylon/Polyethylene
<b>Yarn Size</b> .....	4,200/8H Denier 8000/8
<b>color</b> .....	Turf Green
<b>Construction</b> .....	Broadloom Tufted
<b>Stitch Rate</b> .....	5.25/inch
<b>Tufting Gauge</b> .....	3/8"
<b>Roll Width</b> .....	15'

**2.01 MANUFACTURERS:**

This specification is based on “Coolgrass” synthetic grass as manufactured by Playon Surfaces to establish required product quality. Equivalent products of other listed manufacturers are acceptable, subject to quality compliance. Provide synthetic grass by one of the following:

- Playon Surfaces
- Synthetic Turf International
- ProGrass

**PART 3 - EXECUTION**

**3.01 INSTALLATION:** Install as per manufacturer’s written instructions.

### **Aggregate Base**

- Install the aggregate per the directions given in the Aggregate Installation Specification
- Build a base perimeter using 2x4 treated pine, set on edge. This will serve to contain the base material as well as serve as a nailer board.
- Check for consistent depth around the perimeter of the grass area. Maintain a consistent depth between the top of the stone/nailer board and the top of any perimeter border (1" for no-fill products, 2" for infill products).
- If grass is being installed over the border, then the top of the border must be level with the compacted aggregate.
- Remove any large stones that do not compact into a smooth surface
- Remove any undulations (peaks and valleys) that were created during the stone installation. The stone surface should be as flat as possible.

### **Cushion Pad (as required)**

- Check to make sure you have the correct thickness of pad for the corresponding fall height (is required)
- Lay interlocking tiles directly on stone base surface.

END OF SECTION