

# **“JIB” Property Waterfront Amenity Phase I**

---

Town of Morehead City  
706 Arendell Street  
Morehead City, North Carolina 28557

## **PROJECT MANUAL**

BIDDING REQUIREMENTS  
CONDITIONS OF THE CONTRACT FORMS &  
SPECIFICATIONS DIVISIONS 1 - 16

January 4, 2013

Plan Set # \_\_\_\_\_

**MK CHALK ARCHITECTURE, P.A.**

PO Box 622 Morehead City, North Carolina 28557 252 726-3099 [mkcarchitect@ec.rr.com](mailto:mkcarchitect@ec.rr.com)

PROJECT: "JIB" Property Waterfront Amenity Phase I

LOCATION: Town of Morehead City  
705 & 707 Shepard Street  
Morehead City, NC 28557

OWNER: Town of Morehead City  
706 Arendell Street  
Morehead City, NC 28557

BIDDING REQUIREMENTS, CONDITIONS OF THE CONTRACT, BID FORMS &  
SPECIFICATIONS DIVISIONS 1 - 16

ARCHITECT, MECHANICAL AND ELECTRICAL ENGINEER:

PRINCIPAL ARCHITECT:

MK CHALK ARCHITECTURE, PA  
[mkchalkarchitect@ec.rr.com](mailto:mkchalkarchitect@ec.rr.com)  
252-726-3099  
PO Box 622  
Morehead City, NC 28557

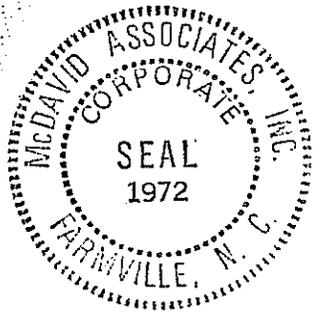


ASSOCIATE ARCHITECT:

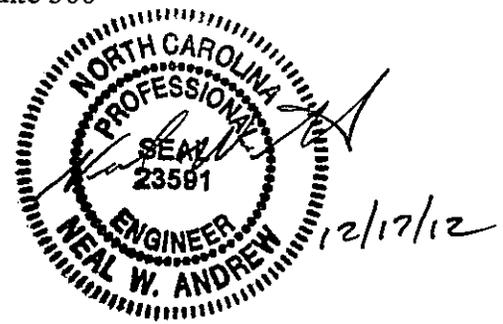
Burnette Architecture & Planning, P.A.  
105 Banks Street  
Morehead City, NC 28557



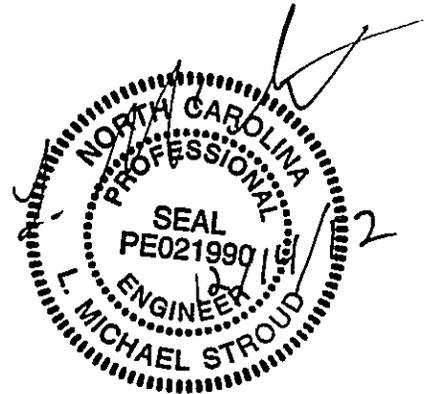
CIVIL ENGINEER & SURVEYING: McDavid Associates  
109 E. Walnut Street, PO Box 1776  
Goldsboro, NC 27566



MARINE & STRUCTURAL ENGINEER: Andrew Consulting Engineers  
3811 Peachtree Avenue, Suite 300  
Wilmington, NC 28403



MECHANICAL ELECTRICAL: Stroud Engineering, P.A.  
107 B Commerce Street  
Greenville, NC 27858



SECTION 00002  
NOTICE TO BIDDERS

Sealed proposals will be received by the Public Works Office of the Town of Morehead City at the office of Mr. David McCabe until 1:30 PM EST, Wednesday, January 30, 2013. Following 1:30 PM, sealed bids will be received until 2:00 PM at the Municipal Building, 1<sup>st</sup> Floor Conference Room, 202 South 8<sup>th</sup> Street, Morehead City, NC where they will be opened and read aloud for the furnishing of labor, material and equipment entering into the construction of the following:

The scope of work includes the construction of a public plaza (JIB Plaza), paving of a section of Shepard Street with brick pavers and planter, and an observation deck overlooking the Morehead City Channel of Bogue Sound. The public plaza includes but is not limited to brick pavers, landscaping, utility connections, and a fountain and base for the "Marlin Sculpture" to include foundations, fountain and sculpture base, structural connections for the Marlin Sculpture, fountain plumbing, electrical and control panels.

Bids will be received for a Single Prime Contract. All proposals shall be lump sum.

An open pre-bid meeting will be held for all interested bidders on Friday, January 11, 2013 at 10:00 AM in the (same as bid opening) Conference Room. Any prospective bidder not attending will not be permitted to submit a bid on this project. The meeting will address project specific questions, issues, bidding procedures and bid forms.

Complete plans, specifications and contract documents will be open for inspection at the following locations:

Town of Morehead City  
Office of Director of Public Works  
706 Arendell Street  
Morehead City, NC 28557

MK CHALK ARCHITECTURE, PA

And

Burnette Architecture & Planning, P.A.  
105 Banks Street  
Morehead City, NC 28557

Associated General Contractors (AGC)  
Carolinas Branch  
2095 Evans Street  
Greenville, NC 27834-5725

Associated General Contractors (AGC)  
3700 National Drive  
Caswell Bldg. Suite 201  
Raleigh, NC 27612

East Coast Digital Plan Room,  
210-A-East 14<sup>th</sup> Street,  
Greenville, NC 252-758-1616

Hispanic Contractors Association of the Carolinas  
Raleigh, NC

McGraw-Hill Dodge Corporation,  
North Carolina Offices

Reed Construction Data  
Eastern Regional Office  
Norcross, GA

Complete sets of documents may also be obtained by those qualified as prime bidders, upon deposit of one hundred fifty dollars (\$150.00) in cash or certified check payable to MK CHALK ARCHITECTURE, P.A., P.O. 622, Morehead City, NC 28557, 252-726-3099.

The full plan deposit will be returned to those bidders provided all documents are returned in good, usable condition within ten (10) days after the bid date.

**NOTE:** The bidder shall identify on its bid proposal the minority business participation it will use on the project (identification of Minority Business Participation form) and shall include either Affidavit **A** or Affidavit **B** as applicable. Forms and instructions are included within the Proposal Form in the bid documents. Failure to complete these forms is grounds for rejection of the bid. (GS143-128.2c, Effective 1/1/2002.)

All contractors are hereby notified that they must have proper license as required under the state laws governing their respective trades.

General contractors are notified that Chapter 87, Article 1, General Statutes of North Carolina, will be observed in receiving and awarding general contracts. General contractors submitting bids on this project must have license classification for unlimited building.

All bids shall be good and valid for a period of thirty (30) days from date of bid opening.

Each proposal shall be accompanied by a cash deposit or a certified check drawn on some bank or trust company, insured by the Federal Deposit Insurance Corporation, of an amount equal to not less than five percent (5%) of the proposal, or in lieu thereof a bidder may offer a bid bond of five percent (5%) of the bid executed by a surety company licensed under the laws of North Carolina to execute

the contract in accordance with the bid bond. Said deposit shall be retained by the owner as liquidated damages in event of failure of the successful bidder to execute the contract within ten days after the award or to give satisfactory surety as required by law.

A performance bond and payment bond will be required for one hundred percent (100%) of the contract price.

Payment will be made on the basis of ninety-five percent (95%) of monthly estimates and final payment made upon completion and acceptance of work.

No bid may be withdrawn after the scheduled closing time for the receipt of bids for a period of thirty (30) days.

The owner reserves the right to reject any or all bids and to waive informalities.

Signed:

Designer:

MK CHALK ARCHITECTURE, PA  
PO Box 622  
Morehead City, NC 28557  
252-726-3099

Owner:

Town of Morehead City  
706 Arendell Street  
Morehead City, NC 28557  
252-726-6848

TABLE OF CONTENTS  
TECHNICAL SPECIFICATIONS

**Division 0**

**BIDDING & CONTRACT REQUIREMENTS**

00000	Front Cover
00001	Cover Page
00002	Notice to Bidders
00005	Table of Contents
	AIA - A701-1997 - Instructions to Bidders
00510	Amendments to AIA - A701-1997
00700	General Conditions of the Contract for Construction
	AIA - A201-2007 - General Conditions of the Contract for Construction
00710	Amendments to AIA - A201-2007
	Notice of Award
	Notice to Proceed
00810	Supplementary General Conditions

**Division 1**

**GENERAL REQUIREMENTS**

01010	Summary of Work
01025	Unit Prices
01030	Alternate Bids
01050	Field Engineering
01200	Project Meetings
01210	Price and Payment Procedures
01340	Submittals & Substitutions
01400	Quality Control
01400A	Contractor's Statement of Responsibility
01410	Testing Laboratory Services
01500	Temporary Facilities and Controls
01620	Product Handling
01700	Project Record Documents
01710	Cleaning
01720	Project Closeout

**Division 2**

**SITE WORK**

02000	General Site Work
02060	Demolition
02110	Site Clearing
02115	Soil Erosion & Sediment Control
02200	Earthwork
02200A	Subsurface Information
02360	Concrete Piles
02517	Concrete Paving Stones
02875	Bollards and Chains

**Division 3**

03300

**CONCRETE**

Cast in Place Concrete

**Division 4**

04200

**MASONRY**

Unit Masonry

**Division 5**

**METALS**

(This Section Not Used)

**Division 6**

06100

**WOOD & PLASTICS**

Exterior Rough Carpentry

**Division 7**

07140

07160

07951

**THERMAL AND MOISTURE PROTECTION**

Fluid Applied Waterproofing

Cementitious Waterproofing

Sealants and Caulking

**Division 8**

**DOORS AND WINDOWS**

(This Section Not Used)

**Division 9**

09200

09310

09750

09986

**FINISHES**

Fiber Reinforced Plaster

Porcelain and Glass Tile

Architectural Granite

Pool Plaster

**Division 10**

**SPECIALTIES**

(This Section Not Used)

**Division 11**

**EQUIPMENT**

(This Section Not Used)

**Division 12**

**FURNISHINGS**

(This Section Not Used)

**Division 13**

**SPECIAL CONSTRUCTION**

(This Section Not Used)

**Division 14**

**CONVEYING SYSTEM**

(This Section Not Used)

**Division 15**

**MECHANICAL**

15145

Plumbing Piping

15495

Fountain Plumbing Systems

**Division 16**

**ELECTRICAL**

16060

Grounding and Bonding

16123

Wire and Cable

16131

Conduit

16520

Exterior Luminaires

16902

Fountain Controls

**Attachments**

Fountain Plaques

Big Rock Previous Winners

Lady Angler Winners

Permits

Town of Morehead City, NC CAMA Permit, April 18, 2012

Contract Forms

Form of Proposal – Single Prime Contract

AIA - A101-2007 - Standard Form of Agreement between Owner and Contractor

AIA – G704-2000 - Certificate of Substantial Completion

# DRAFT AIA® Document A701™ – 1997

## Instructions to Bidders

### for the following PROJECT:

(Name and location or address)

«"JIB" Property Waterfront Amenity Phase 1»  
«705 & 707 Shepard Street  
Morehead City, North Carolina»

### THE OWNER:

(Name, legal status and address)

«Town of Morehead City»« »  
«706 Arendell Street  
Morehead City, North Carolina 28557»

### THE ARCHITECT:

(Name, legal status and address)

«MK Chalk Architecture, P.A.»« »  
«Post Office Box 622  
Morehead City, North Carolina 28557»

### TABLE OF ARTICLES

- 1 DEFINITIONS
- 2 BIDDER'S REPRESENTATIONS
- 3 BIDDING DOCUMENTS
- 4 BIDDING PROCEDURES
- 5 CONSIDERATION OF BIDS
- 6 POST-BID INFORMATION
- 7 PERFORMANCE BOND AND PAYMENT BOND
- 8 FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

#### ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

**ELECTRONIC COPYING** of any portion of this AIA® Document to another electronic file is prohibited and constitutes a violation of copyright laws as set forth in the footer of this document.

## ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the proposed Contract Documents. The Bidding Requirements consist of the Advertisement or Invitation to Bid, Instructions to Bidders, Supplementary Instructions to Bidders, the bid form, and other sample bidding and contract forms. The proposed Contract Documents consist of the form of Agreement between the Owner and Contractor, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications and all Addenda issued prior to execution of the Contract.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, AIA Document A201, or in other Contract Documents are applicable to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect prior to the execution of the Contract which modify or interpret the Bidding Documents by additions, deletions, clarifications or corrections.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents as the base, to which Work may be added or from which Work may be deleted for sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from the amount of the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment or services or a portion of the Work as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment or labor for a portion of the Work.

## ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 The Bidder by making a Bid represents that:

§ 2.1.1 The Bidder has read and understands the Bidding Documents or Contract Documents, to the extent that such documentation relates to the Work for which the Bid is submitted, and for other portions of the Project, if any, being bid concurrently or presently under construction.

§ 2.1.2 The Bid is made in compliance with the Bidding Documents.

§ 2.1.3 The Bidder has visited the site, become familiar with local conditions under which the Work is to be performed and has correlated the Bidder's personal observations with the requirements of the proposed Contract Documents.

§ 2.1.4 The Bid is based upon the materials, equipment and systems required by the Bidding Documents without exception.

## ARTICLE 3 BIDDING DOCUMENTS

### § 3.1 COPIES

§ 3.1.1 Bidders may obtain complete sets of the Bidding Documents from the issuing office designated in the Advertisement or Invitation to Bid in the number and for the deposit sum, if any, stated therein. The deposit will be refunded to Bidders who submit a bona fide Bid and return the Bidding Documents in good condition within ten days after receipt of Bids. The cost of replacement of missing or damaged documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the Bidding Documents and the Bidder's deposit will be refunded.

§ 3.1.2 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the Advertisement or Invitation to Bid, or in supplementary instructions to bidders.

§ 3.1.3 Bidders shall use complete sets of Bidding Documents in preparing Bids; neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

§ 3.1.4 The Owner and Architect may make copies of the Bidding Documents available on the above terms for the purpose of obtaining Bids on the Work. No license or grant of use is conferred by issuance of copies of the Bidding Documents.

### § 3.2 INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

§ 3.2.1 The Bidder shall carefully study and compare the Bidding Documents with each other, and with other work being bid concurrently or presently under construction to the extent that it relates to the Work for which the Bid is submitted, shall examine the site and local conditions, and shall at once report to the Architect errors, inconsistencies or ambiguities discovered.

§ 3.2.2 Bidders and Sub-bidders requiring clarification or interpretation of the Bidding Documents shall make a written request which shall reach the Architect at least seven days prior to the date for receipt of Bids.

§ 3.2.3 Interpretations, corrections and changes of the Bidding Documents will be made by Addendum. Interpretations, corrections and changes of the Bidding Documents made in any other manner will not be binding, and Bidders shall not rely upon them.

### § 3.3 SUBSTITUTIONS

§ 3.3.1 The materials, products and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution.

§ 3.3.2 No substitution will be considered prior to receipt of Bids unless written request for approval has been received by the Architect at least ten days prior to the date for receipt of Bids. Such requests shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitution including drawings, performance and test data, and other information necessary for an evaluation. A statement setting forth changes in other materials, equipment or other portions of the Work, including changes in the work of other contracts that incorporation of the proposed substitution would require, shall be included. The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

§ 3.3.3 If the Architect approves a proposed substitution prior to receipt of Bids, such approval will be set forth in an Addendum. Bidders shall not rely upon approvals made in any other manner.

§ 3.3.4 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

### § 3.4 ADDENDA

§ 3.4.1 Addenda will be transmitted to all who are known by the issuing office to have received a complete set of Bidding Documents.

§ 3.4.2 Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.

§ 3.4.3 Addenda will be issued no later than four days prior to the date for receipt of Bids except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Each Bidder shall ascertain prior to submitting a Bid that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

## **ARTICLE 4 BIDDING PROCEDURES**

### **§ 4.1 PREPARATION OF BIDS**

**§ 4.1.1** Bids shall be submitted on the forms included with the Bidding Documents.

**§ 4.1.2** All blanks on the bid form shall be legibly executed in a non-erasable medium.

**§ 4.1.3** Sums shall be expressed in both words and figures. In case of discrepancy, the amount written in words shall govern.

**§ 4.1.4** Interlineations, alterations and erasures must be initialed by the signer of the Bid.

**§ 4.1.5** All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change."

**§ 4.1.6** Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall make no additional stipulations on the bid form nor qualify the Bid in any other manner.

**§ 4.1.7** Each copy of the Bid shall state the legal name of the Bidder and the nature of legal form of the Bidder. The Bidder shall provide evidence of legal authority to perform within the jurisdiction of the Work. Each copy shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further give the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached certifying the agent's authority to bind the Bidder.

### **§ 4.2 BID SECURITY**

**§ 4.2.1** Each Bid shall be accompanied by a bid security in the form and amount required if so stipulated in the Instructions to Bidders. The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and will, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. The amount of the bid security shall not be forfeited to the Owner in the event the Owner fails to comply with Section 6.2.

**§ 4.2.2** If a surety bond is required, it shall be written on AIA Document A310, Bid Bond, unless otherwise provided in the Bidding Documents, and the attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of the power of attorney.

**§ 4.2.3** The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until either (a) the Contract has been executed and bonds, if required, have been furnished, or (b) the specified time has elapsed so that Bids may be withdrawn or (c) all Bids have been rejected.

### **§ 4.3 SUBMISSION OF BIDS**

**§ 4.3.1** All copies of the Bid, the bid security, if any, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

**§ 4.3.2** Bids shall be deposited at the designated location prior to the time and date for receipt of Bids. Bids received after the time and date for receipt of Bids will be returned unopened.

**§ 4.3.3** The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

**§ 4.3.4** Oral, telephonic, telegraphic, facsimile or other electronically transmitted bids will not be considered.

### **§ 4.4 MODIFICATION OR WITHDRAWAL OF BID**

**§ 4.4.1** A Bid may not be modified, withdrawn or canceled by the Bidder during the stipulated time period following the time and date designated for the receipt of Bids, and each Bidder so agrees in submitting a Bid.

**§ 4.4.2** Prior to the time and date designated for receipt of Bids, a Bid submitted may be modified or withdrawn by notice to the party receiving Bids at the place designated for receipt of Bids. Such notice shall be in writing over the signature of the Bidder. Written confirmation over the signature of the Bidder shall be received, and date- and time-stamped by the receiving party on or before the date and time set for receipt of Bids. A change shall be so worded as not to reveal the amount of the original Bid.

**§ 4.4.3** Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids provided that they are then fully in conformance with these Instructions to Bidders.

**§ 4.4.4** Bid security, if required, shall be in an amount sufficient for the Bid as resubmitted.

## **ARTICLE 5 CONSIDERATION OF BIDS**

### **§ 5.1 OPENING OF BIDS**

At the discretion of the Owner, if stipulated in the Advertisement or Invitation to Bid, the properly identified Bids received on time will be publicly opened and will be read aloud. An abstract of the Bids may be made available to Bidders.

### **§ 5.2 REJECTION OF BIDS**

The Owner shall have the right to reject any or all Bids. A Bid not accompanied by a required bid security or by other data required by the Bidding Documents, or a Bid which is in any way incomplete or irregular is subject to rejection.

### **§ 5.3 ACCEPTANCE OF BID (AWARD)**

**§ 5.3.1** It is the intent of the Owner to award a Contract to the lowest qualified Bidder provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. The Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's own best interests.

**§ 5.3.2** The Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the low Bidder on the basis of the sum of the Base Bid and Alternates accepted.

## **ARTICLE 6 POST-BID INFORMATION**

### **§ 6.1 CONTRACTOR'S QUALIFICATION STATEMENT**

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request, a properly executed AIA Document A305, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted as a prerequisite to the issuance of Bidding Documents.

### **§ 6.2 OWNER'S FINANCIAL CAPABILITY**

The Owner shall, at the request of the Bidder to whom award of a Contract is under consideration and no later than seven days prior to the expiration of the time for withdrawal of Bids, furnish to the Bidder reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. Unless such reasonable evidence is furnished, the Bidder will not be required to execute the Agreement between the Owner and Contractor.

### **§ 6.3 SUBMITTALS**

**§ 6.3.1** The Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, after notification of selection for the award of a Contract, furnish to the Owner through the Architect in writing:

- .1 a designation of the Work to be performed with the Bidder's own forces;
- .2 names of the manufacturers, products, and the suppliers of principal items or systems of materials and equipment proposed for the Work; and
- .3 names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

**§ 6.3.2** The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder in writing if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, (1) withdraw the Bid or (2) submit an acceptable substitute person or entity with an adjustment in the Base Bid or Alternate Bid to cover the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

## ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

### § 7.1 BOND REQUIREMENTS

§ 7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Bonds may be secured through the Bidder's usual sources.

§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.1.3 If the Owner requires that bonds be secured from other than the Bidder's usual sources, changes in cost will be adjusted as provided in the Contract Documents.

### § 7.2 TIME OF DELIVERY AND FORM OF BONDS

§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract. If the Work is to be commenced prior thereto in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312, Performance Bond and Payment Bond. Both bonds shall be written in the amount of the Contract Sum.

§ 7.2.3 The bonds shall be dated on or after the date of the Contract.

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney.

## ARTICLE 8 FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

Unless otherwise required in the Bidding Documents, the Agreement for the Work will be written on AIA Document A101, Standard Form of Agreement Between Owner and Contractor Where the Basis of Payment Is a Stipulated Sum.

## SECTION 00510

### AMENDMENTS TO AIA DOCUMENTS A701-1997, INSTRUCTIONS TO BIDDERS

#### GENERAL

The provisions of this Attachment shall delete, modify and supplement the provisions contained in the "Instructions to Bidders," AIA Document A701-1997 Edition. The provisions contained in this Attachment will supersede any conflicting provisions of the AIA Document

#### ARTICLE 2, BIDDER'S REPRESENTATIONS

2.1 Add the following subparagraph to paragraph 2.1:

2.1.5 This Bid has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this Bid, with any other Bidder or with any competitor.

#### ARTICLE 4, BIDDING PROCEDURES

4.1.1 Add the following sentence to subparagraph 4.1.1:

Only one copy of the Bib is to be submitted.

4.2.1 Delete subparagraph 4.2.1 and substitute the following:

4.2.1 Each Bid must be accompanied by a Bid Bond payable to the Owner for five percent of the total amount of the Bid.

4.2.2 Delete Subparagraph 4.2.2 and substitute the following:

4.2.2 The Bid Bond shall be written on the form identical to that included in the Bidding Documents, and the attorney-in-fact who executes the Bid Bond on behalf of the surety shall affix to the Bid Bond a certified and current copy of the power of attorney.

4.2.3 Add the words "payment and performance" before the word "bonds"; and add the following to subparagraph 4.2.3:

As soon as the Bid prices have been compared, the Owner will return the Bid Bonds of all except the three lowest responsible Bidders. When the Agreements executed, the Bid Bonds of the two remaining unsuccessful Bidders will be returned.

4.2 Add the following subparagraph to paragraph 4.2:

4.2.4 If a Bidder refuses to execute the Agreement or obtain the Performance and Payment Bonds within the agreed time, the Owner may consider the Bidder in default, in which case the Bid Bond accompanying the Bid shall become the property of the Owner.

4.3 Add the following subparagraphs to paragraph 4.3:

4.3.5 All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the Project, shall apply to the Contract throughout.

4.4.1 Delete subparagraph 4.4.1 and substitute the following:

4.4.1 No Bidder may withdraw, modify or cancel a Bid within 60 calendar days after the actual date of the opening thereof. Should there be reasons why the Contract cannot be awarded within the specified period, the time may be extended by mutual agreement between the Owner and the Bidder.

4.4.4 Delete the words", If required," from Subparagraph 4.4.4.

#### ARTICLES 5, CONSIDERATION OF BIDS

5.3.2 Delete subparagraph 5.3.2 and substitute the following:

5.3.2 The Owner shall have the right to accept Alternates in the sequence or combinations listed and to determine the low Bidder on the basis of the sum of the Base Bid and the Alternates accepted.

#### ARTICLE 7, PERFORMANCE BOND AND PAYMENT BOND

7.1.1 Delete subparagraph 7.1.1 and substitute the following:

7.1.1 Prior to execution of the Contract, the Bidder shall furnish Bonds covering the faithful performance of the Contract and the payment of all obligations arising thereunder. Both Bonds shall be separately written, each in the amount of the Contract Sum. The cost shall be included in the Bid.

7.1.2 Delete subparagraph

7.1.2 Surety companies executing Bonds must hold a certificate of authority as a acceptable surety on Federal Bonds as listed in Treasury Circular 570, as amended, and be authorized to transact business in the State where the Project is located.

7.1.3 Delete subparagraph 7.1.3.

7.2.1 Delete subparagraph 7.2.1 and substitute the following:

7.2.1 The Bidder to whom the Contract is awarded will be required to execute the Agreement and obtain Performance and Payment Bonds within the (10) calendar days from the date when the Notice of Award is delivered to the Bidder. The Notice shall be accompanied by the necessary Agreement and Bond forms.

7.2.2 Delete subparagraph and substitute the following:

7.2.2 The Bonds shall be written on forms identical to those included in the Bidding Documents.

(Note: Any additional provisions that are necessary to remain effective after execution of the Contract for Construction will be inserted here and continue in the same format.

- oOo -

SECTION 00700  
GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

AIA Document A201, "General Conditions of the Contract for Construction", 2007, Articles 1-15 inclusive, with certain "Amendments to General Conditions" shall be a part of the Contract Documents, and applies to each Division of the Specifications. A copy of AIA Document A201 and Amendments are bound herein.

Persons having or contemplating any connection with the Work of the Contract are advised to be thoroughly familiar with the General Conditions and the Amendments to the General Conditions prior to proceeding.

Copies of these documents are enclosed in this document.

END OF SECTION 00700

# DRAFT AIA® Document A201™ – 2007

## General Conditions of the Contract for Construction

### for the following PROJECT:

(Name and location or address)

«"JIB" Property Waterfront Amenity Phase 1»  
«705 & 707 Shepard Street  
Morehead City, North Carolina »

### THE OWNER:

(Name, legal status and address)

«Town of Morehead City »« »  
«706 Arendell Street  
Morehead City, North Carolina 28557 »

### THE ARCHITECT:

(Name, legal status and address)

«MK Chalk Architecture, P.A. »« »  
«Post Office Box 622  
Morehead City, North Carolina 28557 »

### TABLE OF ARTICLES

- 1 GENERAL PROVISIONS
- 2 OWNER
- 3 CONTRACTOR
- 4 ARCHITECT
- 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
- 15 CLAIMS AND DISPUTES

#### ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

**ELECTRONIC COPYING** of any portion of this AIA® Document to another electronic file is prohibited and constitutes a violation of copyright laws as set forth in the footer of this document.

## INDEX

(Topics and numbers in bold are section headings.)

### Acceptance of Nonconforming Work

9.6.6, 9.9.3, **12.3**

Acceptance of Work

9.6.6, 9.8.2, 9.9.3, 9.10.1, 9.10.3, **12.3**

### Access to Work

**3.16**, 6.2.1, 12.1

Accident Prevention

10

Acts and Omissions

3.2, 3.3.2, 3.12.8, 3.18, 4.2.3, 8.3.1, 9.5.1, 10.2.5, 10.2.8, 13.4.2, 13.7, 14.1, 15.2

Addenda

1.1.1, 3.11.1

Additional Costs, Claims for

3.7.4, 3.7.5, 6.1.1, 7.3.7.5, 10.3, 15.1.4

### Additional Inspections and Testing

9.4.2, 9.8.3, 12.2.1, **13.5**

Additional Insured

11.1.4

### Additional Time, Claims for

3.2.4, 3.7.4, 3.7.5, 3.10.2, 8.3.2, **15.1.5**

### Administration of the Contract

3.1.3, **4.2**, 9.4, 9.5

Advertisement or Invitation to Bid

1.1.1

Aesthetic Effect

4.2.13

### Allowances

**3.8**, 7.3.8

All-risk Insurance

11.3.1, 11.3.1.1

### Applications for Payment

4.2.5, 7.3.9, 9.2, **9.3**, 9.4, 9.5.1, 9.6.3, 9.7, 9.10,

11.1.3

Approvals

2.1.1, 2.2.2, 2.4, 3.1.3, 3.10.2, 3.12.8, 3.12.9, 3.12.10,

4.2.7, 9.3.2, 13.5.1

### Arbitration

8.3.1, 11.3.10, 13.1.1, 15.3.2, **15.4**

## ARCHITECT

### 4

**Architect**, Definition of

#### 4.1.1

Architect, Extent of Authority

2.4.1, 3.12.7, 4.1, 4.2, 5.2, 6.3, 7.1.2, 7.3.7, 7.4, 9.2, 9.3.1, 9.4, 9.5, 9.6.3, 9.8, 9.10.1, 9.10.3, 12.1, 12.2.1, 13.5.1, 13.5.2, 14.2.2, 14.2.4, 15.1.3, 15.2.1

Architect, Limitations of Authority and Responsibility

2.1.1, 3.12.4, 3.12.8, 3.12.10, 4.1.2, 4.2.1, 4.2.2, 4.2.3, 4.2.6, 4.2.7, 4.2.10, 4.2.12, 4.2.13, 5.2.1, 7.4, 9.4.2, 9.5.3, 9.6.4, 15.1.3, 15.2

Architect's Additional Services and Expenses

2.4.1, 11.3.1.1, 12.2.1, 13.5.2, 13.5.3, 14.2.4

Architect's Administration of the Contract

3.1.3, 4.2, 3.7.4, 15.2, 9.4.1, 9.5

Architect's Approvals

2.4.1, 3.1.3, 3.5, 3.10.2, 4.2.7

Architect's Authority to Reject Work

3.5, 4.2.6, 12.1.2, 12.2.1

Architect's Copyright

1.1.7, 1.5

Architect's Decisions

3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 4.2.14, 6.3, 7.3.7, 7.3.9, 8.1.3, 8.3.1, 9.2, 9.4.1, 9.5, 9.8.4, 9.9.1, 13.5.2, 15.2, 15.3

Architect's Inspections

3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 13.5

Architect's Instructions

3.2.4, 3.3.1, 4.2.6, 4.2.7, 13.5.2

Architect's Interpretations

4.2.11, 4.2.12

Architect's Project Representative

4.2.10

Architect's Relationship with Contractor

1.1.2, 1.5, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2, 3.5, 3.7.4, 3.7.5, 3.9.2, 3.9.3, 3.10, 3.11, 3.12, 3.16, 3.18, 4.1.2, 4.1.3, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3.7, 12, 13.4.2, 13.5, 15.2

Architect's Relationship with Subcontractors

1.1.2, 4.2.3, 4.2.4, 4.2.6, 9.6.3, 9.6.4, 11.3.7

Architect's Representations

9.4.2, 9.5.1, 9.10.1

Architect's Site Visits

3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.5

Asbestos

10.3.1

Attorneys' Fees

3.18.1, 9.10.2, 10.3.3

Award of Separate Contracts

6.1.1, 6.1.2

### Award of Subcontracts and Other Contracts for Portions of the Work

#### 5.2

### Basic Definitions

#### 1.1

Bidding Requirements

1.1.1, 5.2.1, 11.4.1

Binding Dispute Resolution

9.7, 11.3.9, 11.3.10, 13.1.1, 15.2.5, 15.2.6.1, 15.3.1, 15.3.2, 15.4.1

### Boiler and Machinery Insurance

#### 11.3.2

Bonds, Lien

7.3.7.4, 9.10.2, 9.10.3

### Bonds, Performance, and Payment

7.3.7.4, 9.6.7, 9.10.3, 11.3.9, **11.4**

Building Permit

3.7.1

## **Capitalization**

### **1.3**

Certificate of Substantial Completion

9.8.3, 9.8.4, 9.8.5

### **Certificates for Payment**

4.2.1, 4.2.5, 4.2.9, 9.3.3, **9.4**, 9.5, 9.6.1, 9.6.6, 9.7,

9.10.1, 9.10.3, 14.1.1.3, 14.2.4, 15.1.3

Certificates of Inspection, Testing or Approval

13.5.4

Certificates of Insurance

9.10.2, 11.1.3

### **Change Orders**

1.1.1, 2.4.1, 3.4.2, 3.7.4, 3.8.2.3, 3.11.1, 3.12.8, 4.2.8,

5.2.3, 7.1.2, 7.1.3, **7.2**, 7.3.2, 7.3.6, 7.3.9, 7.3.10,

8.3.1, 9.3.1.1, 9.10.3, 10.3.2, 11.3.1.2, 11.3.4, 11.3.9,

12.1.2, 15.1.3

**Change Orders, Definition of**

#### **7.2.1**

## **CHANGES IN THE WORK**

2.2.1, 3.11, 4.2.8, **7**, 7.2.1, 7.3.1, 7.4, 8.3.1, 9.3.1.1,

11.3.9

**Claims, Definition of**

#### **15.1.1**

## **CLAIMS AND DISPUTES**

3.2.4, 6.1.1, 6.3, 7.3.9, 9.3.3, 9.10.4, 10.3.3, **15**, 15.4

Claims and Timely Assertion of Claims

15.4.1

### **Claims for Additional Cost**

3.2.4, 3.7.4, 6.1.1, 7.3.9, 10.3.2, **15.1.4**

### **Claims for Additional Time**

3.2.4, 3.7.46.1.1, 8.3.2, 10.3.2, **15.1.5**

### **Concealed or Unknown Conditions, Claims for**

#### **3.7.4**

Claims for Damages

3.2.4, 3.18, 6.1.1, 8.3.3, 9.5.1, 9.6.7, 10.3.3, 11.1.1,

11.3.5, 11.3.7, 14.1.3, 14.2.4, 15.1.6

Claims Subject to Arbitration

15.3.1, 15.4.1

### **Cleaning Up**

#### **3.15, 6.3**

Commencement of the Work, Conditions Relating to

2.2.1, 3.2.2, 3.4.1, 3.7.1, 3.10.1, 3.12.6, 5.2.1, 5.2.3,

6.2.2, 8.1.2, 8.2.2, 8.3.1, 11.1, 11.3.1, 11.3.6, 11.4.1,

15.1.4

**Commencement of the Work, Definition of**

#### **8.1.2**

### **Communications Facilitating Contract**

#### **Administration**

3.9.1, **4.2.4**

Completion, Conditions Relating to

3.4.1, 3.11, 3.15, 4.2.2, 4.2.9, 8.2, 9.4.2, 9.8, 9.9.1,

9.10, 12.2, 13.7, 14.1.2

## **COMPLETION, PAYMENTS AND**

### **9**

Completion, Substantial

4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, 9.8, 9.9.1, 9.10.3,

12.2, 13.7

Compliance with Laws

1.6.1, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 4.1.1, 9.6.4,

10.2.2, 11.1, 11.3, 13.1, 13.4, 13.5.1, 13.5.2, 13.6,

14.1.1, 14.2.1.3, 15.2.8, 15.4.2, 15.4.3

Concealed or Unknown Conditions

3.7.4, 4.2.8, 8.3.1, 10.3

Conditions of the Contract

1.1.1, 6.1.1, 6.1.4

Consent, Written

3.4.2, 3.7.4, 3.12.8, 3.14.2, 4.1.2, 9.3.2, 9.8.5, 9.9.1,

9.10.2, 9.10.3, 11.3.1, 13.2, 13.4.2, 15.4.4.2

### **Consolidation or Joinder**

#### **15.4.4**

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

1.1.4, **6**

**Construction Change Directive, Definition of**

#### **7.3.1**

### **Construction Change Directives**

1.1.1, 3.4.2, 3.12.8, 4.2.8, 7.1.1, 7.1.2, 7.1.3, **7.3**,

9.3.1.1

Construction Schedules, Contractor's

3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.5.2

### **Contingent Assignment of Subcontracts**

#### **5.4, 14.2.2.2**

### **Continuing Contract Performance**

#### **15.1.3**

**Contract, Definition of**

#### **1.1.2**

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

5.4.1.1, 11.3.9, **14**

Contract Administration

3.1.3, 4, 9.4, 9.5

Contract Award and Execution, Conditions Relating to

3.7.1, 3.10, 5.2, 6.1, 11.1.3, 11.3.6, 11.4.1

Contract Documents, Copies Furnished and Use of

1.5.2, 2.2.5, 5.3

**Contract Documents, Definition of**

#### **1.1.1**

### **Contract Sum**

3.7.4, 3.8, 5.2.3, 7.2, 7.3, 7.4, **9.1**, 9.4.2, 9.5.1.4,

9.6.7, 9.7, 10.3.2, 11.3.1, 14.2.4, 14.3.2, 15.1.4,

15.2.5

**Contract Sum, Definition of**

#### **9.1**

Contract Time

3.7.4, 3.7.5, 3.10.2, 5.2.3, 7.2.1.3, 7.3.1, 7.3.5, 7.4,

8.1.1, 8.2.1, 8.3.1, 9.5.1, 9.7, 10.3.2, 12.1.1, 14.3.2,

15.1.5.1, 15.2.5

**Contract Time, Definition of**

#### **8.1.1**

## CONTRACTOR

### 3

**Contractor**, Definition of

#### 3.1, 6.1.2

**Contractor's Construction Schedules**

3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.5.2

Contractor's Employees

3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2, 10.3, 11.1.1, 11.3.7, 14.1, 14.2.1.1

**Contractor's Liability Insurance**

#### 11.1

Contractor's Relationship with Separate Contractors and Owner's Forces

3.12.5, 3.14.2, 4.2.4, 6, 11.3.7, 12.1.2, 12.2.4

Contractor's Relationship with Subcontractors

1.2.2, 3.3.2, 3.18.1, 3.18.2, 5, 9.6.2, 9.6.7, 9.10.2, 11.3.1.2, 11.3.7, 11.3.8

Contractor's Relationship with the Architect

1.1.2, 1.5, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2, 3.5, 3.7.4, 3.10, 3.11, 3.12, 3.16, 3.18, 4.1.3, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3.7, 12, 13.5, 15.1.2, 15.2.1

Contractor's Representations

3.2.1, 3.2.2, 3.5, 3.12.6, 6.2.2, 8.2.1, 9.3.3, 9.8.2

Contractor's Responsibility for Those Performing the Work

3.3.2, 3.18, 5.3.1, 6.1.3, 6.2, 9.5.1, 10.2.8

Contractor's Review of Contract Documents

3.2

Contractor's Right to Stop the Work

9.7

Contractor's Right to Terminate the Contract

14.1, 15.1.6

Contractor's Submittals

3.10, 3.11, 3.12.4, 4.2.7, 5.2.1, 5.2.3, 9.2, 9.3, 9.8.2, 9.8.3, 9.9.1, 9.10.2, 9.10.3, 11.1.3, 11.4.2

Contractor's Superintendent

3.9, 10.2.6

Contractor's Supervision and Construction Procedures

1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4, 7.1.3, 7.3.5, 7.3.7, 8.2, 10, 12, 14, 15.1.3

Contractual Liability Insurance

11.1.1.8, 11.2

Coordination and Correlation

1.2, 3.2.1, 3.3.1, 3.10, 3.12.6, 6.1.3, 6.2.1

Copies Furnished of Drawings and Specifications

1.5, 2.2.5, 3.11

Copyrights

1.5, 3.17

Correction of Work

2.3, 2.4, 3.7.3, 9.4.2, 9.8.2, 9.8.3, 9.9.1, 12.1.2, 12.2

**Correlation and Intent of the Contract Documents**  
1.2

**Cost**, Definition of

7.3.7

Costs

2.4.1, 3.2.4, 3.7.3, 3.8.2, 3.15.2, 5.4.2, 6.1.1, 6.2.3, 7.3.3.3, 7.3.7, 7.3.8, 7.3.9, 9.10.2, 10.3.2, 10.3.6, 11.3, 12.1.2, 12.2.1, 12.2.4, 13.5, 14

**Cutting and Patching**

3.14, 6.2.5

Damage to Construction of Owner or Separate Contractors

3.14.2, 6.2.4, 10.2.1.2, 10.2.5, 10.4, 11.1.1, 11.3, 12.2.4

Damage to the Work

3.14.2, 9.9.1, 10.2.1.2, 10.2.5, 10.4.1, 11.3.1, 12.2.4

Damages, Claims for

3.2.4, 3.18, 6.1.1, 8.3.3, 9.5.1, 9.6.7, 10.3.3, 11.1.1, 11.3.5, 11.3.7, 14.1.3, 14.2.4, 15.1.6

Damages for Delay

6.1.1, 8.3.3, 9.5.1.6, 9.7, 10.3.2

**Date of Commencement of the Work**, Definition of

8.1.2

**Date of Substantial Completion**, Definition of

8.1.3

**Day**, Definition of

8.1.4

Decisions of the Architect

3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 15.2, 6.3, 7.3.7, 7.3.9, 8.1.3, 8.3.1, 9.2, 9.4, 9.5.1, 9.8.4, 9.9.1, 13.5.2, 14.2.2, 14.2.4, 15.1, 15.2

**Decisions to Withhold Certification**

9.4.1, 9.5, 9.7, 14.1.1.3

Defective or Nonconforming Work, Acceptance, Rejection and Correction of

2.3.1, 2.4.1, 3.5, 4.2.6, 6.2.5, 9.5.1, 9.5.2, 9.6.6, 9.8.2, 9.9.3, 9.10.4, 12.2.1

Definitions

1.1, 2.1.1, 3.1.1, 3.5, 3.12.1, 3.12.2, 3.12.3, 4.1.1, 15.1.1, 5.1, 6.1.2, 7.2.1, 7.3.1, 8.1, 9.1, 9.8.1

**Delays and Extensions of Time**

3.2, 3.7.4, 5.2.3, 7.2.1, 7.3.1, 7.4, 8.3, 9.5.1, 9.7, 10.3.2, 10.4.1, 14.3.2, 15.1.5, 15.2.5

Disputes

6.3, 7.3.9, 15.1, 15.2

**Documents and Samples at the Site**

3.11

**Drawings**, Definition of

1.1.5

Drawings and Specifications, Use and Ownership of

3.11

Effective Date of Insurance

8.2.2, 11.1.2

**Emergencies**

10.4, 14.1.1.2, 15.1.4

Employees, Contractor's

3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2, 10.3.3, 11.1.1, 11.3.7, 14.1, 14.2.1.1

Equipment, Labor, Materials or  
1.1.3, 1.1.6, 3.4, 3.5, 3.8.2, 3.8.3, 3.12, 3.13.1, 3.15.1,  
4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.7, 9.3.2, 9.3.3, 9.5.1.3,  
9.10.2, 10.2.1, 10.2.4, 14.2.1.1, 14.2.1.2  
Execution and Progress of the Work  
1.1.3, 1.2.1, 1.2.2, 2.2.3, 2.2.5, 3.1, 3.3.1, 3.4.1, 3.5,  
3.7.1, 3.10.1, 3.12, 3.14, 4.2, 6.2.2, 7.1.3, 7.3.5, 8.2,  
9.5.1, 9.9.1, 10.2, 10.3, 12.2, 14.2, 14.3.1, 15.1.3  
Extensions of Time  
3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3, 7.4, 9.5.1, 9.7, 10.3.2,  
10.4.1, 14.3, 15.1.5, 15.2.5

**Failure of Payment**

9.5.1.3, **9.7**, 9.10.2, 13.6, 14.1.1.3, 14.2.1.2

**Faulty Work**

(See Defective or Nonconforming Work)

**Final Completion and Final Payment**

4.2.1, 4.2.9, 9.8.2, **9.10**, 11.1.2, 11.1.3, 11.3.1, 11.3.5,  
12.3.1, 14.2.4, 14.4.3

**Financial Arrangements, Owner's**

2.2.1, 13.2.2, 14.1.1.4

**Fire and Extended Coverage Insurance**

11.3.1.1

**GENERAL PROVISIONS**

**1**

**Governing Law**

**13.1**

Guarantees (See Warranty)

**Hazardous Materials**

10.2.4, **10.3**

**Identification of Subcontractors and Suppliers**

5.2.1

**Indemnification**

3.17, **3.18**, 9.10.2, 10.3.3, 10.3.5, 10.3.6, 11.3.1.2,  
11.3.7

**Information and Services Required of the Owner**

2.1.2, **2.2**, 3.2.2, 3.12.4, 3.12.10, 6.1.3, 6.1.4, 6.2.5,  
9.6.1, 9.6.4, 9.9.2, 9.10.3, 10.3.3, 11.2, 11.4, 13.5.1,  
13.5.2, 14.1.1.4, 14.1.4, 15.1.3

**Initial Decision**

**15.2**

**Initial Decision Maker, Definition of**

1.1.8

**Initial Decision Maker, Decisions**

14.2.2, 14.2.4, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5

**Initial Decision Maker, Extent of Authority**

14.2.2, 14.2.4, 15.1.3, 15.2.1, 15.2.2, 15.2.3, 15.2.4,  
15.2.5

**Injury or Damage to Person or Property**

**10.2.8**, 10.4.1

**Inspections**

3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3,  
9.9.2, 9.10.1, 12.2.1, 13.5

**Instructions to Bidders**

1.1.1

**Instructions to the Contractor**

3.2.4, 3.3.1, 3.8.1, 5.2.1, 7, 8.2.2, 12, 13.5.2

**Instruments of Service, Definition of**

**1.1.7**

**Insurance**

3.18.1, 6.1.1, 7.3.7, 9.3.2, 9.8.4, 9.9.1, 9.10.2, **11**

**Insurance, Boiler and Machinery**

**11.3.2**

**Insurance, Contractor's Liability**

**11.1**

Insurance, Effective Date of

8.2.2, 11.1.2

**Insurance, Loss of Use**

**11.3.3**

**Insurance, Owner's Liability**

**11.2**

**Insurance, Property**

10.2.5, **11.3**

Insurance, Stored Materials

9.3.2

**INSURANCE AND BONDS**

**11**

Insurance Companies, Consent to Partial Occupancy

9.9.1

Intent of the Contract Documents

1.2.1, 4.2.7, 4.2.12, 4.2.13, 7.4

**Interest**

**13.6**

**Interpretation**

1.2.3, **1.4**, 4.1.1, 5.1, 6.1.2, 15.1.1

Interpretations, Written

4.2.11, 4.2.12, 15.1.4

Judgment on Final Award

15.4.2

**Labor and Materials, Equipment**

1.1.3, 1.1.6, **3.4**, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,

4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.7, 9.3.2, 9.3.3, 9.5.1.3,

9.10.2, 10.2.1, 10.2.4, 14.2.1.1, 14.2.1.2

**Labor Disputes**

8.3.1

**Laws and Regulations**

1.5, 3.2.3, 3.6, 3.7, 3.12.10, 3.13.1, 4.1.1, 9.6.4, 9.9.1,

10.2.2, 11.1.1, 11.3, 13.1.1, 13.4, 13.5.1, 13.5.2,

13.6.1, 14, 15.2.8, 15.4

**Liens**

2.1.2, 9.3.3, 9.10.2, 9.10.4, 15.2.8

Limitations, Statutes of

12.2.5, 13.7, 15.4.1.1

Limitations of Liability

2.3.1, 3.2.2, 3.5, 3.12.10, 3.17, 3.18.1, 4.2.6, 4.2.7,

4.2.12, 6.2.2, 9.4.2, 9.6.4, 9.6.7, 10.2.5, 10.3.3,

11.1.2, 11.2, 11.3.7, 12.2.5, 13.4.2

Limitations of Time

2.1.2, 2.2, 2.4, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2.7,

5.2, 5.3.1, 5.4.1, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3,

9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 11.1.3, 11.3.1.5,

11.3.6, 11.3.10, 12.2, 13.5, 13.7, 14, 15

**Loss of Use Insurance**

**11.3.3**

Material Suppliers  
1.5, 3.12.1, 4.2.4, 4.2.6, 5.2.1, 9.3, 9.4.2, 9.6, 9.10.5

**Materials, Hazardous**  
10.2.4, **10.3**

Materials, Labor, Equipment and  
1.1.3, 1.1.6, 1.5.1, 3.4.1, 3.5, 3.8.2, 3.8.3, 3.12,  
3.13.1, 3.15.1, 4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.7, 9.3.2,  
9.3.3, 9.5.1.3, 9.10.2, 10.2.1.2, 10.2.4, 14.2.1.1,  
14.2.1.2

Means, Methods, Techniques, Sequences and  
Procedures of Construction  
3.3.1, 3.12.10, 4.2.2, 4.2.7, 9.4.2

Mechanic's Lien  
2.1.2, 15.2.8

**Mediation**  
8.3.1, 10.3.5, 10.3.6, 15.2.1, 15.2.5, 15.2.6, **15.3**,  
15.4.1

**Minor Changes in the Work**  
1.1.1, 3.12.8, 4.2.8, 7.1, **7.4**

**MISCELLANEOUS PROVISIONS**

**13**

**Modifications, Definition of**

**1.1.1**

Modifications to the Contract  
1.1.1, 1.1.2, 3.11, 4.1.2, 4.2.1, 5.2.3, 7, 8.3.1, 9.7,  
10.3.2, 11.3.1

**Mutual Responsibility**

**6.2**

**Nonconforming Work, Acceptance of**

9.6.6, 9.9.3, **12.3**  
Nonconforming Work, Rejection and Correction of  
2.3.1, 2.4.1, 3.5, 4.2.6, 6.2.4, 9.5.1, 9.8.2, 9.9.3,  
9.10.4, 12.2.1

Notice

2.2.1, 2.3.1, 2.4.1, 3.2.4, 3.3.1, 3.7.2, 3.12.9, 5.2.1,  
9.7, 9.10, 10.2.2, 11.1.3, 12.2.2.1, 13.3, 13.5.1,  
13.5.2, 14.1, 14.2, 15.2.8, 15.4.1

**Notice, Written**

2.3.1, 2.4.1, 3.3.1, 3.9.2, 3.12.9, 3.12.10, 5.2.1, 9.7,  
9.10, 10.2.2, 10.3, 11.1.3, 11.3.6, 12.2.2.1, **13.3**, 14,  
15.2.8, 15.4.1

**Notice of Claims**

3.7.4, 10.2.8, **15.1.2**, 15.4

Notice of Testing and Inspections

13.5.1, 13.5.2

Observations, Contractor's

3.2, 3.7.4

Occupancy

2.2.2, 9.6.6, 9.8, 11.3.1.5

Orders, Written

1.1.1, 2.3, 3.9.2, 7, 8.2.2, 11.3.9, 12.1, 12.2.2.1,  
13.5.2, 14.3.1

**OWNER**

**2**

**Owner, Definition of**

**2.1.1**

**Owner, Information and Services Required of the**

2.1.2, **2.2**, 3.2.2, 3.12.10, 6.1.3, 6.1.4, 6.2.5, 9.3.2,  
9.6.1, 9.6.4, 9.9.2, 9.10.3, 10.3.3, 11.2, 11.3, 13.5.1,  
13.5.2, 14.1.1.4, 14.1.4, 15.1.3

Owner's Authority

1.5, 2.1.1, 2.3.1, 2.4.1, 3.4.2, 3.8.1, 3.12.10, 3.14.2,  
4.1.2, 4.1.3, 4.2.4, 4.2.9, 5.2.1, 5.2.4, 5.4.1, 6.1, 6.3,  
7.2.1, 7.3.1, 8.2.2, 8.3.1, 9.3.1, 9.3.2, 9.5.1, 9.6.4,  
9.9.1, 9.10.2, 10.3.2, 11.1.3, 11.3.3, 11.3.10, 12.2.2,  
12.3.1, 13.2.2, 14.3, 14.4, 15.2.7

Owner's Financial Capability

2.2.1, 13.2.2, 14.1.1.4

**Owner's Liability Insurance**

**11.2**

Owner's Relationship with Subcontractors

1.1.2, 5.2, 5.3, 5.4, 9.6.4, 9.10.2, 14.2.2

**Owner's Right to Carry Out the Work**

**2.4**, 14.2.2

**Owner's Right to Clean Up**

**6.3**

**Owner's Right to Perform Construction and to  
Award Separate Contracts**

**6.1**

**Owner's Right to Stop the Work**

**2.3**

Owner's Right to Suspend the Work

14.3

Owner's Right to Terminate the Contract

14.2

**Ownership and Use of Drawings, Specifications  
and Other Instruments of Service**

1.1.1, 1.1.6, 1.1.7, **1.5**, 2.2.5, 3.2.2, 3.11.1, 3.17,  
4.2.12, 5.3.1

**Partial Occupancy or Use**

9.6.6, **9.9**, 11.3.1.5

**Patching, Cutting and**

**3.14**, 6.2.5

Patents

3.17

**Payment, Applications for**

4.2.5, 7.3.9, 9.2, **9.3**, 9.4, 9.5, 9.6.3, 9.7, 9.8.5, 9.10.1,  
14.2.3, 14.2.4, 14.4.3

**Payment, Certificates for**

4.2.5, 4.2.9, 9.3.3, **9.4**, 9.5, 9.6.1, 9.6.6, 9.7, 9.10.1,  
9.10.3, 13.7, 14.1.1.3, 14.2.4

**Payment, Failure of**

9.5.1.3, **9.7**, 9.10.2, 13.6, 14.1.1.3, 14.2.1.2

Payment, Final

4.2.1, 4.2.9, 9.8.2, 9.10, 11.1.2, 11.1.3, 11.4.1, 12.3.1,  
13.7, 14.2.4, 14.4.3

**Payment Bond, Performance Bond and**

**7.3.7.4**, 9.6.7, 9.10.3, **11.4**

**Payments, Progress**

9.3, **9.6**, 9.8.5, 9.10.3, 13.6, 14.2.3, 15.1.3

**PAYMENTS AND COMPLETION**

**9**

Payments to Subcontractors  
5.4.2, 9.5.1.3, 9.6.2, 9.6.3, 9.6.4, 9.6.7, 14.2.1.2  
PCB  
10.3.1  
**Performance Bond and Payment Bond**  
7.3.7.4, 9.6.7, 9.10.3, 11.4  
**Permits, Fees, Notices and Compliance with Laws**  
2.2.2, 3.7, 3.13, 7.3.7.4, 10.2.2  
**PERSONS AND PROPERTY, PROTECTION OF**  
**10**  
Polychlorinated Biphenyl  
10.3.1  
**Product Data, Definition of**  
**3.12.2**  
**Product Data and Samples, Shop Drawings**  
3.11, 3.12, 4.2.7  
**Progress and Completion**  
4.2.2, 8.2, 9.8, 9.9.1, 14.1.4, 15.1.3  
**Progress Payments**  
9.3, 9.6, 9.8.5, 9.10.3, 13.6, 14.2.3, 15.1.3  
**Project, Definition of**  
**1.1.4**  
Project Representatives  
4.2.10  
**Property Insurance**  
10.2.5, 11.3  
**PROTECTION OF PERSONS AND PROPERTY**  
**10**  
Regulations and Laws  
1.5, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 4.1.1, 9.6.4, 9.9.1,  
10.2.2, 11.1, 11.4, 13.1, 13.4, 13.5.1, 13.5.2, 13.6, 14,  
15.2.8, 15.4  
Rejection of Work  
3.5, 4.2.6, 12.2.1  
Releases and Waivers of Liens  
9.10.2  
Representations  
3.2.1, 3.5, 3.12.6, 6.2.2, 8.2.1, 9.3.3, 9.4.2, 9.5.1,  
9.8.2, 9.10.1  
Representatives  
2.1.1, 3.1.1, 3.9, 4.1.1, 4.2.1, 4.2.2, 4.2.10, 5.1.1,  
5.1.2, 13.2.1  
Responsibility for Those Performing the Work  
3.3.2, 3.18, 4.2.3, 5.3.1, 6.1.3, 6.2, 6.3, 9.5.1, 10  
Retainage  
9.3.1, 9.6.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3  
**Review of Contract Documents and Field Conditions by Contractor**  
**3.2, 3.12.7, 6.1.3**  
Review of Contractor's Submittals by Owner and Architect  
3.10.1, 3.10.2, 3.11, 3.12, 4.2, 5.2, 6.1.3, 9.2, 9.8.2  
Review of Shop Drawings, Product Data and Samples by Contractor  
3.12

**Rights and Remedies**  
1.1.2, 2.3, 2.4, 3.5, 3.7.4, 3.15.2, 4.2.6, 5.3, 5.4, 6.1,  
6.3, 7.3.1, 8.3, 9.5.1, 9.7, 10.2.5, 10.3, 12.2.2, 12.2.4,  
**13.4, 14, 15.4**  
**Royalties, Patents and Copyrights**  
**3.17**  
Rules and Notices for Arbitration  
15.4.1  
**Safety of Persons and Property**  
**10.2, 10.4**  
**Safety Precautions and Programs**  
3.3.1, 4.2.2, 4.2.7, 5.3.1, **10.1, 10.2, 10.4**  
**Samples, Definition of**  
**3.12.3**  
**Samples, Shop Drawings, Product Data and**  
3.11, 3.12, 4.2.7  
**Samples at the Site, Documents and**  
**3.11**  
**Schedule of Values**  
**9.2, 9.3.1**  
Schedules, Construction  
3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.5.2  
Separate Contracts and Contractors  
1.1.4, 3.12.5, 3.14.2, 4.2.4, 4.2.7, 6, 8.3.1, 12.1.2  
**Shop Drawings, Definition of**  
**3.12.1**  
**Shop Drawings, Product Data and Samples**  
3.11, 3.12, 4.2.7  
**Site, Use of**  
**3.13, 6.1.1, 6.2.1**  
Site Inspections  
3.2.2, 3.3.3, 3.7.1, 3.7.4, 4.2, 9.4.2, 9.10.1, 13.5  
Site Visits, Architect's  
3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.5  
Special Inspections and Testing  
4.2.6, 12.2.1, 13.5  
**Specifications, Definition of**  
**1.1.6**  
**Specifications**  
1.1.1, **1.1.6, 1.2.2, 1.5, 3.11, 3.12.10, 3.17, 4.2.14**  
Statute of Limitations  
13.7, 15.4.1.1  
Stopping the Work  
2.3, 9.7, 10.3, 14.1  
Stored Materials  
6.2.1, 9.3.2, 10.2.1.2, 10.2.4  
**Subcontractor, Definition of**  
**5.1.1**  
**SUBCONTRACTORS**  
**5**  
Subcontractors, Work by  
1.2.2, 3.3.2, 3.12.1, 4.2.3, 5.2.3, 5.3, 5.4, 9.3.1.2,  
9.6.7  
**Subcontractual Relations**  
**5.3, 5.4, 9.3.1.2, 9.6, 9.10, 10.2.1, 14.1, 14.2.1**

Submittals  
3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 7.3.7, 9.2, 9.3,  
9.8, 9.9.1, 9.10.2, 9.10.3, 11.1.3  
Submittal Schedule  
3.10.2, 3.12.5, 4.2.7  
**Subrogation, Waivers of**  
6.1.1, **11.3.7**  
**Substantial Completion**  
4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, **9.8**, 9.9.1, 9.10.3,  
12.2, 13.7  
**Substantial Completion, Definition of**  
**9.8.1**  
Substitution of Subcontractors  
5.2.3, 5.2.4  
Substitution of Architect  
4.1.3  
Substitutions of Materials  
3.4.2, 3.5, 7.3.8  
**Sub-subcontractor, Definition of**  
**5.1.2**  
Subsurface Conditions  
3.7.4  
**Successors and Assigns**  
**13.2**  
**Superintendent**  
**3.9**, 10.2.6  
**Supervision and Construction Procedures**  
1.2.2, **3.3**, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4,  
7.1.3, 7.3.7, 8.2, 8.3.1, 9.4.2, 10, 12, 14, 15.1.3  
Surety  
5.4.1.2, 9.8.5, 9.10.2, 9.10.3, 14.2.2, 15.2.7  
Surety, Consent of  
9.10.2, 9.10.3  
Surveys  
2.2.3  
**Suspension by the Owner for Convenience**  
**14.3**  
Suspension of the Work  
5.4.2, 14.3  
Suspension or Termination of the Contract  
5.4.1.1, 14  
**Taxes**  
3.6, 3.8.2.1, 7.3.7.4  
**Termination by the Contractor**  
**14.1**, 15.1.6  
**Termination by the Owner for Cause**  
5.4.1.1, **14.2**, 15.1.6  
**Termination by the Owner for Convenience**  
**14.4**  
Termination of the Architect  
4.1.3  
Termination of the Contractor  
14.2.2  
**TERMINATION OR SUSPENSION OF THE**  
**CONTRACT**  
**14**

**Tests and Inspections**  
3.1.3, 3.3.3, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3, 9.9.2,  
9.10.1, 10.3.2, 11.4.1.1, 12.2.1, **13.5**  
**TIME**  
**8**  
**Time, Delays and Extensions of**  
3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3.1, 7.4, **8.3**, 9.5.1, 9.7,  
10.3.2, 10.4.1, 14.3.2, 15.1.5, 15.2.5  
Time Limits  
2.1.2, 2.2, 2.4, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2,  
5.2, 5.3, 5.4, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3,  
9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 11.1.3, 12.2, 13.5,  
13.7, 14, 15.1.2, 15.4  
**Time Limits on Claims**  
3.7.4, 10.2.8, **13.7**, 15.1.2  
Title to Work  
9.3.2, 9.3.3  
**Transmission of Data in Digital Form**  
**1.6**  
**UNCOVERING AND CORRECTION OF**  
**WORK**  
**12**  
**Uncovering of Work**  
**12.1**  
Unforeseen Conditions, Concealed or Unknown  
3.7.4, 8.3.1, 10.3  
Unit Prices  
7.3.3.2, 7.3.4  
Use of Documents  
1.1.1, 1.5, 2.2.5, 3.12.6, 5.3  
**Use of Site**  
**3.13**, 6.1.1, 6.2.1  
**Values, Schedule of**  
**9.2**, 9.3.1  
Waiver of Claims by the Architect  
13.4.2  
Waiver of Claims by the Contractor  
9.10.5, 13.4.2, 15.1.6  
Waiver of Claims by the Owner  
9.9.3, 9.10.3, 9.10.4, 12.2.2.1, 13.4.2, 14.2.4, 15.1.6  
Waiver of Consequential Damages  
14.2.4, 15.1.6  
Waiver of Liens  
9.10.2, 9.10.4  
**Waivers of Subrogation**  
6.1.1, **11.3.7**  
**Warranty**  
3.5, 4.2.9, 9.3.3, 9.8.4, 9.9.1, 9.10.4, 12.2.2, 13.7  
Weather Delays  
15.1.5.2  
**Work, Definition of**  
**1.1.3**  
Written Consent  
1.5.2, 3.4.2, 3.7.4, 3.12.8, 3.14.2, 4.1.2, 9.3.2, 9.8.5,  
9.9.1, 9.10.2, 9.10.3, 11.4.1, 13.2, 13.4.2, 15.4.4.2  
Written Interpretations  
4.2.11, 4.2.12

Written Notice

2.3, 2.4, 3.3.1, 3.9, 3.12.9, 3.12.10, 5.2.1, 8.2.2, 9.7, 9.10, 10.2.2, 10.3, 11.1.3, 12.2.2, 12.2.4, **13.3**, 14, 15.4.1

Written Orders

1.1.1, 2.3, 3.9, 7, 8.2.2, 12.1, 12.2, 13.5.2, 14.3.1, 15.1.2



## **ARTICLE 1 GENERAL PROVISIONS**

### **§ 1.1 BASIC DEFINITIONS**

#### **§ 1.1.1 THE CONTRACT DOCUMENTS**

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of 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. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding requirements.

#### **§ 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 Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner and the 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 and by separate contractors.

#### **§ 1.1.5 THE DRAWINGS**

The Drawings are the graphic and pictorial portions of the Contract Documents 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, systems, standards and workmanship for the Work, and performance of related services.

#### **§ 1.1.7 INSTRUMENTS OF SERVICE**

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

#### **§ 1.1.8 INITIAL DECISION MAKER**

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

### **§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS**

**§ 1.2.1** 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 indicated results.

**§ 1.2.2** 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.

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

### **§ 1.3 CAPITALIZATION**

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

### **§ 1.4 INTERPRETATION**

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.

### **§ 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE**

**§ 1.5.1** The Architect and the Architect’s consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. 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 or Architect’s consultants’ reserved rights.

**§ 1.5.2** The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect’s consultants.

### **§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM**

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

## **ARTICLE 2 OWNER**

### **§ 2.1 GENERAL**

**§ 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 Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner’s approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term “Owner” means the Owner or the Owner’s authorized representative.

**§ 2.1.2** The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information 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.

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

**§ 2.2.1** Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner’s obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner’s ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or

the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

**§ 2.2.2** Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, 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.

**§ 2.2.3** 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. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

**§ 2.2.4** The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

**§ 2.2.5** Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

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

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to 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 Section 6.1.3.

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

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-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, 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 reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services 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 GENERAL**

**§ 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 Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

**§ 3.1.2** The Contractor shall perform the Work in accordance with the Contract Documents.

**§ 3.1.3** 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 or entities other than the Contractor.

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

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

**§ 3.2.2** Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

**§ 3.2.3** The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

**§ 3.2.4** If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

### **§ 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 the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

**§ 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 or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

**§ 3.3.3** The Contractor shall be responsible for inspection of portions of Work already performed 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** Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

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

### **§ 3.5 WARRANTY**

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and 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**

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are 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, NOTICES AND COMPLIANCE WITH LAWS**

**§ 3.7.1** Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

**§ 3.7.2** The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

**§ 3.7.3** If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

**§ 3.7.4 Concealed or Unknown Conditions.** If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that 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, the Contractor shall promptly provide notice to the Owner and the Architect 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 the Architect determines that 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 promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

**§ 3.7.5** If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume

the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

### § 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 to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 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 but not in the allowances; and
- .3 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 Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

### § 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.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

### § 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's 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 a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's approval. The Architect's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

### § 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of 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 as a record of the Work as constructed.

### § 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. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, 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.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that 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 (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the 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. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be

required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

### **§ 3.13 USE OF SITE**

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities 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. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

**§ 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 waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

**§ 3.15.2** If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from the Contractor.

### **§ 3.16 ACCESS TO WORK**

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

### **§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS**

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and 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, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or 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), but only to the extent caused by the 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 that would otherwise exist as to a party or person described in this Section 3.18.

**§ 3.18.2** In claims against any person or entity indemnified under this Section 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 Section 3.18.1 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' compensation acts, disability benefit acts or other employee benefit acts.

## **ARTICLE 4 ARCHITECT**

### **§ 4.1 GENERAL**

**§ 4.1.1** The Owner shall retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

**§ 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** If the employment of the Architect is terminated, the Owner shall employ a successor architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

### **§ 4.2 ADMINISTRATION OF THE CONTRACT**

**§ 4.2.1** The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

**§ 4.2.2** The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully 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 the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

**§ 4.2.3** On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of 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 any other persons or entities 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 with each other through the Architect about matters arising out of or relating to the Contract. 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 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 has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 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 or entities 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 in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness 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, all 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 Sections 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 Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

**§ 4.2.9** The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; 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 pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

**§ 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 in writing within any time limits agreed upon or otherwise with reasonable promptness.

**§ 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 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.

**§ 4.2.14** The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

## **ARTICLE 5 SUBCONTRACTORS**

### **§ 5.1 DEFINITIONS**

**§ 5.1.1** A Subcontractor is a person or entity who 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 who 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 may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14-day period shall constitute notice of no reasonable objection.

**§ 5.2.2** The Contractor shall not contract with a proposed person or entity to whom 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. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time 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 substitute a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such substitution.

### **§ 5.3 SUBCONTRACTUAL RELATIONS**

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, including the responsibility for safety of the Subcontractor's Work, 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 that may

be at variance with the Contract Documents. Subcontractors will 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 Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

**§ 5.4.2** Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

**§ 5.4.3** Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

### **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 in Article 15.

**§ 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. The Contractor shall make any revisions to the construction schedule 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 that 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 contractor's 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** The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction.

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

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

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

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, the Owner may clean up and the Architect will allocate the cost among those responsible.

## **ARTICLE 7 CHANGES IN THE WORK**

### **§ 7.1 GENERAL**

**§ 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.

### **§ 7.2 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 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

### **§ 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 prior to agreement on 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 a mutually acceptable fixed or percentage fee; or

.4 As provided in Section 7.3.7.

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

**§ 7.3.5** 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.

**§ 7.3.6** A Construction Change Directive signed by the Contractor indicates the Contractor's agreement 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.

**§ 7.3.7** If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment 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, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 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 Section 7.3.7 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' 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.

**§ 7.3.8** 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.

**§ 7.3.9** Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

**§ 7.3.10** When the Owner and Contractor agree with a 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 the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

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

The Architect has 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 will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.

## 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.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 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 and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 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 the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a 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 mediation and arbitration; or by other causes that 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 Article 15.

§ 8.3.3 This Section 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

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

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Architect, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and 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 prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. 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 shall reflect retainage if provided for in the Contract Documents.

**§ 9.3.1.1** As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

**§ 9.3.1.2** Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

**§ 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 the costs of 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 Section 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 evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the 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 correction of minor deviations from the Contract Documents 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 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 Section 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 Section 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 withhold a Certificate for Payment or, because of subsequently discovered evidence, 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 for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1** defective Work not remedied;
- .2** third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;

- .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 a separate 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 repeated 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.

§ 9.5.3 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

## § 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 pay each Subcontractor no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the 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 a 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 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 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.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

## § 9.7 FAILURE OF PAYMENT

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 binding dispute resolution, 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 shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

## **§ 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 that 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 prior to final payment. 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.

**§ 9.8.3** 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 sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

**§ 9.8.4** When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that 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.

**§ 9.8.5** 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. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of 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 Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. 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 Section 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 the Contractor's 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 on-site visits 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 the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 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 canceled 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.

**§ 9.10.4** 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.

**§ 9.10.5** 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.

## **ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY**

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

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

### **§ 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 or 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 comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and 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 Sections 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 Sections 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 Section 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 permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

#### **§ 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY**

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, 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 discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

#### **§ 10.3 HAZARDOUS MATERIALS**

**§ 10.3.1** The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

**§ 10.3.2** Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

**§ 10.3.3** To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, 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 or substance presents the risk of bodily injury or death as described in Section 10.3.1 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), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.

**§ 10.3.4** The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

**§ 10.3.5** The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

**§ 10.3.6** If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

#### **§ 10.4 EMERGENCIES**

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 Article 15 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 and completed 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' 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;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .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;
- .7 Claims for bodily injury or property damage arising out of completed operations; and
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

**§ 11.1.2** The insurance required by Section 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 the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction

of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

**§ 11.1.3** Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

**§ 11.1.4** The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

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

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

### **§ 11.3 PROPERTY INSURANCE**

**§ 11.3.1** Unless otherwise provided, the Contractor 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 written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional 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 Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

**§ 11.3.1.1** Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

**§ 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 effect 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 in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

**§ 11.3.1.3** If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

**§ 11.3.1.4** This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

**§ 11.3.1.5** Partial occupancy or use in accordance with Section 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.

### **§ 11.3.2 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 other special causes of loss 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, at 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 Section 11.3.7 for damages caused by fire or other causes of loss 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 Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, 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 causes of loss to the extent covered by property insurance obtained pursuant to this Section 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 the 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 Section 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 as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

**§ 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 is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.

#### **§ 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 authorize a copy to be furnished.

### **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 requested in writing by the Architect, be uncovered for the Architect's examination 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 that the Architect has not specifically requested to examine 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 at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense 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 BEFORE OR AFTER SUBSTANTIAL COMPLETION**

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

##### **§ 12.2.2 AFTER SUBSTANTIAL COMPLETION**

**§ 12.2.2.1** In addition to the Contractor's obligations under Section 3.5, 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 Section 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. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

§ 12.2.2.2 The one-year period for correction of Work 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 completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 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 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 that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 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

If the Owner prefers to accept Work that 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

The Contract shall be governed by the law of the place where the Project is located except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

### § 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, 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.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

### § 13.3 WRITTEN NOTICE

Written notice shall be deemed to have been duly served if delivered in person to the individual, to 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 or by courier service providing proof of delivery 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 there under, 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 shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. 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 that the Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 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 Section 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 that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

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

§ 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

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 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

## 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 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency that requires all Work to be stopped;

- .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 Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 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.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days 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 repeatedly 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 Section 14.1.3.

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

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 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 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; 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 Initial Decision Maker 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 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 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, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages 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 Initial Decision Maker, 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** The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. 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 the Contract.

#### **§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE**

**§ 14.4.1** The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

**§ 14.4.2** Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

**§ 14.4.3** In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

### **ARTICLE 15 CLAIMS AND DISPUTES**

#### **§ 15.1 CLAIMS**

##### **§ 15.1.1 DEFINITION**

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, 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. The responsibility to substantiate Claims shall rest with the party making the Claim.

##### **§ 15.1.2 NOTICE OF CLAIMS**

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated 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.

##### **§ 15.1.3 CONTINUING CONTRACT PERFORMANCE**

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

##### **§ 15.1.4 CLAIMS FOR ADDITIONAL COST**

If the Contractor wishes to make a 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 Section 10.4.

##### **§ 15.1.5 CLAIMS FOR ADDITIONAL TIME**

**§ 15.1.5.1** If the Contractor wishes to make a 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.

**§ 15.1.5.2** 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, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

### § 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

### § 15.2 INITIAL DECISION

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

### § 15.3 MEDIATION

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

### § 15.4 ARBITRATION

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 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.

§ 15.4.3 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.

### § 15.4.4 CONSOLIDATION OR JOINDER

§ 15.4.4.1 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an

additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

**§ 15.4.4.3** The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.



SECTION 00710  
AMENDMENTS TO AIA DOCUMENTS A201-2007  
GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

GENERAL

The provisions of this attachment shall delete, modify and supplement the provisions contained in the "General Conditions of the Contract for Construction," AIA Document A201-2007 Edition. The provisions contained in this attachment will supersede any conflicting provisions of the AIA Document.

ARTICLE 2, OWNER

Delete subparagraph 2.2.5 and substitute the following:

2.2.5 The Contractor will be furnished, free of charge, 8 copies of the Drawings and Projects Manuals necessary for execution of the Work. Additional copies will be available from the Architect at the cost of reproduction and handling.

ARTICLE 4, ARCHITECT

Add the following to subparagraph 4.1.1:

The term "Architect" means the Architect, or the Engineer when the nature of the work is within the authority granted engineers by the State licensure law, or an authorized representative of the Architect or Engineer.

ARTICLE 7, CHANGES IN THE WORK

Delete the words "Construction Change Directive" from subparagraph 7.1.1.

Delete the words "Construction Change Directive" from subparagraph 7.1.3.

Add subparagraph 7.2.2:

7.2.2 Methods used in determining adjustments to the Contract Sum may include any of the following:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluating.
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon.

Add the following sentence to paragraph 7.3.1: "A Construction Change Directive may be used only for a change in response to an emergency as described in paragraph 10.4.

## ARTICLE 8, TIME

Add the following subparagraph:

8.3.4 As outlined in Article 3 of the Agreement, the Contractor agrees to pay liquidated damages to the Owner for each calendar day the Contractor shall be in default.

## ARTICLE 9, PAYMENTS AND COMPLETION

Delete clause 9.3.1.1 and substitute the following:

9.3.1.1.1 Work performed and materials supplied under a Change Order may be included for payment only after the Change Order has been approved by all appropriate parties.

Add the words ", using AIA Document 702, 'Application and Certificate for Payment'" after "Certificate for Payment" in subparagraph 9.4.1.

Add the following subparagraph:

9.6.8 No progress payments will be made that deplete the retainage, nor place in escrow any funds that are required for retainage, nor invest the retainage for the benefit of the Contractor. Retainage will not be adjusted until after construction is substantially complete.

Replace the work "seven" with the words "fifteen (15)" in the first sentence, second and third lines of subparagraph 9.7.

Delete subparagraph 9.9.1 through 9.9.3 and substitute the following:

9.9.1 The contractor agrees to the use and occupancy of a portion or unit of the Project before formal acceptance by the Owner under the following conditions:

- .1 A "Certificate of Substantial Completion" shall be prepared and executed as provided in subparagraph 9.8.4, except that when, in the opinion of the Architect, the Contractor is chargeable with unwarranted delay in completing the Work or other Contract requirements, the signature of the Contractor will not be required. The Certificate of Substantial Completion shall be accompanied by a written endorsement of the Contractor's insurance carrier

and surety permitting occupancy by the Owner during the remaining period of the Project Work. Occupancy and use by the Owner shall not commence until authorized by public authorities having jurisdiction over the Work.

- .2 Occupancy by the Owner shall not be construed by the Contractor as being an acceptance of that part of the Project to be occupied.
- .3 The Contractor shall not be held responsible for any damage to the occupied part of the Project resulting from the Owner's occupancy.
- .4 Occupancy by the Owner shall not be deemed to constitute a waiver of existing claims in behalf of the Owner or Contractor against each other.
- .5 If the Project consists of more than one building, and one of the buildings is to be occupied, the Owner, prior to occupancy of that building, shall secure permanent property insurance on the building to be occupied and necessary permits which may be require for use and occupancy.

9.9.2 With the exception of clause 9.9.1.5, use and occupancy by the Owner prior to Project acceptance does not relieve the Contractor of responsibility to maintain all insurance and bonds required of the Contractor under the Contract Documents until the Project is completed and accepted by the Owner.

Delete the second and third sentences of subparagraph 9.10.2.

#### ARTICLE 11, INSURANCE AND BONDS

Replace the words "The Contract Documents" with the words "subparagraph 11.1.5" in the first sentence of subparagraph 11.1.2.

Add the following subparagraph:

11.1.5. Insurance shall be:

- .1 Written with a limit of liability of not less than:

General Liability – \$1,000,000

Automobile Liability – \$1,000,000

Umbrella Liability – \$2,000,000

Workers Compensation and Employers' Liability – \$1,000,000

Crew P & I/Pollution – \$1,000,000

Modify the first sentence of subparagraph 11.3.1 as follows:

11.3.1 Delete "Unless otherwise provided, the Owner" and substitute "The Contractor".

Add the following sentences to the end of subparagraph 11.3.1

The policy shall name as the insured the Contractor and the Owner. If the Owner is damaged by the failure of the Contractor to purchase and maintain such insurance without so notifying the Owner in writing, then the Contractor shall bear all reasonable cost attributable thereto.

Insert the word "Owner" after the words "protect the interest of the" in the second sentence of subparagraph 11.3.1.2.

Add the following sentence to the end of subparagraph 11.3.6:

The provisions of this subparagraph shall apply to the Contractor if the Contractor purchases and maintains said insurance coverage.

Delete subparagraph 11.3.7 in its entirety.

Delete subparagraph 11.4.1 and substitute the following:

11.4.1 The Contractor shall furnish the Owner bonds covering faithful performance of the Contract and payment of obligations arising thereunder within ten (10) calendar days after receipt of the Notice of Award. The surety company executing the bonds must hold a certificate of authority as an acceptable surety of Federal bonds as listed in Treasury Circular 570, and be authorized to transact business in the State where the Project is located. The bonds (using the forms included in the Bidding Documents) shall each be equal to the amount of the Contract Sum. The cost of these bonds shall be included in the Contract Sum.

Add the following subparagraphs:

11.4.1.1 The Contractor shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current power of attorney.

11.4.1.2 If at any time a surety on any such bond is declared bankrupt or loses its right to do business in the State in which the work is to be performed or is removed from the list of surety companies accepted on Federal Bonds, the Contractor shall within ten (10) calendar days after notice from the Owner to do so, substitute an

acceptable bond in such form and sum and signed by such other surety or sureties as may be satisfactory to the Owner. The premiums of such bond shall be paid by any Contractor. No further payment shall be deemed due nor shall be made until the new surety or sureties shall have furnished an acceptable bond to the Owner.

#### ARTICLE 13, MISCELLANEOUS PROVISIONS

Add the following paragraphs:

##### 13.8 LANDS AND RIGHTS-OF WAY

13.8.1 Prior to the start of construction, the Owner shall obtain all lands and rights-of-way necessary for the execution and completion of work to be performed under this contract.

#### ARTICLE 15, CLAIMS AND DISPUTES

Add the words "may be" after "on the parties but" in the last sentence of subparagraph 15.2.5.

Replace the word "shall" with the word "may" in the first sentence, first occurrence of subparagraph 15.3.2.

- oOo -

NOTICE OF AWARD

TO: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PROJECT Description: \_\_\_\_\_  
\_\_\_\_\_

The OWNER has considered the BID submitted by you for the above described WORD in response to its Advertisement for Bids dated \_\_\_\_\_, 20\_\_\_\_, and Information for Bidders.

You are hereby notified that your BID has been accepted for items in the amount of \$\_\_\_\_\_.

You are required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTOR's Performance BOND, Payment BOND and certificates of insurance within ten (10) calendar days from the date of this notice to you.

If you fail to execute said Agreement and to furnish said BONDS within ten (10) days from the date of this Notice, said OWNER's acceptance of your BID as abandoned and as a forfeiture of your BID BOND. The OWNER will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

Date this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_

Owner

By \_\_\_\_\_

Title \_\_\_\_\_

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged

by \_\_\_\_\_

this the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

By \_\_\_\_\_

Title \_\_\_\_\_

NOTICE TO PROCEED

TO: \_\_\_\_\_ DATE: \_\_\_\_\_  
\_\_\_\_\_  
Project: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

You are hereby notified to commence WORK in accordance with the Agreement dated  
\_\_\_\_\_, 20\_\_\_\_\_, on or before \_\_\_\_\_, 20\_\_\_\_\_,  
and you are to complete the WORK within \_\_\_\_\_ consecutive calendar days thereafter.  
The date of completion of all WORK is therefore \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
Owner  
By \_\_\_\_\_  
Title \_\_\_\_\_

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED Is hereby acknowledged by:

\_\_\_\_\_, this the  
\_\_\_\_\_, 20\_\_\_\_\_.

By \_\_\_\_\_  
Title \_\_\_\_\_  
Employer Identification Number \_\_\_\_\_

oOo

SECTION 00810  
SUPPLEMENTARY GENERAL CONDITIONS

ARTICLE 1 IDENTIFICATION

For the purpose of the contract documents, the following identification shall be given to these terms:

- Owner: Town of Morehead City  
706 Arendell Street  
Morehead City, NC 28557
- Architect: MK CHALK ARCHITECTURE, P.A.  
P.O. BOX 622  
Morehead City, NC 28557
- Engineer: Any one or all of the Consulting Engineers engaged by the Architect for engineering services for definitive portions of the work whose name and seal appears on the drawings.
- Drawings: Any one or all sheets of drawings entitled:  
JIB Property Waterfront Amenity  
Morehead City, NC
- Also: Any additional sheets similarly identified and consecutively numbered issued from time to time as the work progresses to more clearly illustrate the intent of the above mentioned drawings or to illustrate a contract modification.

ARTICLE 2 GENERAL CONDITIONS

The General Conditions of the contract shall be as contained in AIA Document A201-2007 General Conditions of the Contract for Construction with Amendments, and these Supplementary General Conditions. These conditions shall be applicable to and form a part of each set of contract documents and all of the conditions contained therein will be applicable to the contract between the Owner and the Contractor.

Should anything written in the Supplementary General Conditions conflict in the above mentioned General Conditions or required more inclusive items or set out additional conditions, the Supplementary General Conditions shall take precedence.

ARTICLE 3 ADDITIONAL PROVISIONS TO THE CONTRACT

GENERAL PROVISION: ARTICLE 1

## CONTRACTOR: ARTICLE 3

### 3.1 Execution, Correlation, intent and interpretation

- 3.1.1 No additional cost shall be charged to the Owner for any labor, materials, or service required in executing the Work which is attributed to any condition of the site which was visible at the time of bidding or could reasonably have been concluded by a familiarization with the site and the attendant local conditions.
- 3.1.2 It is the intent that all various items indicated or shown in detail on the plans or mentioned in these specifications shall be completed as one whole unit and any work or item necessary to connect the various parts of the Work to produce that result shall be furnished and done by the Contractor without change in the contract price.
- 3.1.3 Certain drawings are customarily considered diagrammatic in character such as those illustrating electrical, plumbing, and equipment layouts. These drawings must be followed as closely as possible consistent with the construction and should not be scaled. Dimensions must come from field conditions or architectural drawings. Every fitting, device, bend or connection is not necessarily shown, but must be furnished if required to accomplish the operation set out in the specification.

Add Paragraph 3.4.1.1:

3.4.1.1 The Contractor (Project Expediter) shall pay for all utilities costs and other cost such that there will be no additional charge to the owner from the Utility Companies, agencies, or entities for permits, tap fees impact fees or other charges.

After subparagraph 3.10.1., add:

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

### 3.14 Cutting and Patching

3.14.1 Add the following sentence:

The Contractor shall do all cutting, fitting or patching of his work that may be required to fit it to receive or be received by the work of other contractors provided in the Contract Documents.

3.14.3 Add the following paragraph:

The contractor may charge other contractors for the cost of cutting and patching due to the untimely installation or failure to properly notify the contractor of the necessity to accommodate the other contractor's work.

3.14.4 Add the following paragraph:

The Contractor allowing the cutting and patching of his own work by other contractors will remain responsible for the finished quality of his own work even though the cutting and patching may have been done by other contractors.

#### ARTICLE 4 BIDS AND BONDS

Each contractor submitting a bid on work covered by these contract documents shall:

1. Hold a Contractor's license of the proper classification according to and in compliance with the laws of North Carolina applicable to his branch of the work and shall place the number and classification of such licenses on the outside of the envelope containing the Contractor's sealed bid.
2. The Act of considering a bid from any bidder shall be construed only as a business courtesy extended to the contractors by the Owner who reserves the right, and each bidder by his act of submitting a bid thereby concurs in the right of the Owner, to reject any or all bids without further obligation to any bidder; nor shall the owner be called upon to make known the reason for doing so.
3. The owner likewise reserves the right to waive any or all formalities consistent with the North Carolina General Statutes 143 Article 8 in receiving, considering, or accepting any bid submitted, which may, in their opinion, expedite the awarding of the contract, or are in the best interest of the project.
4. Attached to his bid as bid security a bid bond or certified check in an amount equal to five percent (5%) of the bid; bond or check shall be issued to the Owner, named precisely as in the preceding "Identification" paragraph Article 1, by a surety company authorized to do business in North Carolina.
  - a. Should any bidder to whom the contract has been awarded refuse or fail to sign the contract and file payment and performance bond hereinafter described within five days after being notified in writing by the Architect that the contract has been awarded to him, he shall forfeit the full amount of his bid security as liquidated damages for refusal or failure on the part of the bidder. All conditions of this paragraph are applicable to all bidders in sequence established by the amount of their bids beginning with the lowest bid.
  - b. Bid bonds in the form of checks shall be returned promptly to the bidder after the bids have been opened, and the contract awarded to and signed by the successful bidder; in any case, not later than sixty (60) days after the date set for the opening of the bids.

5. File with the Owner at the time a contract is signed a performance bond in an amount equal to one hundred percent (100%) of the contract price and a payment bond equal to one hundred percent (100%) of the contract price, both issued by a surety company authorized to do business in North Carolina. Bond will be on the standard A.I.A. form of Surety Association of America and issued in favor of the Owner.

## ARTICLE 6 EQUALS AND SUBSTITUTES

1. Equal products are those products of similar material, quality, use and design to that specified, but produced by a different manufacturer. Their use does not modify or change a requirement of the specification other than the trade name.
2. Substitute products are products of similar use to that specified, produced by the same or different manufacturers, which requires a modification or change in the specifications and thereby involves a modification of the contract documents (change order) with the attendant contract price adjustments.
3. In the specification, products and processes will be referred to by trade names, Federal Specification, ASTM Standards, industry referenced standards and/or generic name; the phrase "or equal" may also occur. In these cases, the following options shall be available to the contractor, depending on the method of specification used.
  - a. If three or more trade names with attendant product identification are listed for a single product, the contractor may furnish any of the products listed but his choice will be limited to those listed.
  - b. If one trade name and attendant product identification is given followed by the expression "or equal products manufactured by" and a list of two or more manufacturers are given, the contractor shall use the product named or he may use a product of, and shall be limited to, one of the other manufacturers listed, provided that the product used is similar in design, quality, and use to the product identified. However, the burden of proof that such is the case is the Contractor's, and he shall submit such evidence to the Architect for approval before incorporating the product into the work or including it in a request for payment.
  - c. If one or more industry, Federal or ASTM reference standard is used without any other proprietary identification, the contractor may furnish any product available to him which meets these requirement; however, the burden of proof that such is the case is the Contractor's, and he shall submit such evidence to the Architect for approval before incorporating the product into the work or including it in a request for payment
  - d. If a trade name is listed for a product followed by the phrase "or equal", the Contractor shall use the product named, or he may use another product provided he obtains the written approval of the Architect. Naming of a product in this case shall be interpreted as establishing a standard of quality by which any product of similar design, operation and use will be compatible if submitted by the Contractor for approval.

- e. In the event that the project is publicly funded, the phrase "or equal" is implied following the listing of any and all products and the procedure shall be the same as if it were so written.
4. Consistent with statutory requirements, the Architect's decision in the matter of an equal or a substitute product shall be final and binding on all interested parties. An adverse decision on any such request made by the Contractor constitutes the Architect's professional opinion of the products and combination of materials most advantageous for the project, and creates no reflection or discredit on any materials, supplier, or manufacturer.

## ARTICLE 7 CHANGE IN THE WORK

The establishment of the cost or credit for changes in the work executed under the General Conditions 12.1.4 shall be the sum of the following listed items.

Evidence of these charges will be delivered to the Architect when submitting costs or credits for change in the work.

1. Invoice cost of materials entering permanently into the work.
2. Actual time on the site of properly classified labor to perform the work. Time will be verified by the Contractor's time records and must be approved by the Architect.
3. Cost of FICA Insurance and Workmen's Compensation Insurance based on Cost of Labor.
4. Invoice cost to the contractor or consumable supplies used on the site in performance of the work.
5. Cost of rental of power tools necessary for use in the work. Only such time as necessary for transportation of tools and time to do the operation will be allowed.
6. Twenty Percent (20%) of the sum of items 1, 2, 3, 4, and 5 above shall cover overhead, bond, other insurance, profit, supervision of foremen and job superintendent, and all other general expenses.

The allowances for overhead and profit combined shall not exceed twenty percent (20%) or net cost except where the change involves a subcontractor, allowance shall not exceed fifteen percent (15%) for the subcontractor, and ten percent (10%) for the prime contractor. In the case of deductible change orders, the contractor shall include no less than five percent (5%) profit, but no allowances for overhead.

## ARTICLE 8 DAMAGED WORK

Any damaged work, regardless of whose responsibility or who damaged the work, shall be immediately removed and replaced, or repaired to its original condition by the contractor whose work it is.

## ARTICLE 9 SAFETY OF OPERATIONS

Each contractor shall familiarize himself with Rules & Regulations Governing the Construction Industry as promulgated by the N.C. Commissioner of Labor under N.C. General Statutes Section 95-11 and The Williams-Steiger Occupational Safety and Health Act of 1970 (including any subsequent additions and/or modification administered by the N.C. Department of Labor and shall be responsible for conducting his operation in accordance thereof.

## ARTICLE 10 TIME OF COMPLETION PENALTY

The contract price will be reduced in an amount equal to a prorated share of \$150 per day beginning ninety days (90 days) from the receipt of written notice to proceed and continuing for each calendar day thereafter until substantial completion of the project, with credit allowed for accumulated time extension.

No extension of time will be considered for any cause whatsoever except where the delay is primarily attributable to acts of neglect by the Architect or the Owner, or by modification in the work where a resulting time extension explicitly sets forth as part of the consideration of the modification, or by fire damage to the work on the site or by labor dispute which effectively eliminates all sources of the material involved or prevents the delivery or use thereof.

Where separate contractors are involved, contractors may submit in writing to the Architect, with copies to the offending contractor, a statement attributing delay of the project to another contractor. The Architect will consider such allegations in assessing the distribution of penalty, but will not be bound by them.

The Architect will be the judge as to the assessment of the prorated share of the penalty assessed to each prime contractor on the project.

## ARTICLE 11 UNCOVERING AND CORRECTION OF WORK

### 12.2.2 Guarantee Period

Guarantee period referred to in Article 13 of the General Condition shall be a period of one (1) year from substantial completion of the project or from final acceptance of that portion of the work involved, whichever is the later, except that manufacturers' standard warranties and specified special guarantee, warranties shall extend for their full time period if longer.

## ARTICLE 12 RETAINAGE

The Owner will retain Five Percent (5%) of construction funds approved by the Architect accumulating until substantial completion is achieved at which time the retainage may be reduced to an amount sufficient to cover the cost of completing all Punchlist items remaining.

## ARTICLE 13 COMPLETION INSPECTIONS

The Contractor shall prepare for several inspections in closing out the project.

1. Pre-final Inspection
  - a. Near completion of the work, the Architect (or Engineer) will inspect the work, making a list of items for completion and correction.
2. Final Inspection
  - a. After all, or most, of the pre-final corrections and completions have been made, the Architect, with the Owner, will inspect the work, defining any work that is unacceptable, incomplete or requiring further correction.
3. City Building Inspections
  - a. City Building Inspections will be inspecting the work as it progresses. The Contractor should arrange for the building inspectors' final inspection and the issuance of a "Certificate of Occupancy". This inspection is a legal inspection, separate and apart from the aforementioned contractual inspections. If demands of the City Inspector exceed or otherwise require work beyond that indicated, specified, or reasonable implied by the contract documents, or beyond that which an experienced contractor working in the area would normally be aware, appropriate change orders will be issued.
4. County Environmental Health Inspection
  - a. County Sanitarians may inspect the work with particular attention to water systems, sewage disposal system, toilets, kitchens, and storage areas. Workmanship, surface finishes, fixtures, and equipment in these areas must meet the standards of the N.C. Health Department as interpreted by these officers. Should the demands of the sanitarian exceed or otherwise require work beyond that indicated, specified or reasonably implied by the contract documents, appropriate change orders will be issued.

## ARTICLE 15 NORTH CAROLINA DEPARTMENT ENVIRONMENT AND OF NATURAL RESOURCES INSPECTION

Inspectors from the NC DENR will visit the site from time to time enforcing the CAMA soil erosion and sediment control laws and regulations. This is a legal inspection and the Contractor is required to comply.

1. The Contractor shall indemnify the Owner from damages or civil penalties resulting from the contractor's performance or failure of performance of the work being in violation of the Sediment Pollution Control & Water Runoff Acts, or the Coastal Area Management Act.
2. Upon receipt of notice that a land disturbing activity is in violation of said Act, the Contractor(s) shall be responsible for insuring that all steps or actions necessary to bring the project into compliance with said Act are promptly taken.

## ARTICLE 16 PARTICIPATION OF MINORITY & FEMALE BUSINESSES

### 1. Statement of Policy

- a. It is the policy of the Town of Morehead City to have an appropriate verifiable percentage goal for participation by minority businesses, as the same are defined in G.S. 143-128(c)(2), in the total value of work for each project for which Public Contract or Contracts are awarded pursuant to G.S. 143-128; and to award Public Contracts without regard to race, religion, color, creed, national origin, sex, age or handicapping condition.

### 2. Statement of Objectives

- a. For purposes of ensuring participation by minority and female businesses in the awarding of public contracts by the Town, the Town has adopted ten percent (10%) as an appropriate verifiable percentage goal for participation by minority and female businesses in the total value of work for which a contract or contracts are awarded in either a separate-prime contract system or a single-prime contract system, pursuant to G.S. 143-128.

### 3. Procedures

- a. Contractors are required to negotiate in good faith with interested minority and female businesses, rejecting them only for sound reasons after a thorough investigation of their offers and capabilities.
- b. The low bidder for a single prime contract shall be required to provide the following information prior to the award of a contract:
  - (1) The names and addresses of minority and female businesses which will participate in the Contract; and a description of the work which each will perform and the dollar amount of participation by each.
  - (2) The names and addresses of each minority and female business contracted.
  - (3) The name and address of each minority and female business responding to the Prime Contractor or otherwise demonstrating an interest in performance of any part of the work and the reasons each such minority or female business was rejected or otherwise failed to be awarded any work.

(4) A copy of all advertisements or correspondence the bidder has used to attract minority and female businesses.

4. Lowest Responsible Bidder

- a. Nothing in this policy shall be construed to require contractors or the Owner to award contracts or subcontracts to or to make purchases of materials or equipment from minority or female business contractors or minority or female business subcontractors who do not submit the lowest responsible bid or bids.

END OF SECTION 00810

SECTION 01010  
SUMMARY OF THE WORK

PART 1 - GENERAL

The extent of work to be performed under the Contract for this project is itemized below. A summary of information included in this Section is as follows:

General project description.  
Contract documents.

1.1 Related work specified elsewhere:

- A. Section 01030: Alternates
- B. Section 01025: Unit Prices

1.2 GENERAL PROJECT DESCRIPTION

- A. The General Contractor shall, unless otherwise specified, supply all labor, transportation, materials, apparatus, fuel, water, energy, light, permits and tools and other items necessary for entire, proper and final completion of his work and shall install, maintain, and remove all equipment for construction, and shall be responsible for the safe, proper and lawful construction, maintenance and use of same and shall construct in the best and most workmanlike manner a complete project and everything incidental thereto as shown on plans, stated in specifications or reasonably implied therefrom, all in accordance with the Contract Documents.
- B. No toxic substances are to be introduced during any construction operation beyond the use of diesel/fuel oil, gasoline, and lubricants which will be managed by each Contractor in accordance with existing environmental regulations. No chemical eradication of plants will be permitted.
- C. Project Scope: The scope of the project generally includes but is not limited to the following:

The work consists of construction of the following:

- 1. A public plaza (JIB Plaza) approximately 4976 SF in size to include brick paving, landscaping, site bollards, utility connections, a fountain and base for the "Marlin Sculpture" including foundations, structure, fountain and sculpture base, structural connections for the Marlin Sculpture, fountain plumbing, electrical, equipment, controls, and other items as shown on the drawings.

The Marlin Sculpture will be provided by the Big Rock Blue Marlin Tournament Committee. The Sculpture will be delivered to the project and installed during the final 30 days of the project. The General Contractor shall be responsible for constructing the sculpture base and structural connections as indicated in the construction documents, and shall provide full access to the site and fountain to the sculptor and staff for installation of the sculpture. Once the sculpture is installed, the General Contractor shall make all reasonable efforts to protect the sculpture from construction related damage.

2. An observation Deck approximately 1600 SF in size, located immediately south of the existing concrete bulkhead fronting onto the Morehead Channel of Bogue Sound. The deck will consist of treated wood decking, rails, and structure, supported on concrete piles. This part of the work also includes bid add Alternate G-3, the demolition and removal of an existing wooden dock structure.
3. Removal of approximately 5000 SF of existing asphalt paving from Shepard Street adjacent to the site, and replacing with brick paving on concrete base, two landscaping planters and adjoining asphalt paving.

D. Team Members:

OWNERS:

Town of Morehead City  
David McCabe  
Director of Public Works  
706 Arendell Street  
Morehead City, NC 28557  
Phone: (252) 726-6848  
Fax: (252) 726-2267

PRINCIPAL ARCHITECT:

MK CHALK ARCHITECTURE, P.A.  
P.O. Box 622  
Morehead City, NC 28557  
Phone: (252) 726-3099  
mkcarchitect@ec.rr.com

ASSOCIATE ARCHITECT:

Burnette Architecture & Planning, P.A.  
105 Banks Street  
Morehead City, NC 28557  
Phone: (252) 726-5387  
Fax: (252) 726-1250  
burnettearch@embarqmail.com

CIVIL ENGINEER & SURVEYING:

McDavid Associates  
109 E. Walnut Street, PO Box 1776  
Goldsboro, NC 27566  
Phone: (919) 736-7630  
Fax: (919) 736-7351  
ftl@mcdavid-in.com

MARINE & STRUCTURAL ENGINEER:

Andrew Consulting Engineers  
3811 Peachtree Avenue, Suite 300  
Wilmington, NC 28403  
Phone: (910) 202-5555  
Fax: (910) 202-5558  
neal@andrewengineers.com

MECHANICAL ELECTRICAL:

Stroud Engineering, P.A.  
107 B Commerce Street  
Greenville, NC 27858  
Phone: (252) 756-9352  
Fax: (252) 756-2345  
mstroud@stroudengineer.com

CONSULTING ENGINEER:

W.F. Parker  
565 Neptune Drive  
Cape Carteret, NC 28584  
Phone: (252) 241-3076  
FAX: (252) 764-2671  
wfparker@ec.rr.com

1.3 CONTRACT DOCUMENTS

A. General

The work can be summarized by reference to the requirements of the various contract documents, which in turn make the reference to the requirements of other applicable provisions which control or influence the work; and these references can be summarized but are not necessarily limited to the following:

The General and Supplementary General Conditions with Amendment, and Supplementary General Conditions, which are bound herewith, contained in the Project Manual.

The Drawings, which comprise the total drawings for this project, as listed in the "Index of Drawings" on the Drawing Cover Sheet.

The Project Manual including:

The Specification Sections, which comprise the total specifications for this project, are listed in the Table of contents, which is bound herein.

Alternate Bids: See Section 01030 "Description of Base Bid and Bid Alternates", for a description of Alternate Bids which are to be submitted with the bid proposals.

#### 1.4 CONTRACT TYPE

A. The work will be accomplished under:

A Single Prime contract consisting of

A Lump Sum Agreement between Owner and Contractor as executed, along with any Addendums and attachments.

END OF SECTION 01010

SECTION 01025  
UNIT PRICES

PART 1 GENERAL:

- A. Submit with the Bid, in the spaces provided on the Form of Proposal, Unit Prices for the items described below which shall determine the value of any extra work or changes. The unit price shall reflect adding the described work or deleting it from the base bid where applicable; and shall be considered complete including, as applicable, all material, equipment, labor, substrate preparation, installation costs, overhead and profit.
- B. The contract documents define, describe, or reasonably imply the total extent of work to be performed under the Base Bid. Unit prices are bid for the purpose of increasing the scope of work to accommodate field conditions where such conditions may not be reasonably predicted.
- C. If utilized, the unit price work described in this section shall be incorporated in the Contract Amount by Change Order and included in the Construction Sequence in the same manner as if it had been a part of the Base Bid. Unit Price work begun without written approval of the Architect will be at the expense of the Contractor. The unit price shall not include cost of demolishing new construction to accommodate the described unit price item.
- D. Unit prices are net and no profit or overhead shall be added or deducted when applying unit prices.

PART 2 SCHEDULE OF UNIT PRICES:

- A. Earthwork:
  - 1. Excavation and disposal of unsatisfactory soil materials and replacements with compacted satisfactory soil materials from off-site sources, on a cubic yard in place cost basis. Base bid shall include all grading shown in the construction documents. Unit prices shall be utilized only if unforeseen conditions arise.
- B. Concrete Piles
  - 1. See Section 02360 Concrete Piles for description of Unit Prices. Contractor shall provide a price per Linear foot for additional pile lengths required or credit for pile lengths less than indicated.

END OF SECTION 01025

SECTION 01030  
ALTERNATE BIDS

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

- A. Submit with the bid, in the space provided on the Bid Form, alternate bids stating the differences in price from the Base Bid for the work scheduled below. The Owner reserves the right to accept or reject the alternate bids.

1.2 SELECTION OF ALTERNATE

- A. In accepting an alternate, the Owner assumes that the bidder has examined the site drawings, specifications, and is aware of all adjustments of affected work necessary to accomplish the stated desired results, whether or not all such adjustments are described within the Schedule of Alternate Bids.
- B. Materials and work shall conform to the application sections of the specifications and to typical details on the drawings for the type of work involved.

1.3 SCHEDULE OF ALTERNATE BIDS

- A. General: The description of the Alternate Bids indicated is understood to be incomplete and abbreviated, and does not necessarily detail the full range of materials and processes needed to complete the work for each alternate, but is intended to imply the scope of such work. Coordinate related work and modify surrounding work as required to properly integrate with the work of each alternate.

PART 2 - MATERIAL (Not Used )

PART 3 - EXECUTION (Not Used)

PART 4 - SCHEDULE OF ALTERNATE BIDS

4.1 Alternate No G-1: [DEDUCT]

Omit all work including demolition of existing asphalt paving and planter and replacement with new asphalt paving, brick and concrete paving and planters in the area shown on Shepard Street between the existing concrete valley gutters on each side of the street as indicated on the drawings, and shall include all earthwork, grading, base courses, underlayment, concrete edge strips, drainage, utility coordinations and all other items required for complete and finished work. Contractor retains the obligation to make all utility connections, excavations, and patching paving as necessary.

4.2 Alternate No G-2: [ADD]

Provide engraving of 68 granite trophy plaques with information as listed in specification Section 09750 Architectural Granite and as indicated on the drawings. Each plaque will

include the year, name, and other information regarding the winner as listed in the project manual under "Previous Winners - Big Rock Blue Marlin Tournament" and "Big Rock Lady Anglers Winners" and as shown on the drawings.

4.3 Alternate No G-3: [ADD]

Provide demolition and removal of the existing wooden dock located on and adjacent to the west property line of the project and extending from the existing concrete bulkhead approximately 75 feet northward over the water. Demolition and removal shall include all decking, structure, fasteners, and piling. Extend the new observation deck westward to the jog in the existing concrete bulkhead.

END OF SECTION 01030

SECTION 01050  
FIELD ENGINEERING

PART 1 - GENERAL

1.1 DESCRIPTION

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

1.2 SUBMITTALS

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

1.3 PROCEDURES

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

END OF SECTION 01050

SECTION 01200  
PROJECT MEETINGS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work included: To enable orderly review during progress of the Work, and to provide for systematic discussion of problems, the Architect will conduct project meetings throughout the construction period.

1.2 QUALITY ASSURANCE

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

1.3 SUBMITTALS

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

PART 2 - PRODUCTS

(No products are required in this Section)

PART 3 - EXECUTION

3.1 PROJECT MEETINGS

- A. Except as noted below for Preconstruction Meeting, project meetings will be held monthly. More frequent meetings may be called by the Architect as required.
- B. Meeting times shall be established by the Architect.

### 3.2 PRECONSTRUCTION MEETING

- A. Prior to starting any work on the site. The Contractors, Owner, and Architect shall conduct a pre-construction conference at a time and place to be determined. The Contractor shall make arrangements for their project manager and superintendent to attend along with representatives of the major subcontractors. At this time all parties will discuss the project, its schedule and the administrative procedures required by the Contract Documents.
- B. Minimum agenda: Data will be distributed and discussed on at least the following items:
  - 1. Organizational arrangement of Contractor's forces and personnel, and those of subcontractors, materials suppliers, and Architect.
  - 2. Channels and procedures for communication.
  - 3. Construction schedule, including sequence of critical work.
  - 4. Contract Documents, including distribution of required copies of original Documents and revisions.
  - 5. Processing of Shop Drawings and revision.
  - 6. Processing of Bulletins, field decisions, and Change Orders.
  - 7. Rules and regulation governing performance of the work.
  - 8. Procedures for safety and first aid, security, quality control, housekeeping, and related matters.
  - 9. Demolition
  - 10. Coordination regarding street closure, material deliveries, material staging and parking.
- C. Prior to the start of work, the Contractors, Architect, and the Owner's representative shall survey and record job site conditions including conditions along designated routes of travel to determine later the contractor's responsibilities in the event that damage to existing pavement, trees or vegetation occurs.

Each Contractor shall provide adequate protection of work in place, existing buildings, and adjacent grounds while conducting various construction operations. In the event that damage occurs, the affected areas shall be restored to a condition equivalent to adjacent undamaged areas, at no expense to the Owner.

### 3.3 MONTHLY PROJECT MEETING:

- A. After the initial pre-construction conference, the Owner, Architect, Project Engineers, and Contractors will attend monthly progress meetings, as described in Section 01200 are to be held at the job site for the purpose of reviewing the progress to date, projecting work to be performed during the next thirty (30) days, and discussing any other situation pertinent to the successful completion of the work.
- B. Each Contractor shall require every entity involved with the status of the project at the point in time to be properly represented at each meeting. Areas to be discussed will include status of conditions, and anything else of significance which could affect the

progress of the work. Other more frequent meetings may be called by the Architect as may be required. The Architect will conduct the meeting, prepare and distribute minutes of each meeting to the Owner and the Contractors.

- C. Minimum agenda:
  - 1. Review progress of the work since last meeting, including status of submittals or approval.
  - 2. Identify problems which impede planned progress.
  - 3. Develop corrective measures and procedures to regain planned schedule.
  - 4. Complete other current business.
  
- D. Purpose: The purpose of the project meeting will be to review progress to date, to project work to be performed during the next 30 days, and to discuss and coordinate any situations or conditions which are pertinent to the successful and timely completion of the work. Areas to be discussed will include the status of completed work, deliveries, interfacing with other trades, change orders, weather conditions, and anything else of significance which could affect the progress of the work.

END OF SECTION 01200

SECTION 01210  
PRICE AND PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 ALTERNATES

A. See Section 01030 for Bid Alternates to be included in the bid proposal.

1.2 SCHEDULE OF UNIT PRICES

A. See Section 01025 for Unit prices to be included in the bid proposal.

1.3 CONTRACT MODIFICATION PROCEDURES

- A. Upon the Owner's approval of a proposal from the Contractor, submitted either in response to a Proposal Request issued by the Architect or as a request for change from the Contractor, the Architect will issue a Change Order on AIA Document G701, for all changes to the Contract Sum or Contract Time.
- B. When the Owner and Contractor disagree on the terms of a proposal, the Architect may issue a Construction Change Directive on AIA Document G714, instructing the Contractor to proceed with the change. The Construction Change Directive will contain a description of the change, and designate the method to be followed to determine changes to the Contract Sum or Contract Time.

1.4 PAYMENT PROCEDURES

- A. Submit a Schedule of Values which breaks down the Contract Sum into at least one line item for each Specification Section with greater detail as required to separate and quantify the work for accurate payment. Additionally, the schedule of values shall provide separate line listings for all work required for construction of the fountain and all supporting work including but not limited to treatment vault, piping, plumbing and electrical. Correlate the Schedule of Values with the Contractor's Construction Schedule.
1. Schedule of Values shall be described on the continuation sheet of AIA document G703
  2. Submit Schedule of Values at least 15 days prior to the first Application for Payment.

3. Meet with the Architect and determine additional data, if any, required to be submitted.
4. Schedule of Values must be approved by the Architect prior to submitting first Application for payment.

1.5 SALES TAX

- A. Contractor shall submit a listing and total of all sales tax paid for materials used on the project with each application for payment.
- B. Submit 4 copies of each Application for Payment on AIA Document G702/703, in accordance with the schedule established in the Agreement.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01210

SECTION 01340  
SUBMITTALS AND SUBSTITUTIONS

PART 1 - GENERAL

1.1 DESCRIPTION

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

1.2 QUALITY ASSURANCE

- A. "Equals" and Substitutions:
  - 1. The Contract is based on the standards of quality established in the Contract Documents. Requests for substitutions will be considered when submitted in writing with appropriate documentation of submitted products.
  - 2. Where the phrase "or equal" or "equal as approved by the Architect" occurs in the Contract Documents, do not assume that the Contractor's choice of materials, equipment, or methods will be approved as equal unless the item has been specifically so approved for this Work by the Architect.

Do not substitute materials, equipment, or methods unless such substitution has been specifically approved in writing for this Work by the Architect.

1.3 SUBMITTALS

- A. Coordinate submittal preparation with construction schedule, fabrication lead-times, other submittals, and other activities that require sequential operations.

1. No extension of Contract Time will be authorized due to failure to transmit submittals in time to permit processing sufficiently in advance of when materials are required in the Work.
  2. Architect will not accept submittals from sources other than Contractor.
- B. Prepare submittals by placing a permanent label on each for identification. Provide a 4- by 5-inch (100- by 125-mm) space on the label or beside title block to record review and approval markings and action taken. Include the following information on the label:
1. Project name.
  2. Date.
  3. Name and address of Contractor.
  4. Name and address of subcontractor or supplier.
  5. Number and title of appropriate Specification Section.
  6. Contractor's certification that materials comply with specified requirements.
- C. Product Data: Mark each copy to show applicable choices and options. Include the following:
1. Data indicating compliance with specified standards and requirements.
  2. Notation of coordination requirements.
  3. For equipment data, include rated capacities, dimensions, weights, required clearances, and furnished specialties and accessories.
- D. Coordination of Submittals:
1. Prior to each submittal, carefully review and coordinate all aspects of each item being submitted.
  2. Verify that each item and the submittal for it conforms in all respects to the specified requirements.
  3. By affixing his signature to each submittal, the Contractor certifies that this coordination has been performed.
- E. The approval of substitute products shall be in accordance with the following conditions: All requests for substitutions must reach the Architects office a minimum of twelve (12) working days prior to the receipt of bids. Any requests for substitutes after that time will not be considered.
- F. Responsibility remains with each Contractor for conforming to applicable provisions of the Contract Documents, including guarantees; standards of performance and appearance; coordination with other work caused by differences between the approved substitute and the specified standard; and correction of deficiencies in the approved substitute which were misrepresented or not clearly indicated in the submittal.

- G. Identify products proposed as substitutes for specified products and include the following for each item:
1. Itemized comparison of proposed substitution with specified standard.
  2. Product identification and description, including manufacturer's name and address, performance and test data and appearance.
  3. In addition to the above, all substitutions must be approved in accordance with requirements of the General Conditions.

#### 1.4 CONSTRUCTION SCHEDULE

- A. Prepare a horizontal bar-chart-type, construction schedule. Provide a separate time bar for each activity and a vertical line to identify the first workday of each week. Use same breakdown of Work indicated in the Schedule of Values. As Work progresses, mark each bar to indicate actual completion.
1. Submit within 10 days of the date established for Commencement of the Work.
  2. Prepare the schedule on reproducible media, of width sufficient to show data for the entire construction period.
  3. Coordinate each element with other activities. Show each activity in proper sequence. Indicate sequences necessary for completion of related Work.
  4. Indicate Substantial Completion and allow time for Architect's procedures necessary for certifying Substantial Completion.
  5. Schedule Distribution: Distribute copies to Owner, Architect, subcontractors, and parties required to comply with dates.
  6. Updating: Revise the schedule after each meeting or activity where revisions have been made.

#### 1.5 SHOP DRAWINGS

- A. Scale: Make Shop Drawings accurately to a scale sufficiently large to show all pertinent aspects of the item and its methods of connection to the Work.
- B. Measurements: Shop Drawings shall reflect actual dimension in the field. Coordination and checking of dimensions shall be the responsibility of the Contractors.
- C. Shop Drawings: Submit newly prepared information drawn to scale. Indicate deviations from Contract Documents. Do not reproduce Contract Documents or copy standard information. Submit 4 blue- or black-line prints on sheets at least 8-1/2 by 11 inches but no larger than 24 by 36 inches. Architect will return two marked-up copies. Include the following:
1. Dimensions, profiles, methods of attachment, coordination with adjoining work, large scale details, and other information, as appropriate for the Work.
  2. Identification of products and materials.

3. Notation of coordination requirements.
  4. Notation of dimensions established by field measurement.
- D. Samples: Submit Samples finished as specified and identical with the material proposed. Where variations are inherent in the material, submit at least 3 units that show limits of the variations. Include product name or name of the manufacturer.
  - E. Architect will review each submittal, mark as appropriate to indicate action taken, and return copies less those retained. Compliance with specified requirements remains Contractor's responsibility.
  - F. Review comments of the Architect will be shown in red on prints and returned to the Contractor. The Contractor may make and distribute such copies as are required for his purposes.

## 1.6 MANUFACTURER'S LITERATURE

- A. Where contents of submitted literature from manufacturers includes data not pertinent to the submittal, clearly show which portions of the contents are being submitted for review.
- B. Submit the number of copies which are required to be returned, plus one copy which will be retained by the Architect.

## 1.7 SAMPLES

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

## 1.8 IDENTIFICATION OF SUBMITTALS

- A. Consecutively number all submittals.

1. When material is resubmitted for any reason, transmit under a new letter of

transmittal and with a new transmittal number.

2. On resubmittals, cite the original submittal number for reference.
- B. Accompany each submittal with a letter of transmittal showing all information required for identification and checking.
  - C. On at least the first page of each submittal, and elsewhere as required for positive identification, show the submittal number in which the item was included.
  - D. Maintain an accurate submittal log for the duration of the Work, showing current status of all submittals at all times. Make the submittal log available to the Architect for his review upon request.

#### 1.9 GROUPING OF SUBMITTALS

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

#### 1.10 TIMING OF SUBMITTALS

- A. Coordinate preparation and processing of submittals with performance of the work so that work will not be delayed by submittals. Sequence submittals by groups, such as all items requiring color selection, so that one will not be delayed for coordination with another. No extension of time will be allowed because of failure to properly coordinate and sequence submittals.

#### 1.11 ARCHITECT'S REVIEW

- A. Review by the Architect does not relieve the Contractor from responsibility for errors which may exist in the submitted data.
- B. Revisions:
  1. Make revisions required by the Architect.
  2. If the Contractor considers any required revision to be a change, he shall so notify the Architect as provided for in the General Conditions.
  3. Make only those revisions directed or approved by the Architect.

2.4 PART 2 - PRODUCTS (Not Applicable)

3.5 PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01340

SECTION 01400  
QUALITY CONTROL

PART 1- GENERAL

1.1 SUMMARY

- A. Quality control services include those inspections and tests and related actions performed by independent agencies and governing authorities, as well as directly by Contractor.
  - 1. Testing (type, location, extent and frequency) shall be as described in the various sections of the specifications.
  - 2. The testing service and its representatives do not have the authority to authorize work or changes in the work. Work performed by Contractors without Owner/Architect approval shall be entirely at the Contractors risk. The Owner will not be financially responsible for work performed without the Owners approval.
- B. Inspections, tests, and related actions specified in this Section and elsewhere in Contract Documents are not intended to limit Contractor's quality control procedures, which facilitate compliance with requirements of Contract Documents.
- C. Requirements for quality control services by Contractor, as requested by Architect/Engineer, Owner, governing authorities or other authorized entities are not limited by provisions of this Section.
- D. Contractors shall review and become familiar with the requirements of Tests and Inspections, and of the General and Supplementary Conditions covering the provisions for testing of the Work.

1.2 OWNER RESPONSIBILITY

- A. Inspections, tests, and quality control services are the Contractor's responsibility. The cost for testing as described in this section and as required herein and in other sections of the specifications shall be paid by the contractor. Additional testing requested by the owner shall be paid by the owner if the testing finds the work in compliance with project requirement. All testing of work found to be in non-compliance shall be paid by the contractor.
- B. The Owner shall provide and pay for testing of concrete piles as described in Section 02360 Concrete Piles.

### 1.3 CONTRACTOR RESPONSIBILITY

- A. Initial Testing shall be paid by the contractor.
- B. Retest Responsibility: Where results of required inspection, test, or similar services are unsatisfactory (do not indicate compliance of related work with requirements of Contract Documents), retests are responsibility of Contractor; Retesting of work revised or replaced by Contractor is Contractor's responsibility. Failed tests are paid for by the Contractor, including additional related costs for taking samples, testing, travel and reports etc.
- C. Responsibility for Associated Services: Contractor is required to schedule required inspections and testing and to cooperate with independent agencies performing required inspections, tests, and similar services.
- D. Coordination: Scheduling of times for inspections, tests, taking of samples, and similar activities is Contractor's responsibility.
- E. Sampling and testing as required by the project manual specification, and drawings shall be performed by an independent testing agency and paid for by the Contractor.
- F. Test procedures to be used shall be submitted for approval of the Architect where other than those specified are recommended by the testing agency.

### 1.4 CONTRACTOR'S CONVENIENCE TESTING

- A. Inspection and testing performed exclusively for the Contractor's convenience and quality assurance, shall also be the sole responsibility of the Contractor.

### 1.5 QUALIFICATION OF LABORATORY

- A. Shall meet "Recommended Requirements of Independent Laboratory Qualifications," published by American Council of Independent Laboratories. For concrete and steel the laboratory shall comply with the basic requirements of ASTM E 329, "Standards of Recommended Practice for Inspection and Testing Agencies for Concrete and Steel as Used in Construction." The selections of the testing agency shall be approved by the owner.

## 1.6 SUBMITTALS

- A. One copy each of test reports shall be submitted directly to the Owner, Architect, and Engineer from the approved testing services, with one copy each to the Contractor and others as required.

## PART 2 PRODUCTS (Not applicable)

## PART 3- EXECUTION

### 3.1 REPAIR AND PROTECTION

- A. General: Upon completion of inspection, testing, sample-taking, and similar services performed on Work, repair damaged Work and restore substrates and finishes to eliminate deficiencies including defects in visual qualities of exposed finishes.
- B. Except as otherwise indicated, comply with requirements of Contract Documents for "Cutting and Patching." Protect Work exposed by or for service activities and protect repaired Work. Repair and protection is Contractor's responsibility, regardless of assignment for inspection, testing, or similar service.

END OF SECTION 01400

**CONTRACTOR'S STATEMENT OF RESPONSIBILITY**

PROJECT: **"JIB" Property Waterfront Amenity Phase I**

LOCATION: **705 & 707 Shepard Street, Morehead City, NC 28557**

BUDGET CODE: \_\_\_\_\_ ITEM: \_\_\_\_\_ DATE: \_\_\_\_\_

OWNER: **Town of Morehead City, 706 Arendell Street, Morehead City, NC 28557**

DESIGNER: **MK CHALK ARCHITECTURE, PA, Morehead City, NC**

PRIME CONTRACTOR: \_\_\_\_\_

CONTRACTOR RESPONSIBLE: \_\_\_\_\_

SYSTEM/COMPONENT: \_\_\_\_\_

I (we) acknowledge the special requirements outlined in the quality assurance plan. I (we) also acknowledge that control will be exercised to obtain conformance with the construction documents as approved by the Office of State Construction.

The following procedures will be established and strictly followed to maintain control within our organization:

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

The following reporting will be submitted to the Special Inspector, Owner and Architect at the following frequency:

Reporting method: \_\_\_\_\_

Frequency: \_\_\_\_\_

The following individuals(s) will be responsible for monitoring the procedures as set forth above:

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

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

Qualifications: \_\_\_\_\_

Signed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
*Name*

\_\_\_\_\_  
*Title*

SECTION 01410  
TESTING LABORATORY SERVICES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The Contractor shall select a testing laboratory qualified in accordance with ASTM E329 as approved by the owner.
- B. The Contractor shall pay for all testing and inspection services as are specified in this Section and/or elsewhere in the Contract Documents, except as otherwise noted.
- C. Related work:
  - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.2 QUALITY ASSURANCE

- A. Comply with pertinent provisions of Section 01620.
- B. Promptly process and distribute required copies of test reports and related instructions to assure necessary retesting and replacement of materials with the least possible delay in progress of the Work.

PART 2 - PRODUCTS

2.1 PAYMENT FOR TESTING

- A. The Contractor will pay for all testing as specified herein below.
- B. Retesting: When initial tests indicate non-compliance with the Contract Documents, subsequent retesting occasioned by the non-compliance shall be performed by the same testing agency, and costs thereof will be borne by the Contractor.
- C. Where no testing requirements are described, but the Owner decides that testing is required, the Owner may require such testing to be performed under current pertinent standards for testing. If testing reveals the work to be in compliance with Contract requirements, Owner will pay for these testing services. If work is found to be in non-compliance with Contract requirements, Contractor shall pay for these testing services.

2.2 CONTRACTOR'S CONVENIENCE TESTING

- A. Inspection and testing performed exclusively for the Contractor's convenience and quality assurance, shall also be the sole responsibility of the Contractor.

## PART 3 - EXECUTION

### 3.1 COOPERATION WITH TESTING LABORATORY

- A. Representatives of the testing laboratory shall have access to the work at all times and at all locations where the work is in progress. Provide facilities for such access to enable the laboratory to perform its function properly. All testing shall be coordinated by the Architect.

### 3.2 SCHEDULES FOR TESTING

- A. Establishing schedule:
  - 1. By advance discussion with the testing laboratory approved by the Owner, determine the time required for the laboratory to perform its test and to issue each of its findings.
  - 2. Provide all required time within the construction schedule.
- B. Revising schedule: When changes of construction schedule are necessary during construction, coordinate all such changes with the testing laboratory as required.
- C. Adherence to schedule: When the testing laboratory is ready to test according to the established schedule, but is prevented from testing or taking specimens due to incompleteness of the Work, all extra charges for testing attributable to the delay may be back-charged to the Contractor and shall not be borne by the Owner.

END OF SECTION 01410

SECTION 01500  
TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 DESCRIPTION

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

1.2 PRODUCT HANDLING

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

1.3 LOCAL REGULATION

- A. Comply with all local ordinances and regulations including parking, storage, local and temporary facilities.
- B. The General Contractor and Subcontractor employees shall wear at all times, a badge which includes, company ID#, company names, and address.
- C. The General Contractor and all subcontractors shall comply with all safety provisions of OSHA, and other regulatory agencies.

PART 2 - PRODUCTS

2.1 UTILITIES

- A. Water:
  - 1. Provide necessary temporary piping and water supply and, upon completion of the Work, remove such temporary facilities.

B. Electricity

1. Provide necessary temporary wiring and, upon completion of the Work, remove such temporary facility.
2. Provide area distribution boxes so located that the individual trades may obtain power and lighting at points where needed for work, inspection, and safety.

C. Heating: Provide and maintain heat necessary for proper conduct of operations needed in the Work.

## 2.2 FIELD OFFICES AND SHEDS

A. Contractor's facilities:

1. Provide a field office building and storage facilities adequate in size and accommodation for Contractor's offices, supply and storage.
2. The General Contractor shall erect within the project area a temporary field office, in a location acceptable to the Owner.

B. Sanitary facilities:

1. The General Contractor shall provide and maintain commercial chemical toilets conforming to State regulations in adequate quantity to provide for those people involved in the construction of the project. The toilet facilities shall be maintained during the entire period of construction so as to avoid any nuisance.

## 2.3 ENCLOSURES

A. Provide and maintain for the duration of construction all scaffolds, tarpaulins, canopies, warning signs, steps, platforms, bridges, and other temporary construction necessary for proper completion of the Work in compliance with pertinent safety and other regulations.

1. All apparatus, equipment, temporary and permanent construction shall meet all local and State labor laws and safety regulations applicable thereto.

## PART 3 - EXECUTION

### 3.1 MAINTENANCE AND REMOVAL

A. The General Contractor shall remove all temporary utilities and facilities at the end of the construction period or earlier with the Architect's approval if no longer needed.

B. All material including construction debris, surplus materials, etc., which is not to be used on the project, must be legally disposed of, off the project site, at no cost to the Owner on a weekly basis.

C. Maintain temporary facilities and controls as long as needed for safe and proper completion of the Work.

D. Remove such temporary facilities and controls as rapidly as progress of the Work will permit, or as directed by the Architect.

END OF SECTION 01500

SECTION 01620  
PRODUCT HANDLING

PART 1 - GENERAL

1.1 DESCRIPTION

Work included: Protect products scheduled for use in the Work by means including, but not necessarily limited to those described in this Section.

1.2 MANUFACTURERS' RECOMMENDATIONS

Except as otherwise approved by the Architect, determine and comply with manufacturers' recommendations on product handling, storage, and protection.

1.3 PACKAGING

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

1.4 PROTECTION

- A. Protect finished surfaces around which equipment and materials are handled.
- B. Maintain finished surfaces clean, unmarred, and suitably protected until accepted by the Owner.

1.5 STORAGE

- A. Store products according to manufacturer's recommendation
- B. Schedule delivery to minimize long term storage.
- C. Protect all products in storage.

1.6 REPAIRS AND REPLACEMENTS

In the event of damage, promptly make replacements and repairs to the approval of the Architect, and at no additional cost to the Owner.

END OF SECTION 01620

SECTION 01700  
PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 AS-BUILT DRAWINGS

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

1.2 MANUALS

- A. Contractor shall submit to the Architect before final acceptance three copies of all installation, operating instructions, and maintenance instructions on the equipment and materials furnished under his contract. Each set of copies shall be bound in a 3-ring, loose-leaf binder for 8-1/2" x 11" paper with black vinyl covers. Label each binder, designating the name of the project, the names of the owner, the name of the Contractor, and the equipment or materials included in the manual.

1.3 GUARANTEES AND WARRANTIES

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

END OF SECTION 01700

SECTION 01710  
CLEANING

PART 1 - GENERAL

1.1 DESCRIPTION

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

1.2 QUALITY ASSURANCE

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

PART 2 - PRODUCTS

2.1 COMPATIBILITY

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

PART 3 - EXECUTION

3.1 PROGRESS CLEANING

- A. General:
  - 1. Retain stored items in an orderly arrangement allowing maximum access, not impeding traffic or drainage, and providing required protection of materials.
  - 2. Do not allow accumulation of scrap, debris, waste material, and other items not required for construction of this Work.
  - 3. Provide adequate storage for all items awaiting removal from the job site, observing requirements for fire protection and protection of the ecology.
  - 4. The existing site shall be cleaned daily of all debris and waste material resulting from the construction operations.
  - 5. All Contractors shall be responsible for cleaning of their work, and residue and debris caused by their work.

END OF SECTION 01710

SECTION 01720  
PROJECT CLOSEOUT

PART 1 - GENERAL

1.1 CLOSEOUT SUBMITTALS

- A. Record Drawings: See Section 01700
- B. Record Specifications: Maintain one copy of the Project Manual, including addenda, as Record Specifications. Mark to show variations in Work performed in comparison with the text of the Specifications and modifications.
- C. Operation and Maintenance Data: Organize data into 3-ring binders, with pocket folders for folded sheet information. Mark identification on front and spine of each binder. Include the following:
  - 1. Emergency instructions.
  - 2. Spare parts list.
  - 3. Copies of warranties.
  - 4. Wiring diagrams.
  - 5. Shop Drawings and Product Data.

1.2 INSPECTIONS

- A. General: Prior to requesting Architect's pre-final and final inspection for certification of project completion, the Contractor shall fully inspect the work with his own forces and subcontractors to verify that the work is ready for inspection. The Contractor shall prepare a punchlist of work to be completed prior to requesting the Architect's pre-final inspection. All temporary utilities and facilities shall have been discontinued and removed from site, and final clean up completed.
- B. Inspection Procedures: Upon receipt of the Contractor's request, the Architect will schedule and proceed with a pre-final inspection, or advise the Contractor(s) that prerequisites are not fulfilled. Following the pre-final inspection the Architect will prepare a pre-final "Punchlist" identifying work that must be performed prior to scheduling a final inspection. Following the final inspection, the Architect will either recommend acceptance of the work to the Owner, or advise the Contractor(s) of work, which must be performed prior to such that the work has been completed. Results of inspection will form the final "Punchlist" for final acceptance and be attached to the Certificate of Substantial Completion.

### 1.3 CLOSEOUT PROCEDURES

- A. General: Prior to requesting final payment, all requirements set forth within the Construction Documents shall be met, including the following:
1. Complete all work and punch list items. Provide written certification that all punchlist items have been completed or note reasons for any exceptions.
  2. Complete all cleaning.
  3. Submit one copy of approved shop drawings and submittals to the owner.
  4. Submit all required guarantees, warranties, and certification, original and two copies.
  5. Submit all Operation and Maintenance Instruction Manuals, in triplicate.
  6. Instruct Owner in operation of equipment.
  7. Submit all extra stock and spare parts, where required, in quantities indicated.
  8. Submit list of final finish and materials selections, i.e. colors, granite, caulk, etc.
  9. Submit Project Record Drawings (As-Builts).
  10. Submit listing of subcontractors and major materials/components, including identification of distributors and addresses of same.
  11. Submit Builder's Risk Cancellation Notice, in triplicate.
  12. Submit Certificate indicating the amounts of state and local sales taxes paid, in triplicate.
  13. Submit Final Payment Requisition, in quantities indicated.
  14. Submit Contractor's Affidavit of Payment of Debts and Claims, in triplicate.
  15. Submit Contractor's Affidavit of Release of Liens, in triplicate.
  16. Submit Consent of Surety Company to Final Payment, in triplicate.
  17. Advise Owner of pending insurance changeover requirements.
  18. Changeover locks and transmit keys to Owner.
  19. Complete startup testing of systems and instruction of operation and maintenance personnel. Fountain must be filled and in operation.
  20. Remove temporary facilities and controls.
  21. Touch up, repair, and restore marred, exposed finishes.
  22. Obtain final inspections from authorities having jurisdiction.
  23. Obtain certificate of occupancy.
- B. Upon receipt of a request for inspection, Owner and Architect will proceed with inspection or advise Contractor of unfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or advise Contractor of items that must be completed or corrected before the certificate will be issued.

- C. Arrange for each installer of equipment that requires operation and maintenance to provide instruction to Owner's personnel. Include a detailed review of the following:
  - 1. Startup and shutdown.
  - 2. Emergency operations and safety procedures.
  - 3. Noise and vibration adjustments.
  - 4. Maintenance manuals.
  - 5. Spare parts, tools, and materials.
  - 6. Lubricants and fuels.
  - 7. Identification systems.
  - 8. Control sequences.
  - 9. Hazards.
  - 10. Warranties and bonds.
  
- D. Request inspection for certification of final acceptance and final payment, once the following are complete:
  - 1. Submit final payment request with releases of liens and supporting documentation. Include insurance certificates.
  - 2. Submit a copy of the Substantial Completion inspection list stating that each item has been completed or otherwise resolved for acceptance.
  - 3. Submit final meter readings for utilities, a record of stored fuel, and similar data as of the date of Substantial Completion.
  - 4. Submit consent of surety to final payment.
  
- E. Architect will reinspect the Work on receipt of notice that the Work has been completed.
  - 1. On completion of reinspection, Architect will prepare a certificate of final acceptance. If the Work is incomplete, Architect will advise Contractor of the Work that is incomplete or obligations that have not yet been fulfilled.

#### 1.4 FINAL CLEANING

- A. Clean each surface or item as follows before requesting inspection for certification of Substantial Completion:
  - 1. Remove labels that are not permanent.
  - 2. Clean transparent materials, including tile.
  - 3. Clean exposed finishes to a dust-free condition, free of stains, films and foreign substances.
  - 4. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication. Clean plumbing fixtures. Clean light fixtures and lamps.

5. Clean the site. Sweep paved areas; remove stains, spills, and foreign deposits. Rake grounds to a smooth, even-textured surface.

END OF SECTION 01700

SECTION 02000  
GENERAL SITE WORK

PART 1 - GENERAL

1.1 DESCRIPTION

A. General:

1. The site is generally to be left intact with minor grading as indicated on the site plan. The Contractor shall furnish all labor, materials, tools, equipment, and perform all work and services necessary for or incidental to the performance and completion of all site improvements, protection of existing site elements and adjacent structures, and demolition as shown on drawings and as specified in accordance with provisions of the contract documents and completely coordinated with that of all other trades.
2. Although such work is not specifically shown or specified, all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure, complete, and compatible installation shall be furnished and installed as part of this work.

B. Quality Standards:

1. Perform all work in accordance with OSHA requirements and requirements of Environmental Protection Agency in addition to State and Local requirements.

C. Protection of Work Area:

1. Provide barricades, coverings, or other types of protection necessary to prevent damage to existing improvements indicated to remain in place.
2. Protect improvements on Owner's property.
3. Restore any improvements damaged by this work to their original condition, as acceptable to Owner or other parties or authorities having jurisdiction.
4. Repair or replace existing site elements damaged by construction operations in manner acceptable to the Architect and the Owner.

D. Disposal of Waste Materials:

1. Burning of combustible cleared and grubbed materials is not permitted.
2. Remove all waste materials and unsuitable and excess soil from Owner's property, and legally dispose of it.

END OF SECTION 02000

SECTION 02060  
DEMOLITION

PART 1 GENERAL

1.1 WORK INCLUDED

- A. Provide labor, materials, equipment, and supervision necessary to perform operations of demolition, which include, but are not limited to the following:
  - 1. Provide demolition in areas required by these specifications and in other areas not specifically described but required to perform the work listed in these specifications and as shown on the project drawings.
  - 2. Removal and disposal of all demolished materials from site unless otherwise noted by the Owner.

1.2 EXISTING CONDITIONS

- A. Conduct demolition to minimize interference with adjacent existing structures and existing site elements, both above and below grade.
- B. Provide, erect, and maintain temporary barriers and security devices where applicable.
- C. Conduct operations with minimum interference to public or private thoroughfares. Maintain protected egress and access at all times.
- D. Do not close or obstruct sidewalks or building entrances without scheduling with Owner.

PART 2 - PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 PREPARATION

- A. Protect existing site elements, and adjacent structures which are not to be demolished.
- B. Erect and maintain temporary fences, barricades or guards, on a daily basis. Contractor is responsible for damage to the existing site elements and adjacent structures as a result of improper protection.

3.2 EXECUTION

- A. Demolish items/areas indicated on project drawings and/or the project manual in an orderly and careful manner. Protect existing supporting structural members.

- B. Cease operations and notify Architect immediately if adjacent structures appear to be endangered. Do not resume operations until corrective measures have been taken.
- C. Except where noted otherwise, immediately remove demolished materials from site. Upon completion of Work, leave areas of Work in clean condition.
- D. Do not burn or bury materials on site.

END OF SECTION 02060

SECTION 02110  
SITE CLEARING

PART 1 - GENERAL

1.1 DESCRIPTION

A. General:

1. The site is generally to be left intact with minor grading as indicated on plans. The Contractor shall furnish all labor, materials, tools, equipment, and perform all work and services necessary for or incidental to the performance and completion of all site clearing, structure protection, and demolition as shown on drawings and as specified in accordance with provisions of the contract documents and completely coordinated with that of all other trades.
2. Although such work is not specifically shown or specified, all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure, complete, and compatible installation shall be furnished and installed as part of this work.

B. Quality Standards:

1. Perform all work in accordance with OSHA requirements and requirements of Environmental Protection Agency in addition to State and Local requirements.

C. Protection of Work Area:

1. Provide barricades, coverings, or other types of protection necessary to prevent damage to existing improvements indicated to remain in place.
2. Protect improvements on Owner's property.
3. Restore any improvements damaged by this work to their original condition, as acceptable to Owner or other parties or authorities having jurisdiction.
4. Protect existing structures and site elements, both above and below grade. Provide temporary fences, barricades or guards as required for protection.
5. Repair or replace existing site elements damaged by construction operations in manner acceptable to the Architect and Owner.

D. Disposal of Waste Materials:

1. Burning of combustible materials is not permitted.
2. Immediately remove all waste materials from Owner's property and legally dispose of it.

END OF SECTION 02110

SECTION 02115  
SOIL EROSION AND SEDIMENT CONTROL

PART 1 - GENERAL

1.1 Related Documents

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications Sections, apply to this Section.
- B. North Carolina Erosion and Sediment Control Planning and Design Manual latest edition.
- C. NC Department of Environment and Natural Resources CAMA permits for this project (See Attachments).

1.2 Summary

- A. This Section includes the provision of temporary erosion control measures to prevent the pollution of air, water, and land within the project limits and in areas outside the project limits where work is accomplished in conjunction with the project. Installation of temporary erosion control features should be coordinated with the construction of permanent erosion control features to assure effective and continuous control of erosion and pollution. Provide and maintain erosion control measures in accordance with NCESCPDM.

PART 2 - PRODUCTS

2.1 Filter Barriers

- A. Posts: One inch seasoned wood posts, 1-1/2 inch diameter seasoned wood posts or 1.0 pound per linear foot steel posts. Posts should be minimum 5 feet long.
- B. Fabric: Burlap AASHTO M182, Class 3 or 4.

2.2 Filter Fabric

- A. A woven polypropylene, nylon, or polyester with stabilizers and/or inhibitors, making the fabric resistant to deterioration, and with the following properties:
  - 1. Minimum grab tensile strength (ASTM D 1862) 100 pounds
  - 2. Minimum grab elongation (ASTM D 1682) 25 percent
  - 3. Minimum mullen burst strength (ASTM D 3786) 210 psi
  - 4. E.O.S. (CW 02215) 20-100

2.3 Standard Catalog Product

- A. A manufacturer's standard catalog product for a pre-assembled filter barrier may be provided in lieu of the indicated filter barrier except that the filter fabric should be as specified, and the height of the structure should be as indicated.

2.4 Sediment Fence

- A. Posts: 4 inch by 4 inch wood posts, minimum 3 inch diameter wood, or 1.33 pound per linear foot steel posts. Posts are to be minimum 6 feet long.
- B. Wire Fabric: ASTM A 185, 6 by 6, minimum 12-1/2 gage.

## 2.5 Filter Fabric

- A. A woven or nonwoven polypropylene, nylon, or polyester containing stabilizers and/or inhibitors to make the fabric resistant to deterioration from ultraviolet, and with the following properties:
1. Minimum grab tensile strength (ASTM D 1682) 100 pounds
  2. Minimum grab elongation (ASTM D 1682) 25 percent
  3. Minimum mullen burst strength (ASTM D 3786) 210 psi
  4. E.O.S. (CW 02215) 20 - 100

## 2.6 Standard Catalog Product

- A. A manufacturer's standard catalog product for a pre-assembled sediment fence may be provided in lieu of the indicated sediment fence except that the filter fabric should be as specified, and the height of the structure should be as indicated.

## 2.7 Temporary Seeding

- A. Seed: State certified seed of the latest season's crop. Provide seed as specified in Part 3 - Execution.

## 2.8 Fertilizer

- A. FS O-F-241, Type I, Class 2, with 10 percent nitrogen, 20 percent available phosphoric acid, and 10 percent potash.

## 2.9 Mulch

- A. Hay or straw. Provide in an air dried condition for placement with commercial mulch blowing equipment.

## 2.10 Gravel For Construction Entrance

- A. NCDOT SSRS, Section 520.

## 2.11 Dust Suppressers

- A. ASTM D 98 calcium chloride, magnesium chloride, or other standard manufacturer's products designed for dust suppression as directed by the Designer.

## PART 3 - EXECUTION

### 3.1 Filter Barriers and Sediment Fence

- A. Install posts at the spacing indicated, and at an angle between 2 degrees and 20 degrees towards the potential silt load area. Do not attach filter fabric to existing tree. Secure filter fabric to the post and wire fabric using staples, tie wire, or hog rings. Embed the filter fabric into the ground (as indicated). Splice filter fabric at support pole using a 6 inch overlap and securely seal. Top of the filter fabric should have a 1-inch tuck or a reinforced top end section.

### 3.2 Temporary Seeding

- A. Within 48 hours after attaining the grading increment specified herein, provide seed,

fertilizer, and mulch on graded areas when any of the following conditions occur:

1. Grading operations stop for an anticipated duration of 30 days or more.
2. Provide on the slopes of cuts and fill slopes for every 5-foot increment of vertical height of the cut or fill.
3. When it is impossible or impractical to bring an area to finish grade so that permanent seeding operations can be performed without serious disturbance from additional grading.
4. Grading operations for a specific area are completed and the seeding seasons specified in Section 02000 "Site Work" are more than 30 days away.
5. When an immediate cover is required to minimize erosion, or when erosion has occurred.

### 3.3 Seeding Schedule

#### Shoulders, Side Ditches, Slopes (Maximum 3:1)

Date	Type	Planting Rates
August 15 - November 1	Hard Fescue	300 lbs./acre
November 1 - March 1	Hard Fescue	300 lbs./acre
	Abruzzi Rye	25 lbs./acre
March 1 - April 15	Hard Fescue	300 lbs./acre
April 15 - June 30		25 lbs./acre
July 1 - August 15	Hard Fescue	120 lbs./acre
	Sorghum - Sudan Hybrids	35 lbs./acre
Slopes (3:1 to 2:1)		
March 1 - June 1	Sericea Lespedeza (scarified)	50 lbs./acre
(March 1 - April 15)	Add Hard Fescue	120 lbs./acre
June 1 - September 1	Hard Fescue and	120 lbs./acre
	Browntop Millet	35 lbs./acre
September 1 - March 1	Sericea Lespedeza (unhulled-unscarified)	70 lbs./acre
	Hard Fescue	120 lbs./acre
(November 1 - March 1	Add Abruzzi Rye	25 lbs./acre

Consult Conservation Engineer or Soil Conservation Service for additional information concerning other alternatives for vegetation of denuded area. The above vegetation rates are those which do well under local conditions; other seeding rate combinations are possible.

Temporary - Reseed according to optimum season for desired permanent vegetation. Do not allow temporary cover to grow over 12" in height before mowing, otherwise Fescue may be shaded out.

### 3.4 General

- A. Loosen subgrade to a minimum depth of 4 inches. Uniformly apply the seed, fertilizer, and mulch at the specified application rates. Roll the seeded area after applying seed and fertilizer. Do not seed or fertilizer when the Designer determines conditions are unfavorable. Provide water to provide turf growth.

### 3.5 Gravel Construction Entrance

- A. Provide as indicated, a minimum of 6 inches thick, at points of vehicular ingress and egress on the construction site.

### 3.6 Dust Suppressors

- A. Immediately dampen the surface before calcium chloride application. Apply dust suppressors on unsurfaced base, subbase and other unsurfaced travel ways at the rate between 1.0 and 1.25 pounds per square yard of surface for pellets for the initial application. For subsequent applications of dust suppressors, application rates may be approximately 75 percent of initial application rates. Do not apply when raining or the moisture conditions exceed that required for proper application. Apply other dust suppressors in accordance with manufacturer's instructions. Protect treated surfaces from traffic for a minimum of 2 hours after treatment. Repeat application of dust suppressors as required to control dust emissions.

### 3.7 Maintenance and Inspection

- A. Inspect erosion control devices after each rainfall and daily during prolonged rainfall. Remove sediment deposits after each rainfall or when sediment reaches approximately one-half the barrier height. Immediately repair damaged erosion control devices and damaged areas around and underneath the devices. Maintain erosion control devices to assure continued performance of their intended function. Modify the Contractor furnished erosion control plan as required to control problem areas noticed after each inspection.

### 3.8 Clean-Up

- A. At the completion of the job, or when directed or approved by the Contracting Officer, erosion control devices should be removed. Erosion control devices and areas immediately adjacent to the device should be filled (where applicable), shaped to drain and to blend into the surrounding contours. Erosion control devices may remain in place when approved by the Designer.

END OF SECTION 02115

SECTION 02200  
EARTHWORK

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Section 01400: Quality Control
- C. Section 02000: General Site Work.

1.2 SUMMARY

- A. This section includes the following:
  - 1. Preparing and grading subgrade for building of fountain, equipment vaults, plaza, planters, walks, pavements, and plantings.
  - 2. Finish grading for above stated building and paved areas within the limit of contract.
  - 3. Subbase for walks and pavements.
  - 4. Excavating and backfilling for underground utilities and appurtenances.

1.3 DEFINITIONS

- A. Excavation consists of removal of material encountered to subgrade elevations and the reuse or disposal of materials removed and is unclassified.
- B. Subgrade: The uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.
- C. Borrow: Soil material obtained off-site when sufficient approved soil material is not available from excavations.
- D. Subbase Course: The layer placed between the subgrade and base course in a paving system or the layer placed between the subgrade and surface of a pavement or walk.
- E. Base Course: The layer placed between the subbase and surface pavement in a paving system.
- F. Drainage Fill: Course of washed granular material supporting slab-on-grade placed to cut off upward capillary flow of water.
- G. Unauthorized excavation consists of removing materials beyond indicated subgrade elevations or dimensions without direction by the Architect. Unauthorized excavation, as well as remedial work directed by the Architect, shall be at the Contractor's expense.
- H. Structures: Curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below ground surface.
- I. Utilities include on-site underground pipes, conduits, ducts, and cables, as well as underground services within building lines.

1.4 SUBMITTALS

- A. Submit the following according to the Conditions of the Contract and Division 1 Specification Sections.
  - 1. Product data for the following:

- a. Each type of plastic warning tape.
- b. Filter fabric.
- 2. Samples of the following:
  - a. 12 x 12 inch sample of filter fabric.

## 1.5 QUALITY ASSURANCE

- A. Codes and Standards: Perform earthwork complying with requirements of authorities having jurisdiction.
- B. Comply with applicable requirements of NCDOT Standard Specifications of roads and structures, July 1995 Edition with 2002 Amendments.
- C. Testing and Inspection Service: The Contractor shall employ a qualified independent engineering testing agency to test materials proposed on-site and borrow soils to verify the soils comply with specified requirements and to perform required field and laboratory testing for compaction.
- D. Pre-installation Conference: Before commencing earthwork, meet with representative of governing authorities, Owner, Design, consultants, independent testing agency, and other concerned entities. Review earthwork procedures and responsibilities, testing and inspection procedures and requirements. Notify participants at least five working days prior to convening conference. Record discussions and agreements and furnish a copy to each participant.

## 1.6 PROJECT CONDITIONS

- A. Existing Utilities: Do not interrupt existing utilities serving facilities occupied by the Owner or others except when permitted in writing by the Owner and then only after acceptable temporary utility services have been provided.
- B. Provide a minimum 48-hours' notice to the Owner and receive written notice to proceed before interrupting any utility.

## PART 2 - PRODUCTS

### 2.1 SOIL MATERIAL

- A. General: Provide approved borrow soil materials from off-site when sufficient approved soil materials are not available from excavations.
- B. Satisfactory Soil Materials: ASTM D 2487 soil classification groups GW, GP, GM, SW, SP, and SM; free of rock or gravel larger than 2 inches in any dimension, debris, waste, frozen materials, vegetation and other deleterious matter.
- C. Unsatisfactory Soil Materials: ASTM D 2487 soil classification groups GC, SC, ML, MH, CL, CH, OL, OH, and PT.
- D. Subbase and Base Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand, ASTM D 2940, with at least 95 percent passing a 1-1/2 inch sieve and not more than 8 percent passing a No. 200 sieve.
- E. Engineered Fill: Subbase or base materials.
- F. Bedding Material: Subbase or base materials with 100 percent passing a 1 inch sieve and not more than 8 percent passing a No. 200 sieve.
- G. Drainage fill: Washed, evenly graded mixture of crushed stone, or crushed or

uncrushed gravel, ASTM D 448, coarse aggregate grading size 57, with 100 percent passing a 1-1/2 inch sieve and not more than 5 percent passing a No. 8 sieve.

- H. Filtering Material: Evenly graded mixture of natural or crushed gravel or crushed stone and natural sand, with 100 percent passing a 1-1/2 inch sieve and 0 to 5 percent passing a No. 50 sieve.
- I. Impervious Fill: clayey gravel and sand mixture capable of compacting to a dense state.
- J. Bedding Material: Use #57 stone.

## 2.2 ACCESSORIES

- A. Detectable Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick minimum, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep.
  - 1. Tape Colors: Provide Tape colors to utilities as follows:
    - a. Red: Electric
    - b. Orange: Telephone and other communications
    - c. Blue: Water systems
    - d. Green: Sewer and storm drain systems
- B. Filter Fabric: Manufacturer's standard non-woven pervious geotextile fabric of polypropylene, nylon or polyester fibers, or a combination.
  - 1. Provide filter fabrics that meet or exceed the listed minimum physical properties determined according to ASTM D 4759 and the referenced standard test method in parentheses:
    - a. Grab Tensile Strength (ASTM D 4632): 100 lb.
    - b. Apparent Opening Size (ASTM D 4751): #100 U.S. Standard sieve.
    - c. Permeability (ASTM D 4491): 150 gallons per minute per sq. ft.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Protect subgrades and foundation soil against freezing temperature or frost. Provide protective insulating materials as necessary.
- C. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

### 3.2 DEWATERING

- A. Prevent surface water and subsurface or ground water from entering excavations, from ponding on prepared subgrades, and from flooding. Project site and surrounding area.
- B. Discharge all water from excavations in conformance with all state and local regulations.

- C. Protect subgrades and foundation soils from softening and damage by rain or water accumulation.

### 3.3 EXCAVATION

- A. Earth Excavation: Excavation is unclassified and includes excavation to required subgrade elevations.
- B. Earth excavation includes excavation of pavements and other obstructions visible on surface; underground structures, utilities, and other items indicated to be demolished and removed; together with soil and other materials encountered.

### 3.4 STABILITY OF EXCAVATIONS

- A. Comply with local codes, ordinances and requirements of authorities having jurisdiction to maintain stable excavations.

### 3.5 EXCAVATION FOR STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. Extend excavations a sufficient distance from structures for placing and removing concrete form-work, installing services and other construction, and for inspections.
- B. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
- C. Excavation for Underground manholes, and Mechanical or Electrical Appurtenances: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 1 inch. Do not disturb bottom of excavations intended for bearing surface.

### 3.6 EXCAVATION FOR WALKS AND PAVEMENTS

- A. Excavate surfaces under walks and pavements to indicated cross-sections, elevations, and grades.

### 3.7 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated slopes, lines, depths, and invert elevations.
  - 1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.
- B. Excavate trenches to uniform widths to provide a working clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit, unless otherwise indicated.
- C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove stones and sharp objects to avoid point loading.
  - 1. For pipes or conduit less than 6 inches in nominal diameter and flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
  - 2. For pipe and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe circumference. Fill depressions with tamped sand backfill.

3. Where encountering rock of another unyielding bearing surface, carry trench excavation 6 inches below invert elevation to receive bedding course.

### 3.8 APPROVAL OF SUBGRADE

- A. Notify testing agency when excavations have reached required subgrade.
- B. When testing agency and Owner determines that unforeseen unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
  1. Unforeseen additional excavation and replacement material will be paid according to the Contract provisions for changes in work.
- C. Reconstruct subgrade damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by the Testing Agency.

### 3.9 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavation under foundations or wall footings by extending indicated bottom elevation of concrete foundation or footing to excavation bottom, without altering required top elevation. Lean concrete fill may be used to bring elevations to property position when acceptable to Landscape Architect.
- B. Where indicated widths of utility trenches are exceeded, provide stronger pipe, or special installation procedures, as required by the Architect.

### 3.10 STORAGE OF SOIL MATERIALS

- A. Stockpile excavated materials acceptable for backfill and fill soil materials, including acceptable borrow materials. Stockpile soil materials without intermixing. Place, grade and shape stockpiles to drain surface water. Cover to prevent wind-blown dust.
  1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

### 3.11 BACKFILL

- A. Backfill excavation promptly, but not before completing the following:
- B. Acceptance of construction below finish grade including, where applicable, damp proofing, waterproofing, and perimeter insulation.
- C. Surveying locations of underground utilities for record documents.
- D. Testing, inspecting, and approval of underground utilities.
- E. Concrete formwork removal.
- F. Removal of trash and debris from excavation.
- G. Removal of temporary shoring and bracing, and sheeting to a minimum depth of 3 feet below final elevation.

### 3.12 UTILITY TRENCH BACKFILL

- A. Place and compact bedding course on unyielding bearing surfaces and to fill unauthorized excavations. Provide bedding for sanitary drains as detailed. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- B. Place and compact initial backfill of satisfactory soil material or subbase material, free of particles larger than 1 inch, to a height of 12 inches over the utilities pipe or conduit.

- C. Carefully compact material under pipe haunches and bring backfill evenly up to both sides and along the full length of utility piping or conduit to avoid damage or displacement of utility system.
- D. Coordinate backfilling with utilities testing.
- E. Fill voids with approved backfill materials as shoring and bracing, and sheeting is removed.
- F. Place and compact final backfill of satisfactory soil material to final subgrade.
- G. Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

### 3.13 FILL

- A. Preparation: Remove vegetation, topsoil, debris, wet unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placing fills.
- B. Prior to placing fill, the existing sloping ground surface should be benched to allow each lift of structural fill to be placed with a relatively uniform thickness and to allow for more effective compaction from equipment. Benching the existing slope will also provide for better stability of the "wedge" of fill being placed on the existing slope. The filling operations to raise grades should begin at the lower elevations and progress up slope.
- C. Each bench cut into the existing slope should be not higher than 4 feet. The soil exposed at the bottom of each bench will be observed and proof rolled prior to fill placement, but fill should be placed on the lower bench before excavating the next higher bench level.
- D. The Testing Agency will observe the proof rolling operation to aid in delineating problem soil areas. Proof rolling should be performed after a suitable period of dry weather to avoid degrading an otherwise acceptable subgrade. A loaded dump truck or similar construction equipment should be used to proof roll the site. Any soils which rut or deflect excessively under the rolling operations should be undercut and replaced with suitable compacted fill material.
- E. Structural fill or backfill placed at the site should consist of satisfactory soil materials that is free of organic material or debris. Provide materials classified as GW, GP, SW, SP, or SM, SC, ML, or CL by ASTM D 2487 where indicated. The liquid limit of such material shall not exceed 35 percent when tested in accordance with ASTM D 4318. The plasticity index shall not be greater than 12 percent when tested in accordance with ASTM D 4318, and not more than 35 percent by weight shall be finer than No. 200 sieve when tested in accordance with ASTM D 1140. Coefficient of permeability shall be a minimum of 0.002 feet per minute when tested in accordance with ASTM D 2434.
- F. Structural fill shall be placed in 8 inch loose lifts at a moisture content within three percent of the optimum moisture content for the material determined according to ASTM D 698 (Standard Proctor). Each lift of structural fill shall be compacted to a minimum 98 percent of the maximum density at optimum moisture content for the material determined by ASTM D 698 (Standard Proctor). Upper 12" of fill under floor slab to be compacted in 6" layers to 100% density at optimum moisture content by ASTM D 698 (Standard Proctor).
- G. The Owner's representative will perform filed density tests during placement of

structural fill to monitor that adequate compaction is achieved. In-place field density tests shall be performed at least once for every 2,500 square feet of fill placed, with at least one test performed on each lift of fill, and one test per 100 feet per two feet thickness in utility trench areas. If any compaction problems are encountered during construction, the Owner is to be contacted for modifications and correction. Retesting will be at the expense of the Contractor.

- H. When subgrade or existing ground surface to receive fill has a density less than that required for fill, break up ground surface to depth required, pulverize, moisture-condition or aerate soil and recompact to required density.
- I. Place fill material in layers to required elevations for each location listed below.
  - 1. Under grass, use satisfactory excavated or borrow soil material.
  - 2. Under walks and pavements, use subbase or base material.
  - 3. Under steps and ramps, use subbase material.
  - 4. Under building slabs, use drainage fill material.
  - 5. Under footings and foundations, use lean concrete or extend footing.

### 3.14 MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill layer before compaction to within two percent of optimum moisture content.
- B. Do not place backfill or fill material or surfaces that are muddy, frozen, or contain frost or ice.
- C. Remove and replace, or scarify and air-dry satisfactory soil material that is too wet to compact to specified density.
- D. Stockpile or spread and dry removed wet satisfactory soil material.

### 3.15 COMPACTION

- A. Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill materials evenly on all sides of structures to required elevations. Place backfill and fill uniformly along the full length of each structure.
- C. Percentage of Maximum Dry Density Requirements: Compact soil to not less than the following percentages of maximum density according to ASTM D 698:
- D. Under structures, building slabs, steps and pavements, compact the top 12 inches below subgrade and each 6" layer of backfill or fill material at 100 percent maximum density at optimum moisture content.
- E. Under walkways, compact the top 6 inches below subgrade and each layer of backfill or fill material at 95 percent maximum dry density.
- F. Under lawn or unpaved areas, compact the top 6 inches below subgrade and each layer of backfill or fill material at 90 percent maximum dry density.

### 3.16 GRADING

- A. General: Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
- B. Provide a smooth transition between existing adjacent grades and new grades.

- C. Cut out soft spots, fill low spots, and trim high spots to conform to required surface tolerances.
- D. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances.
- E. Lawn or Unpaved Areas: Plus or minus 2 inches.
- F. Walks: Plus or minus 1/2 inch.
- G. Pavements: Plus or minus 1/4 inch.

### 3.17 SUBBASE AND BASE COURSES

- A. Under pavements and walks, place subbase course material on prepared subgrades. Place base course material over subbases to pavements.
- B. Compact subbase and base courses at optimum moisture content to required grades, lines, cross-sections and thickness to not less than 98% of ASTM D 698  $\pm 2\%$  of the optimum moisture.
  - 1. Compaction of all material to a depth of 8 inches below the finished surface of the subgrade to a density equal to at least 100% of that obtained by compacting a sample of the material in accordance with AASHTO T99 (Standard Proctor).
  - 2. Compaction of the aggregate base course to at least 100% of that obtained by compacting a sample of the material in accordance with AASHTO T180 (Modified Proctor) as modified by the Department.
- C. Shape subbase and base to required crown elevations and cross-slope grades.
- D. When thickness of compacted subbase or base course is 6 inches or less, place materials in a single layer.
- E. When thickness of compacted subbase or base course exceeds 6 inches place materials in equal layers, with no layer more than 6 inches thick or less than 3 inches thick when compacted.
- F. Pavement Shoulders: Place shoulders along edges of subbase and base course to prevent lateral movement. Construct shoulders at least 12 inches wide of acceptable soil materials and compact simultaneously with each subbase and base layer.

### 3.18 FIELD QUALITY CONTROL

- A. Testing Agency Services: Allow testing agency to inspect and test each subgrade and each fill or backfill layer. Do not proceed until test results for previously completed work verify compliance with requirements.
  - 1. Perform field in-place density tests according to ASTM D 1556 (sand cone method), ASTM D 2167 (rubber balloon method) or ASTM D 2937 (drive cylinder method), as applicable.
    - a. Field in-place density tests may also be performed by the nuclear method according to ASTM D 2922, provided that calibration curves are periodically checked and adjusted to correlate to tests performed using ASTM D 1556. With each density calibration check, check the calibration curves furnished with the moisture gages according to ASTM D 3017.
    - b. When field in-place density tests are performed using nuclear methods, make calibration checks of both density and moisture gages at beginning of work, on each different type of material encountered, and at intervals as directed by the Architect.

1. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfilled layer, perform at least one field in-place density test for every 2000 sq. Ft. Or less of paved area or building slab, but in no case fewer than two tests per layer.
- B. When testing agency reports that subgrades, fills, or backfills are below specified density, scarify and moisten or aerate, or remove and replace soil to the depth required, recompact and retest until required design is obtained. Contractor shall pay for all retesting and corrective actions.

### 3.19 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and re-establish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or lose compaction due to subsequent construction operations or weather conditions.
- C. Scarify or remove and replace material to depth directed by the Landscape Architect; reshape and recompact or optimum moisture content to required density.
- D. Settling: Where settling occurs during the Project correction period, remove finished surfacing, backfill with additional approved material, compact, and reconstruct surfacing.
- E. Restore appearance, quality, and condition of finished surfacing to match adjacent work and eliminate evidence of restoration to the greatest extent possible.

### 3.20 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off the Owner's property.

END OF SECTION 02200

SECTION 02200A  
SUBSURFACE INFORMATION

PART 1 – GENERAL

1.1 EXISTING SOILS REPORT

- A. A copy of the soil boring report for the project area is available upon request from the Architect.

1.2 INTERPRETATION/DISCLAIMER

- A. Soil Investigation Data: Provided only for information and the convenience of the Contractor. The accuracy of the soils data report is not warranted by the owner, architect, or civil engineer.
- B. Soil investigation data is NOT part of the contract documents.

PART 2- PRODUCTS

Not applicable to this section

PART 3- EXECUTION

Not applicable to this section

END OF SECTION 02200A

SECTION 02360  
CONCRETE PILES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes solid, precast prestressed concrete piles.

1.3 UNIT PRICES

- A. The Contract Sum: Base the Contract Sum on number and dimensions of piles indicated from tip to cutoff.
- B. Work of this Section is affected as follows:
  - 1. Additional payment for pile lengths in excess of that indicated, and credit for pile lengths less than that indicated, will be calculated at unit prices stated in the Contract, based on net addition or deduction to total pile length as determined by Architect measured to nearest 12 inches.
  - 2. Additional payment for number of piles in excess of that indicated, and credit for number of piles less than that indicated, will be calculated at unit prices stated in the Contract.
  - 3. Unit prices include labor, materials, tools, equipment, and incidentals for furnishing, driving, cutting off, capping, and disposing of cutoffs.
  - 4. Test piles that become part of permanent foundation system will be considered as an integral part of the Work.
  - 5. No payment will be made for rejected piles, including piles driven out of tolerance, defective piles, or piles damaged during handling or driving.

1.4 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Piles shall withstand transportation, erection, and driving stresses and design loads within limits indicated and under conditions existing at Project site.
  - 1. Design Loads: 10 kips vertical and 1.5 kips lateral.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

- B. Shop Drawings: For concrete piles. Prepared by or under the supervision of a qualified professional engineer detailing fabrication and lifting devices necessary for handling and driving piles.
  - 1. Indicate pile dimensions, cross sections, locations, and sizes. Show details of pile shoes.
  - 2. Indicate types of reinforcement, including prestressing strand, and detail fabricating, bending, and placing.
  - 3. Indicate layout and dimensions, and identify each pile. Indicate welded connections by AWS standard symbols. Detail cast-in hardware.
  - 4. Indicate transportation, storage, and lifting points.
  - 5. Include arrangement of static pile reaction frame, test and anchor piles, equipment, and instrumentation. Submit structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

## 1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer, manufacturer and testing agency.
- B. Design Mixes: For each concrete mix.
- C. Material Certificates: For steel reinforcements, prestressing strand and concrete admixtures, from manufacturer.
- D. Material Test Reports: For concrete materials.
- E. Pile-Driving Equipment Data: Include type, make, and rated energy range; weight of striking part of hammer; weight of drive cap; and, type, size, and properties of hammer cushion (if contractor selects to drive piling).
- F. Pile-Driving / Installation Records: Submit within three days of driving each pile.
- G. Field quality-control reports.
- H. Preconstruction Photographs: Photographs or video of existing conditions of adjacent construction. Submit before the Work begins.

## 1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer complying with the following:
  - 1. PCI Plant Certification Program: Participates in PCI's Plant Certification Program and is designated a PCI-Certified Plant for C3 product group and category, or better.
- B. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
  - 1. Installer's responsibility includes engaging a qualified professional engineer to prepare pile-driving / installation records.
- C. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.

- D. Design Practices: Comply with ACI 318 and the recommendations in PCI Committee Report: "Recommended Practice for Design, Manufacture and Installation of Prestressed Concrete Piling."
- E. Quality-Control Standard: For manufacturing procedures and testing requirements, quality-control recommendations, and dimensional tolerances for piles, comply with applicable requirements in PCI MNL-116, "Manual for Quality Control for Plants and Production of Structural Precast Concrete Products."
- F. Comply with requirements in ACI 301, "Specifications for Structural Concrete."
- G. Welding Qualifications: Qualify procedures and personnel according to the following:
  - 1. AWS D1.1/D1.1M, "Structural Welding Code - Steel"
  - 2. AWS D1.4/D1.4M, "Structural Welding Code - Reinforcing Steel."
- H. Preinstallation Conference: Conduct conference at Project site.

## 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver piles to Project site in such quantities and at such times to ensure continuity of installation. Handle and store piles at Project site to prevent cracking, distorting, warping, or other physical damage, and so markings are visible.
- B. Lift and support piles only at designated lifting or supporting points as shown on Shop Drawings.

## 1.9 PROJECT CONDITIONS

- A. Protect structures, underground utilities, and other construction from damage caused by pile driving.
- B. Site Information: A geotechnical report has been prepared for this Project and is referenced elsewhere in the Project Manual for information only.
- C. Preconstruction Photographs: Inventory and record the condition of adjacent structures, underground utilities, and other construction. Provide photographs or video of conditions that might be misconstrued as damage caused by pile driving.

## PART 2 - PRODUCTS

### 2.1 MOLD MATERIALS

- A. Molds: Provide molds of metal, plastic, wood, or another material that is nonreactive with concrete and will produce required finish surfaces. Slip forms will not be permitted.

## 2.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60; deformed.
- B. Plain Steel Wire: ASTM A 82/A 82M, as drawn.
- C. Deformed-Steel Wire: ASTM A 496/A 496M.

## 2.3 PRESTRESSING TENDONS

- A. Prestressing Strand: ASTM A 416/A 416M, Grade 270; uncoated, seven-wire, low-relaxation strand.

## 2.4 CONCRETE MATERIALS

- A. General: Limit water-soluble chloride ions in concrete to the maximum percentage by mass of cementitious material permitted by ACI 318 (ACI 318M), but not more than 0.06 percent.
- B. Portland Cement: ASTM C 150, Type I, of same type, brand, and source.
  - 1. Fly Ash: ASTM C 618, Class C or F.
  - 2. Silica Fume: ASTM C 1240, amorphous silica.
- C. Normal-Weight Aggregates: Except as modified by PCI MNL-116, ASTM C 33, with coarse aggregates complying with Class 4S. Provide aggregates from single source.
  - 1. Nominal Maximum Size of Aggregate: 3/4 inch.
- D. Water: Potable, free of deleterious material that may affect color stability, setting, or strength of concrete, and complying with chemical limits of PCI MNL-116.
- E. Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures.
  - 1. Air-Entraining Admixture: ASTM C 260.
  - 2. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
  - 3. Retarding Admixture: ASTM C 494/C 494M, Type B.
  - 4. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
  - 5. Water-Reducing and Accelerating Admixture: ASTM C 494/C 494M, Type E.
  - 6. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
  - 7. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
  - 8. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.
  - 9. Non-Set-Accelerating Corrosion-Inhibiting Admixture: Commercially formulated, non-set-accelerating, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete. Use in all piles.
    - a. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, provide one of the following with a dosage rate of 3 gallons per cubic yard:

- b. Cortec Corporation; MCI- 2000
- c. Euclid Chemical Co.; Eucon BCN
- d. Master Builders, Inc.; Rheocrete CNI
- e. Sika Corporation; Sika CNI or FerroGard 901
- f. W.R. Grace & Co.; DCI-S.

## 2.5 PILE ACCESSORIES

- A. Pile Shoes: 1-inch-thick, minimum, carbon-steel plate fabricated to match shape of pile tip.
- B. Pile Splices: No splices permitted.

## 2.6 CONCRETE MIXES

- A. Prepare design mixes for each type of concrete required.
  - 1. Limit use of fly ash and silica fume to not exceed, in total, 25 percent of portland cement by weight.
- B. Design mixes may be prepared by a qualified independent testing agency or by qualified personnel at precast manufacturing plant at precast manufacturer's option.
- C. Proportion mixes by either laboratory trial batch or field test data methods according to ACI 211.1, with materials to be used on Project, to provide normal-weight concrete with the following properties:
  - 1. Compressive Strength (28 Days): 6000 psi.
  - 2. Maximum Water-Cementitious Material Ratio: 0.40.
- D. Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content of 2.5 to 4.5 percent.

## 2.7 FABRICATION

- A. Molds: Accurately construct molds, mortar tight, of sufficient strength to withstand pressures due to concrete placement, temperature changes, and for pretensioning and detensioning operations. Maintain molds to provide completed piles of shapes, lines, and dimensions indicated, within fabrication tolerances specified in PCI MNL-116 and PCI MNL-135.
  - 1. Unless molds are stripped before detensioning, design molds so stresses are not induced in piles due to deformation of concrete under prestress or movement during detensioning.
  - 2. Chamfer edges and corners of square piles.
- B. Reinforcement: Comply with recommendations in CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement. Clean reinforcement of loose rust and mill scale, earth, and other materials that reduce or destroy bond with concrete.

1. Accurately position, support, and secure reinforcement against displacement by molds, construction, or concrete placement. Locate and support reinforcement by metal chairs, runners, bolsters, spacers, and hangers, as required.
  2. Place reinforcement to obtain at least the minimum coverages for concrete protection. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position while placing concrete. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.
- C. Prestress tendons for piles by either pretensioning or post-tensioning methods. Comply with PCI MNL-116.
- D. Pile Shoes: Accurately position and secure pile shoes at pile tips so as to not affect pile alignment during driving. Weld pile shoes to longitudinal reinforcements.
- E. Pile Splices: Not permitted.
- F. Mix concrete according to PCI MNL-116 and requirements in this Section. After initial concrete batching, no additional water may be added.
- G. Place concrete in a continuous operation to prevent seams or planes of weakness from forming in piles. Comply with requirements in PCI MNL-116 for measuring, mixing, transporting, and placing concrete.
1. Thoroughly consolidate placed concrete by internal and external vibration without dislocating or damaging reinforcement and built-in items. Use equipment and procedures complying with PCI MNL-116.
  2. Comply with ACI 306.1 procedures for cold-weather concrete placement.
  3. Comply with ACI 305R recommendations for hot-weather concrete placement.
- H. Identify pickup points of piles with permanent markings corresponding with markings indicated on Shop Drawings. Imprint casting date on each pile.
- I. Cure concrete according to requirements in PCI MNL-116 by moisture retention without heat or by accelerated heat curing using low-pressure live steam or radiant heat and moisture.
- J. Delay detensioning piles until concrete has attained at least 75 percent of its compressive strength as established by test cylinders cured under the same conditions as concrete.
1. If concrete has been heat cured, detension while concrete is still warm and moist to avoid dimensional changes that may cause cracking or undesirable stresses.
  2. Detension pretensioned tendons either by gradually releasing tensioning jacks or by heat-cutting tendons, using a sequence and pattern to prevent shock or unbalanced loading.
- K. Where ends of strands will not be enclosed or covered, cut flush and cover with a high-strength mortar bonded to unit with an epoxy-resin bonding agent.
- L. Fabricate precast prestressed concrete piles straight and true to size and shape with exposed edges and corners precise and true so each finished unit complies with PCI MNL-116 and PCI MNL-135 product tolerances.

- M. Finish: Fabricate concrete piles with normal plant-run finish produced in forms that impart a smooth finish to concrete. Small surface holes caused by air bubbles, normal color variations, form joint marks, and minor chips and spalls will be tolerated. Major or unsightly imperfections, honeycombs, or structural defects are not permitted.
- N. Finish unformed surfaces by trowel unless otherwise indicated. Consolidate concrete, bring to proper level with straightedge, float, and trowel to a smooth, uniform finish.
- O. Pile-Length Markings: Mark each pile with horizontal lines at 12-inch intervals; label the distance from pile tip at 60-inch intervals. Maintain markings on piles until installed.

## 2.8 SOURCE QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to evaluate pile manufacturer's quality-control and testing methods.
  - 1. Allow Owner's testing agency access to material storage areas, concrete production equipment, concrete placement, and curing facilities. Cooperate with Owner's testing agency and provide samples of materials and concrete mixes as may be requested for additional testing and evaluation.
- B. Testing: Test and inspect piles according to PCI MNL-116.
- C. Strength of piles will be considered deficient if units fail to comply with requirements.
- D. Testing: If there is evidence that strength of piles may be deficient or may not comply with PCI MNL-116 requirements, Owner will employ an independent testing agency to obtain, prepare, and test cores drilled from hardened concrete to determine compressive strength according to ASTM C 42/C 42M.
  - 1. A minimum of three representative cores shall be taken from piles of suspect strength, from locations directed by Architect.
  - 2. Cores shall be tested, following immersion in water, in a wet condition per ACI 301 if piles will be wet under service conditions.
  - 3. Cores shall be tested in an air-dry condition per ACI 301 if piles will be dry under service conditions.
  - 4. Strength of concrete for each series of three cores shall be considered satisfactory if average compressive strength is at least 85 percent of the 28-day design compressive strength and no core compressive strength is less than 75 percent of the 28-day design compressive strength.
  - 5. Test results shall be reported in writing on same day that tests are performed, with copies to Architect, Contractor, and pile manufacturer. Test reports shall include the following:
    - a. Project identification name and number.
    - b. Date when tests were performed.
    - c. Name of precast concrete manufacturer.
    - d. Name of concrete testing agency.
    - e. Identification letter, name, and type of pile represented by core tests; design compressive strength; type of break; compressive strength at break, corrected for

length-diameter ratio; and direction of applied load to core in relation to horizontal plane of concrete as placed.

- E. Patching: If core test results are satisfactory and piles comply with requirements, solidly fill core holes with patching mortar and finish to match adjacent pile surfaces.
- F. Piles will be considered defective if they do not pass tests and inspections.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Site Conditions: Existing timber piling are located within project site. Contractor responsible for removing any existing piling located in the place of new piles. Contractor must visit site to view the existing site conditions prior to bid.

### 3.2 DRIVING EQUIPMENT – CONTRACTOR INSTALLATION OPTION

- A. Pile Hammer: Air-, steam-, hydraulic-, or diesel-powered type capable of consistently delivering adequate peak-force duration and magnitude to develop the ultimate capacity required for type and size of pile driven and character of subsurface material anticipated.
  - 1. Use pile hammer capable of adjustment to deliver reduced impact to maintain tensile stress within 70 percent of yield strength of pile reinforcement.
- B. Hammer Cushions and Driving Caps: Between hammer and top of pile, provide hammer cushion and steel driving cap as recommended by hammer manufacturer and as required to drive pile without damage.
- C. Leads: Use fixed, semifixed, or hanging-type pile-driver leads that will hold full length of pile firmly in position and in axial alignment with hammer.

### 3.3 INSTALLING PILES – CONTRACTOR INSTALLATION OPTION

- A. General: Continuously jet or drive piles to elevations indicated – install piles until top of pile is at finish elevation – no cut-offs permitted. Establish and maintain axial alignment of leads and piles before and during jetting or driving.
- B. Predrilling: Provide pre-excavated holes where indicated, to depths indicated. Drill holes with a diameter less than the largest cross-section dimension of pile.
- C. Heaved Piles: Redrive heaved piles to tip elevation at least as deep as original tip elevation with a driving resistance at least as great as original driving resistance.
- D. Installation Tolerances: Install piles without exceeding the following tolerances, measured at pile heads:

1. Location: 4 inches from location indicated after initial driving, and 6 inches after pile driving is completed.
  2. Plumb: Maintain 1 inch in 4 feet from vertical, or a maximum of 4 inches, measured when pile is aboveground in leads.
- E. Withdraw damaged or defective piles and piles that exceed driving tolerances and install new piles within driving tolerances.
1. Fill holes left by withdrawn piles using cohesionless soil material such as gravel, broken stone, and gravel-sand mixtures. Place and compact in lifts not exceeding 72 inches.
  2. Fill holes left by withdrawn piles as directed by Architect.
- F. Abandon and cut off rejected piles as directed by Architect. Leave rejected piles in place and install new piles in locations as directed by Architect.
- G. Cutting Off: Not permitted.
- H. Buildups: Construct buildups to elevations indicated of cast-in-place reinforced concrete with compressive strength not less than 6000 psi at 28 days.
- I. Pile-Installing Records: Maintain accurate installation records for each pile, compiled and attested to by a qualified professional engineer hired by the Owner. Include the following data:
1. Project name and number.
  2. Name of Contractor.
  3. Type of pile and date of casting.
  4. Pile location in pile group and designation of pile group.
  5. Sequence of driving in pile group.
  6. Pile dimensions.
  7. Ground elevation.
  8. Elevation of tips after driving.
  9. Final tip and cutoff elevations of piles after driving pile group.
  10. Records of re-driving.
  11. Elevation of splices.
  12. Type, make, model, and rated energy of hammer.
  13. Weight and stroke of hammer.
  14. Type of pile-driving cap used.
  15. Cushion material and thickness.
  16. Actual stroke and blow rate of hammer.
  17. Pile-driving start and finish times, and total driving time.
  18. Time, pile-tip elevation, and reason for interruptions.
  19. Number of blows for every 12 inches of penetration, and number of blows per 1 inch for the last 6 inches of driving.
  20. Pile deviations from location and plumb.
  21. Preboring, jetting, or special procedures used.
  22. Unusual occurrences during pile driving.

### 3.4 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:
  - 1. Pile foundations.
  - 2. Continuous observation of piling installation.
- B. Testing Agency: Engage a qualified independent testing agency to perform tests and inspections.
- C. Tests and Inspections:
  - 1. Dynamic Pile Testing: High-strain dynamic monitoring shall be performed and reported according to ASTM D 4945 during initial driving and during restriking on 4 single piles.
  - 2. Low-strain integrity measurement shall be performed and reported for each pile.

### 3.5 DISPOSAL

- A. Remove withdrawn piles and cutoff sections of piles from site and legally dispose of them off Owner's property.

END OF SECTION 316213

SECTION 02517  
CONCRETE PAVING STONES

PART 1 GENERAL

101. WORK INCLUDED

- A. Concrete paving stones.
- B. Sand Bedding.
- C. Installation.
- D. Clean Up.
- E. The CONTRACTOR shall provide all materials, labor, equipment, tools, etc., and perform all required work and services necessary for and incidental to a complete installation as shown on the PLANS and/or called for in the SPECIFICATIONS in complete accord with the CONTRACT DOCUMENTS.
- F. All supplementary or miscellaneous items, equipment, appurtenances, or devices necessary for or incidental to a complete and functional installation, whether or not shown on the PLANS or addressed in the SPECIFICATIONS, shall be provided and installed as part of the WORK.

102. REFERENCES

- A. ASTM C33 - Standard Specification for Concrete Aggregates
- B. ASTM C140 - Standard Method of Sampling and Testing Concrete Masonry Units
- C. ASTM C936 - Standard Specification for Solid Concrete Interlocking Paving Units

103. SUBMITTALS

- A. Submit two (2) samples of paving stones to the ENGINEER for approval.
- B. Provide manufacturers' literature fully describing the selected products.
- C. Provide copies of manufacturers' recommended handling, storage, and installation instructions.

104. DELIVERY, STORAGE, AND HANDLING

- A. Deliver and unload stones at job site in strapped cubes so as not to damage the product.
- B. Protect all materials from weather and damage. Material damaged in any fashion shall be replaced by the CONTRACTOR.

## 105. METHOD OF PAYMENT

- A. Payment for CONCRETE PAVING STONES shall be included within the respective price for the WORK as shown in the BID SCHEDULE. No additional payment shall be made for CONCRETE PAVING STONES.
- B. The above payment shall be full compensation for all WORK covered by this section including, but not limited to: concrete paving stones, sand bedding, installing, and cleanup.

PART 2 PRODUCTS

## 201. CONCRETE PAVING STONES

- A. Concrete paving stones shall be manufactured in accordance with and shall meet the test requirements of ASTM C936.
- B. Pavers shall have a minimum compressive strength of 8,000 psi and a maximum absorption of 5% when tested in accordance with ASTM C140.
- C. The size, shape, design, and color of pavers shall be as shown on the PLANS.

## 202. BEDDING SAND

- A. Bedding sand shall consist of natural sand having clean, durable, hard, uncoated particles meeting the requirements of ASTM C33.
- B. Sand shall be free from dirt, trash, and other foreign material.
- C. Sand shall be graded from coarse to fine within the following limits:

<u>U. S. Standard Sieve</u>	<u>Percent Passing by Weight</u>
3/8"	100
No. 4	90-96
No. 100	10-30

PART 3 EXECUTION

## 301. PREPARATION

- A. Prepare subgrade and base.
- B. Establish and verify correct lines, grades, and datum.
- C. Clean pavers free of all foreign materials.

## 302. INSTALLATION

- A. Place sand bedding course to a uniform depth of approximately 1½ inches and screed to a smooth, uniform surface.
- B. Begin installation at a corner or along a straight edge and proceed forward over the undisturbed sand bedding course.

- C. Install paving stones with hand tight joints true to line and grade. Use string lines to maintain pattern lines.
- D. Install to properly coincide and align with adjacent work lines and elevations. Where required, saw cut paving stones to fit accurately, neatly, and without damaged edges.
- E. Tamp paving stones with a vibratory compactor to compact the stones and vibrate the sand up into the joints between the stones.
- F. Spread fine sand over the installed paving stones and vibrate it into the joints between the stones. Sweep remaining sand into the joints until they are filled flush with the top surface of the stones. Remove excess sand.

303. CLEAN UP

- A. Sweep the completed paved surface clean and remove all loose excess sand.
- B. Hose down the completed paving to provide a finished workmanlike installation.
- C. Remove all debris from the site.

END OF SECTION

## SECTION 02875

## BOLLARDS AND CHAINS

PART 1 GENERAL

## 101. WORK INCLUDED

- A. Bollards.
- B. Chains.
- C. Eyebolts.
- D. Connecting links.
- E. Painting eyebolts and connecting links.
- F. Installation
- G. The CONTRACTOR shall provide all materials, labor, equipment, tools, etc., and perform all required work and services necessary for and incidental to a complete installation as shown on the PLANS and/or called for in the SPECIFICATIONS in complete accord with the CONTRACT DOCUMENTS.
- H. All supplementary or miscellaneous items, equipment, appurtenances, or devices necessary for or incidental to a complete and functional installation, whether or not shown on the PLANS or addressed in the SPECIFICATIONS, shall be provided and installed as part of the WORK.

## 102. REFERENCES

- A. North Carolina Department of Transportation "Standard Specifications for Roads and Structures", latest edition, hereinafter referred to as NC DOT SSRS.
- B. Prestressed Concrete Institute MNL-116 "Manual for Quality Control for Plants and Production of Precast and Prestressed Concrete Products", hereinafter referred to as PCI MNL-116.

## 103. SUBMITTALS

- A. Submit six (6) copies of shop drawings to the ENGINEER for approval. Include as a minimum:
  - 1. Name, address, and telephone number of manufacturer.
  - 2. General design data.
  - 3. Concrete mix design for each type concrete.
    - a. Sieve analysis for fine and coarse aggregates.
    - b. Aggregate organic impurities test results.
    - c. Mill certificates for cement.
    - d. Admixtures.

- e. Proportioning of all materials.
  - f. Slump test results.
  - g. Air content test results.
  - h. Compression test results at seven (7) days and twenty-eight (28) days.
- 4. Reinforcing steel details.
    - a. Type, size, and strength.
    - b. Fabrication.
    - c. Placement including spacing.
  - 5. Complete construction details and dimensions showing all cuts, copes, holes, connections, bolts, etc.
  - 6. Manufacturer's recommended handling, storage, and installation instructions.

104. DELIVERY, STORAGE, AND HANDLING

- A. Box, crate, or otherwise completely protect all materials during shipment, handling, and storage.
- B. Store all materials above ground.
- C. Protect from exposure to the elements and keep all items thoroughly dry at all times. Protect from exposure to excessive heat and direct sunlight. Secure all materials against wind damage.
- D. Protect from mud, stains, discoloration, abuse, abrasion, impact, corrosion, deterioration, and other damage.
- E. Store in such a manner as to prevent distortion to equipment, materials, and support structures.
- F. Repair or replace damaged equipment, materials, or structures.

105. METHOD OF PAYMENT

- A. Payment for BOLLARDS AND CHAINS shall be included within the price for the WORK as shown in the BID SCHEDULE. No additional payment shall be made for BOLLARDS AND CHAINS.
- B. The above payment shall be full compensation for all work covered by this section.

PART 2 PRODUCTS

201. BOLLARDS

- A. Bollards shall be precast concrete units constructed to the design and dimensions shown on the PLANS.
- B. Bollards shall be manufactured in conformance with PCI MNL-116.

- C. Concrete shall meet the following requirements.
1. Minimum compressive strength at twenty eight (28) days - 3500 psi
  2. Minimum cement content - 640 lbs/CY
  3. Maximum water-cement ratio - 0.43 lb/lb
  4. Air Content - 4.5% to 6.0%
  5. Maximum slump - 3 inches
  6. Maximum aggregate size -  $\frac{3}{8}$  inch
- D. Reinforcing steel shall be Grade 40.
- E. Finished surfaces shall be smooth, clean, and uniform in color and texture. Bollards with defects such as holes, honeycomb, air bubbles, cracks, spalls, fins, bulges, projections, nonuniform color, and other irregularities shall not be accepted.

202. EYEBOLTS

- A. Eyebolts shall be  $\frac{1}{2}$  inch trade size by six (6) inch long general purpose forged eyebolts.
- B. Eyebolts shall be hot galvanized.
- C. Eyebolts shall be painted as specified herein prior to casting into bollards.
- D. Acceptable product.
  1. Campbell Chain Company stock number 7150109.

203. CHAIN

- A. Chain shall be general purpose, proof tested, electrical welded, low carbon steel chain meeting the following requirements.
  1. Trade size -  $\frac{1}{2}$  inch
  2. Material diameter - 0.51 inch
  3. Inside length - 1.70 inches
  4. Inside width - 0.75 inches
  5. Links per foot - 7.1 each
  6. Weight - 2.38 lbs/ft
  7. Working load limit - 4500 lbs
- B. Chain shall be hot galvanized and fully painted as specified herein.
- C. Acceptable products.
  1. Campbell Chain Company stock number 0120832.

## 204. CONNECTING LINKS

- A. Connecting links shall be ½ inch trade size general purpose, forged, weldless, heat treated, carbon steel connecting links.
- B. Connecting links shall be hot galvanized.
- C. Connecting links shall be painted as specified herein.
- D. Acceptable product.
  - 1. Campbell Chain Company stock number 5200834.

## 205. PAINT

- A. First Coat: Tnemec Series N69 Hi-Build Epoxoline II, or equal, to a minimum dry film thickness of 4.0 mils.
- B. Finish Coat: Tnemec Series 1074U Endura-Shield II, or equal, to a minimum dry film thickness of 1.5 mils.
- C. Paint color shall be black.

PART 3 EXECUTION

## 301. PROTECTION

- A. All construction shall comply with all safety regulations and safeguards for the safety and protection of all persons within the construction area. Erect and maintain all work in a safe and stable condition.
- B. Protect existing landscaping, trees, structures, fences, pavements, curbs, gutters, bench marks, utilities, and other features which are to remain.
- C. Repair all damages. All features disturbed shall be restored to conditions as good as or better than originally existed.

## 302. PREPARATION

- A. Establish and verify correct line and spacing of bollards prior to placing concrete in bulkhead cap.
- B. Bollards shall be uniformly spaced between section ends and/or corner turns at approximately ten (10) feet on centers.
- C. Exact spacing shall be determined at the site and coordinated with the ENGINEER.

## 303. INSTALLATION

- A. Bollards and chains shall be installed in accordance with these SPECIFICATIONS, the PLANS, and as directed by the ENGINEER.
- B. Bollards shall be properly aligned horizontally. Each individual bollard shall be set plumb.

- C. Bollards shall be set in epoxy grout.
- D. Chains shall be hung with uniform sag as shown on the PLANS throughout the entire project.

END OF SECTION

SECTION 03300  
CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:
  - 1. Piles.
  - 2. Foundations and pedestals.
- B. Related Sections:
  - 1. Division 03 Section 02360 "Concrete Piles" for piles.
  - 2. Division 07 Section 07140 "Fluid Applied Waterproofing" and Section 07160 "Cementitious Waterproofing for coordination of unexposed concrete finishing for application of sheet waterproofing.
  - 3. Concrete paving and walks are specified in Division 32.

1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
  - 1. Indicate amounts of mixing water to be withheld for later addition at Project site.
- C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.
- D. Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer detailing fabrication, assembly, and support of formwork.

1. Shoring and Reshoring: Indicate proposed schedule and sequence of stripping formwork, shoring removal, and reshoring installation and removal.
- E. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.
1. Location of construction joints is subject to approval of the Architect.
- F. Samples of materials as requested by Architect, including names, sources, and descriptions, as follows:
1. Normal weight and light weight aggregates.
  2. Reglets.
  3. Vapor retarder.
- G. Welding certificates.
- H. Laboratory test reports for concrete materials and mix design test.
- I. Materials certificates in lieu of materials laboratory test reports when permitted by Architect. Materials certificates shall be signed by manufacturer and Contractor, certifying that each material item complies with or exceeds specified requirements. Provide certification from admixture manufacturers that chloride content complies with specification requirements.
- J. Material Certificates: For each of the following, signed by manufacturers:
1. Cementitious materials.
  2. Admixtures.
  3. Form materials and form-release agents.
  4. Steel reinforcement and accessories.
  5. Waterstops.
  6. Curing compounds.
  7. Bonding agents.
  8. Adhesives.
  9. Vapor retarders.
  10. Semirigid joint filler.
  11. Joint-filler strips.
  12. Repair materials.
- K. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:
1. Aggregates.
- L. Minutes of concrete pre-construction conference.
- 1.5 QUALITY ASSURANCE
- A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- B. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.
- C. Welding Qualifications: Qualify procedures and personnel according to AWS D1.4/D 1.4M, "Structural Welding Code - Reinforcing Steel."
- D. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
  1. ACI 301, "Specifications for Structural Concrete," Sections 1 through 5.
  2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
- E. Concrete Pre-Construction Conference: A conference at Project site may be held at the discretion of the Construction Administrator.
  1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
    - a. Contractor's superintendent.
    - b. Independent testing agency responsible for concrete design mixtures.
    - c. Ready-mix concrete manufacturer.
    - d. Concrete subcontractor.
    - e. Special concrete finish subcontractor.
  2. Review special inspection and testing and inspecting agency procedures for field quality control, concrete finishes and finishing, cold- and hot-weather concreting procedures, curing procedures, construction contraction and isolation joints, and joint-filler strips, semirigid joint fillers, forms and form removal limitations, shoring and reshoring procedures, vapor-retarder installation, anchor rod and anchorage device installation tolerances, steel reinforcement installation, floor and slab flatness and levelness measurement, concrete repair procedures, and concrete protection.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.
- B. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

## PART 2 - PRODUCTS

### 2.1 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
  - 1. Plywood, metal, or other approved panel materials.
  - 2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:
    - a. Structural 1, B-B or better; mill oiled and edge sealed.
- B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.
- C. Pan-Type Forms: Glass-fiber-reinforced plastic or formed steel, stiffened to resist plastic concrete loads without detrimental deformation.
- D. Void Forms: Biodegradable paper surface, treated for moisture resistance, structurally sufficient to support weight of plastic concrete and other superimposed loads.
- E. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch minimum.
- F. Rustication Strips: Wood, metal, PVC, or rubber strips, kerfed for ease of form removal.
- G. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
  - 1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
- H. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
  - 1. Furnish units that will leave no corrodible metal closer than 1 inch to the plane of exposed concrete surface.
  - 2. Furnish ties that, when removed, will leave holes no larger than 1 inch in diameter in concrete surface.
  - 3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

### 2.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.
- B. Steel Bar Mats: ASTM A 184/A 184M, fabricated from ASTM A 615/A 615M, Grade 60, deformed bars, assembled with clips.
- C. Plain-Steel Wire: ASTM A 82/A 82M.

- D. Deformed-Steel Wire: ASTM A 496/A 496M.
- E. Deformed-Steel Welded Wire Reinforcement: ASTM A 497/A 497M, flat sheet.

### 2.3 REINFORCEMENT ACCESSORIES

- A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60, plain-steel bars, cut true to length with ends square and free of burrs.
- B. Epoxy Repair Coating: Liquid, two-part, epoxy repair coating; compatible with epoxy coating on reinforcement and complying with ASTM A 775/A 775M.
- C. Zinc Repair Material: ASTM A 780, zinc-based solder, paint containing zinc dust, or sprayed zinc.
- D. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:
  - 1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.
  - 2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.
  - 3. For zinc-coated reinforcement, use galvanized wire or dielectric-polymer-coated wire bar supports.

### 2.4 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
  - 1. Portland Cement: ASTM C 150, Type I.
    - a. Fly Ash: Not permitted.
- B. Normal-Weight Aggregates: ASTM C 33, coarse aggregate or better, graded. Provide aggregates from a single source.
  - 1. Maximum Coarse-Aggregate Size: 3/4 inch nominal.
  - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- C. Water: ASTM C 94/C 94M and potable.

### 2.5 ADMIXTURES

- A. Air-Entraining Admixture: ASTM C 260.
- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
  2. Retarding Admixture: ASTM C 494/C 494M, Type B.
  3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D Contractor's option with prior written approval from designer.
  4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F – for all site retaining walls.
  5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
  6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.
- C. Non-Set-Accelerating Corrosion-Inhibiting Admixture: Commercially formulated, non-set-accelerating, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete. Use in all site retaining walls and sheet pile wall caps.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, provide one of the following with a dosage rate of 3 gallons per cubic yard:
    - a. Cortec Corporation; MCI- 2000
    - b. Euclid Chemical Co.; Eucon BCN
    - c. Master Builders, Inc.; Rheocrete CNI
    - d. Sika Corporation; Sika CNI or FerroGard 901
    - e. W.R. Grace & Co.; DCI-S

## 2.6 WATERSTOPS

- A. Flexible Rubber Waterstops (Contractor Option with 2.6B): CE CRD-C 513, for embedding in concrete to prevent passage of fluids through joints. Factory fabricate corners, intersections, and directional changes.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Greenstreak.
    - b. Horn Durajoint
    - c. Williams Products, Inc.
  2. Profile: Ribbed with center bulb.
  3. Dimensions: 6 inches by 3/8 inch thick nontapered.
- B. Flexible PVC Waterstops (Contractor Option with 2.6A): CE CRD-C 572, for embedding in concrete to prevent passage of fluids through joints. Factory fabricate corners, intersections, and directional changes.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. BoMetals, Inc.
    - b. Greenstreak.

- c. Paul Murphy Plastics Company.
    - d. Vinylex Corp.
  - 2. Profile: Ribbed with center bulb.
  - 3. Dimensions: 6 inches by 3/8 inch thick; nontapered.
- C. Self-Expanding Rubber Strip Waterstops: At joints between existing masonry or concrete and new masonry or concrete as shown on the plans provide a one part polyurethane, extrudable, bentonite free, swelling waterstop with a triangular dimension of 3/4 by 3/4 by 3/4 inch.
- 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Adeka Ultra Seal/OCM, Inc.; Adeka Ultra Seal.
    - b. Greenstreak; Hydrotite.
    - c. Vinylex Corp.; Swellseal.
- D. Fine-Graded Granular Material: Clean mixture of crushed stone, crushed gravel, and manufactured or natural sand; ASTM D 448, Size 10, with 100 percent passing a 3/8-inch sieve, 10 to 30 percent passing a No. 100 sieve, and at least 5 percent passing No. 200 sieve; complying with deleterious substance limits of ASTM C 33 for fine aggregates.

## 2.7 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
- 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    - a. BASF Construction Chemicals - Building Systems; Confilm.
    - b. ChemMasters; SprayFilm.
    - c. Conspec by Dayton Superior; Aquafilm.
    - d. Dayton Superior Corporation; Sure Film (J-74).
    - e. Euclid Chemical Company (The), an RPM company; Eucobar.
    - f. L&M Construction Chemicals, Inc.; E-CON.
    - g. Meadows, W. R., Inc.; EVAPRE.
    - h. Sika Corporation; SikaFilm.
    - i. Symons by Dayton Superior; Finishing Aid.
    - j. Unitex; PRO-FILM.
- B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.
- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, nondissipating, certified by curing compound manufacturer to not interfere with bonding of floor covering.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
  - a. Anti-Hydro International, Inc.; AH Clear Cure WB.
  - b. BASF Construction Chemicals - Building Systems; Kure-N-Seal WB.
  - c. ChemMasters; Safe-Cure & Seal 20.
  - d. Conspec by Dayton Superior; Cure and Seal WB.
  - e. Cresset Chemical Company; Crete-Trete 309-VOC Cure & Seal.
  - f. Dayton Superior Corporation; Safe Cure and Seal (J-18).
  - g. Euclid Chemical Company (The), an RPM company; Aqua Cure VOX; Clearseal WB 150.
  - h. L&M Construction Chemicals, Inc.; Dress & Seal WB.
  - i. Meadows, W. R., Inc.; Vocomp-20.
  - j. Symons by Dayton Superior; Cure & Seal 18 Percent E.

## 2.8 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.
- B. Semirigid Joint Filler: Two-component, semirigid, 100 percent solids, epoxy resin with a Type A shore durometer hardness of 80 per ASTM D 2240.
- C. Bonding Agent: ASTM C 1059/C 1059M, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
- D. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:
  1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.
- E. Reglets: Fabricate reglets of not less than 0.022-inch - thick, galvanized-steel sheet. Temporarily fill or cover face opening of reglet to prevent intrusion of concrete or debris.
- F. Dovetail Anchor Slots: Hot-dip galvanized-steel sheet, not less than 0.034 inch thick, with bent tab anchors. Temporarily fill or cover face opening of slots to prevent intrusion of concrete or debris.

## 2.9 REPAIR MATERIALS

- A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.
  1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
  2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
  3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by underlayment manufacturer.

4. Compressive Strength: Not less than 4,000 psi at 28 days when tested according to ASTM C 109/C 109M.
- B. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch and that can be filled in over a scarified surface to match adjacent floor elevations.
1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
  2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
  3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.
  4. Compressive Strength: Not less than 5000 psi at 28 days when tested according to ASTM C 109/C 109M.

## 2.10 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.
- B. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.
- C. Admixtures: Use admixtures according to manufacturer's written instructions.
1. Note: Contractor's options to use admixtures as indicated below are allowed, with prior written approval from designer, for types of concrete building elements not listed in Article 2.5 B.4 of this Section.
    - a. Contractor's option with prior written approval from designer to use water-reducing high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.
    - b. Contractor's option with prior written approval from designer to use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
  2. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.
  3. Use corrosion-inhibiting admixture in concrete mixtures in all site foundations and walls and piles.

## 2.11 CONCRETE MIXTURES FOR BUILDING ELEMENTS

- A. Site Walls & Foundations: Proportion normal-weight concrete mixture as follows:
1. Minimum Compressive Strength: 4000 psi at 28 days.
  2. Maximum Water-Cementitious Materials Ratio: 0.40.

3. Slump Limit: 5 inches for concrete with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch.
4. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 3/4-inch nominal maximum aggregate size.

B. Slabs-on-Grade: Proportion normal-weight concrete mixture as follows:

1. Minimum Compressive Strength: 3000 psi at 28 days.
2. Minimum Cementitious Materials Content: 520 lb/cu. yd.
3. Slump Limit: 5 inches plus or minus 1 inch.
4. Air Content: Do not allow air content of trowel-finished floors to exceed 3 percent.

## 2.12 MISCELLANEOUS ANCHORS

A. Postinstalled Anchors: Provide chemical anchors, with capability to sustain, without failure, a load equal to six times the load imposed when installed in solid or grouted unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.

1. Corrosion Protection: Hot-dip galvanized steel per ASTM A 153 and ASTM A 123 or Stainless-steel components complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2 for bolts and nuts; ASTM A 666 or ASTM A 276, Type 304 or 316, for anchors.
2. Anchors must be 2009 IBC Compliant Anchors, meet the ICC-ES Cracked Concrete requirements, and meet the ICC-ESR Seismic Design Category A-F requirements.
3. Anchor installers must be a certified Adhesive Anchor Installer through the ACI-CRSI Adhesive Anchor Installation Certification Program.

## 2.13 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

## 2.14 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.

1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

# PART 3 - EXECUTION

## 3.1 FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.

- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Limit concrete surface irregularities, designated by ACI 347 as abrupt or gradual, as follows:
  - 1. Class A, 1/8 inch for smooth-formed finished surfaces.
- D. Construct forms tight enough to prevent loss of concrete mortar.
- E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
  - 1. Install keyways, reglets, recesses, and the like, for easy removal.
  - 2. Do not use rust-stained steel form-facing material.
- F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- H. Chamfer exterior corners and edges of permanently exposed concrete.
- I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

### 3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
  - 1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."
  - 2. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.
  - 3. Install dovetail anchor slots in concrete structures as indicated.

### 3.3 REMOVING AND REUSING FORMS

- A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations and curing and protection operations need to be maintained.
  - 1. Leave formwork for beam soffits, joists, slabs, and other structural elements that supports weight of concrete in place until concrete has achieved at least 70 percent of its 28-day design compressive strength.
  - 2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.
- B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.
- C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

### 3.4 SHORES AND RESHORES

- A. Comply with ACI 318 and ACI 301 for design, installation, and removal of shoring and reshoring.
  - 1. Do not remove shoring or reshoring until measurement of slab tolerances is complete.
- B. In multistory construction, extend shoring or reshoring over a sufficient number of stories to distribute loads in such a manner that no floor or member will be excessively loaded or will induce tensile stress in concrete members without sufficient steel reinforcement.
- C. Plan sequence of removal of shores and reshore to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection.

### 3.5 VAPOR RETARDERS

- A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder according to ASTM E 1643 and manufacturer's written instructions.
  - 1. Lap joints 6 inches and seal with manufacturer's recommended tape.
  - 2. Seal around all penetrations with manufacturer's recommended system.

### 3.6 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
  - 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.

- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
  - 1. Weld reinforcing bars according to AWS D1.4/D 1.4M, where indicated.
- D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.
- E. Install welded wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

### 3.7 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
  - 1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
  - 2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete.
  - 3. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
  - 4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
  - 5. Space vertical joints in walls as indicated. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
  - 6. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows:
  - 1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
  - 2. Sawed Joints: Form contraction joints with early-entry dry-cut power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch-wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks within 4 hours of pour.
- D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
  - 1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless otherwise indicated.

2. Terminate full-width joint-filler strips not less than 1/2 inch or more than 1 inch below finished concrete surface where joint sealants, specified in Division 07 Section 079200 "Joint Sealants," are indicated.
  3. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.
- E. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

### 3.8 WATERSTOPS

- A. Flexible Waterstops: Install in construction joints and at other joints indicated to form a continuous diaphragm. Install in longest lengths practicable. Support and protect exposed waterstops during progress of the Work. Field fabricate joints in waterstops according to manufacturer's written instructions.
- B. Self-Expanding Strip Waterstops: Install in construction joints and at other locations indicated, according to manufacturer's written instructions, adhesive bonding, mechanically fastening, and firmly pressing into place. Install in longest lengths practicable.

### 3.9 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.
  1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.
- C. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
  1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
  2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
  3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.
- D. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
  1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
  2. Maintain reinforcement in position on chairs during concrete placement.

3. Screed slab surfaces with a straightedge and strike off to correct elevations.
  4. Slope surfaces uniformly to drains where required.
  5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.
- E. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
  2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
  3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.
- F. Hot-Weather Placement: Comply with ACI 301 and as follows:
1. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
  2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

### 3.10 FINISHING FORMED SURFACES

- A. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
1. Apply to concrete surfaces exposed to public view, to receive a rubbed finish, to be covered with a coating or covering material applied directly to concrete.
- B. Rubbed Finish: Apply the following to smooth-formed finished as-cast concrete where indicated:
1. Smooth-Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.
  2. Grout-Cleaned Finish: Wet concrete surfaces and apply grout of a consistency of thick paint to coat surfaces and fill small holes. Mix one part portland cement to one and one-half parts fine sand with a 1:1 mixture of bonding admixture and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean burlap and keep surface damp by fog spray for at least 36 hours.
  3. Cork-Floated Finish: Wet concrete surfaces and apply a stiff grout. Mix one part portland cement and one part fine sand with a 1:1 mixture of bonding agent and water.

Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Compress grout into voids by grinding surface. In a swirling motion, finish surface with a cork float.

- C. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

### 3.11 FINISHING FLOORS AND SLABS

- A. General: Comply with ACI 302.1R recommendations for screeding, restraighening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of 1/4 inch in one direction.
  - 1. Apply scratch finish to surfaces indicated.
- C. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraighening until surface is left with a uniform, smooth, granular texture.
  - 1. Apply float finish to surfaces indicated.
- D. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighen until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
  - 1. Apply a trowel finish to surfaces indicated.
  - 2. Finish surfaces to the following tolerances, according to ASTM E 1155 , for a randomly trafficked floor surface:
    - a. Specified overall values of flatness, F(F) 35; and of levelness, F(L) 25; with minimum local values of flatness, F(F) 24; and of levelness, F(L) 17; for slabs-on-grade.
    - b. Specified overall value of flatness, F(F) 30; with a minimum local value of flatness, F(F) 24; for suspended slabs.
    - c. Special Conditions: For areas receiving concrete flooring that are restricted to smaller areas due to bearing walls, are sloped for drainage or by design, and/or have a high quantity of floor penetrations, the Architect's Representative will determine acceptable deviations/exceptions in testing requirements.
      - 1) Architect's Representative may at his discretion:
        - a) Waive testing requirements entirely,
        - b) Reduce the number and select the location of tests,
        - c) Waive penalties between specified and minimum locals,
        - d) Require that tolerances exceed minimum locals only,

- e) Waive the requirement for removal of concrete not meeting minimum locals if, in the Architect Representative's opinion, repairs can bring floors into acceptable/serviceable tolerances.
- E. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces where ceramic or quarry tile is to be installed by either thickset or thin-set method. While concrete is still plastic, slightly scarify surface with a fine broom.
  - 1. Comply with flatness and levelness tolerances for trowel-finished floor surfaces.
- F. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated.
  - 1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

### 3.12 MISCELLANEOUS CONCRETE ITEMS

- A. Filling In: Fill in holes and openings left in concrete structures after work of other trades is in place unless otherwise indicated. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.
- B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.
- C. Equipment Bases and Foundations: Provide equipment bases and foundations as shown on Drawings. Set anchor bolts for machines and equipment at correct elevations, complying with diagrams or templates from manufacturer furnishing equipment.

### 3.13 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.
- D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.
- E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
  - a. Water.
  - b. Continuous water-fog spray.
  - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
  - a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
  - b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
  - c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies will not interfere with bonding of floor covering used on Project.
3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
  - a. Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer unless manufacturer certifies curing compound will not interfere with bonding of floor covering used on Project.

### 3.14 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.
- B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.
- C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
  1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension to solid concrete. Limit cut depth to 3/4 inch. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.

2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
  3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.
- D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
  2. After concrete has cured at least 14 days, correct high areas by grinding.
  3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
  4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
  5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
  6. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
  7. Repair random cracks and single holes 1 inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.
- E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.
- F. Repair materials and installation not specified above may be used, subject to Architect's approval.

### 3.15 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Owner will engage a special inspector and qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.
- B. Inspections:
  - 1. Steel reinforcement placement.
  - 2. Steel reinforcement welding.
  - 3. Headed bolts and studs.
  - 4. Verification of use of required design mixture.
  - 5. Concrete placement, including conveying and depositing.
  - 6. Curing procedures and maintenance of curing temperature.
  - 7. Verification of concrete strength before removal of shores and forms from beams and slabs.
- C. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
  - 1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.
    - a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
  - 2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture/truckload. Perform additional tests when concrete consistency appears to change.
  - 3. Air Content: ASTM C 231, pressure method, for normal-weight concrete; ASTM C 173/C 173M, volumetric method, for structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
  - 4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
  - 5. Compression Test Specimens: ASTM C 31/C 31M.
    - a. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.
  - 6. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.
    - a. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
  - 7. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
  - 8. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.

9. Test results shall be reported in writing to Engineer, Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
  10. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
  11. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Architect.
  12. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
  13. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.
- D. Measure floor and slab flatness and levelness according to ASTM E 1155 within 48 hours of finishing.

END OF SECTION 03300

SECTION 04200  
UNIT MASONRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. This Section includes requirements for Installer qualifications, including material and labor provision, separate bonding capacity, project experience, and key personnel experience.

1.2 SUMMARY

- A. This Section includes unit masonry assemblies consisting of the following:

- 1. Concrete masonry units (CMUs).
- 2. Mortar and grout.
- 3. Reinforcing steel.
- 4. Masonry joint reinforcement.
- 5. Ties and anchors.
- 6. Embedded flashing.
- 7. Miscellaneous masonry accessories.

- B. Related Sections:

- 1. Division 07 Section 07140 "Fluid-Applied Waterproofing".

- C. Products furnished, but not installed, under this Section include the following:

- 1. Dovetail slots for masonry anchors, installed under Division 3 Section 033000 "Cast-in-Place Concrete."

D. DEFINITIONS

- E. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.3 PERFORMANCE REQUIREMENTS

- A. Provide structural unit masonry that develops indicated net-area compressive strengths ( $f'_m$ ) at 28 days.
- B. Determine net-area compressive strength ( $f'_m$ ) of masonry from average net-area compressive strengths of masonry units and mortar types (unit-strength method) according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.
- C. Determine net-area compressive strength ( $f'_m$ ) of masonry by testing masonry prisms according to ASTM C 1314.

## 1.4 SUBMITTALS

- A. Qualification Data: For firms and persons specified in "Quality Assurance" Article.
  - 1. Submit list of minimum of five similar projects, including description of project size and scope, and name and contact information for architect, for Installer, superintendent, and crew chiefs. Indicate total years of experience for each.
- B. Product Data: For each type of product indicated.
- C. Shop Drawings: For the following:
  - 1. Masonry Units: Show sizes, profiles, coursing, and locations of special shapes.
  - 2. Reinforcing Steel: Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement." Show elevations of reinforced walls.
  - 3. Fabricated Flashing: Detail corner units, end-dam units, and other special applications.
- D. Samples for Verification: For each type and color of the following:
  - 1. Weep holes/vents.
  - 2. Accessories embedded in masonry.
- E. Qualification Data: For testing agency.
- F. Material Certificates: Include statements of material properties indicating compliance with requirements including compliance with standards and type designations within standards. Provide for each type and size of the following:
  - 1. Masonry units.
    - a. Include material test reports substantiating compliance with requirements.
    - b. For masonry units used in structural masonry, include data and calculations establishing average net-area compressive strength of units.
  - 2. Aggregates.
  - 3. Cementitious materials. Include brand, type, and name of manufacturer.
  - 4. Preblended, dry mortar mixes. Include description of type and proportions of ingredients.
  - 5. Grout mixes. Include description of type and proportions of ingredients.
  - 6. Reinforcing bars.
  - 7. Joint reinforcement.
  - 8. Anchors, ties, and metal accessories.
- G. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.
  - 1. Include test reports, per ASTM C 1019, for grout mixes required to comply with compressive strength requirement.
- H. Statement of Compressive Strength of Masonry: For each combination of masonry unit type and mortar type, provide statement of average net-area compressive strength of masonry units, mortar type, and resulting net-area compressive strength of masonry determined according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.

- I. Cold-Weather and Hot-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with cold-weather and hot-weather requirements.

## 1.5 QUALITY ASSURANCE

- A. Masonry Installer: A single, experienced firm specializing in masonry construction with a minimum five year record of successful completion of projects of similar scope, capable of providing labor and material and performance bonds for its portion of the Work that are acceptable to the Owner. Installer shall furnish all required materials and equipment and perform the work of this Section with its own regular employees.
  - 1. The masonry supervisor/foreman shall have had at least 5 years of experience with at least 5 projects of similar size and nature; he shall not act as or become a production worker.
  - 2. The lead/crew chief masons shall have had at least 3 years of experience with at least 5 projects of similar size and nature.
  - 3. Installer shall have experienced superintendent and crew chiefs on site supervising the work whenever work is in progress.
  - 4. Approved Joint Venture: Installer may consist of a joint venture between two or more experienced firms, each meeting the qualifications indicated above.
- B. Testing Agency Qualifications: An independent agency acceptable to authorities having jurisdiction and qualified according to ASTM C 1093 for testing indicated.
- C. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, through one source from a single manufacturer for each product required.
- D. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from a single manufacturer for each cementitious component and from one source or producer for each aggregate.
- E. Limitations on Aggregates: For concrete masonry units containing recycled material or post-industrial waste, provide units free of impurities that will cause rusting, staining or popouts and with a record of successful in-service performance in conditions similar to those expected at Project site.
  - 1. Ferrous material shall be removed by magnetic separation.
  - 2. Aggregates shall contain no combustible materials or coal cinders.
  - 3. Aggregates shall be graded and supplied in consist graduations from batch to batch.
  - 4. Material shall be tested according to the following:
    - a. ASTM C40: Organic Impurities in Fine Aggregates for Concrete.
    - b. ASTM C 136: Sieve Analysis of Fine and Coarse Aggregate.
    - c. ASTM C 641: Staining Materials in Lightweight Concrete Aggregates.
    - d. ASTM C 151: Autoclave Expansion of Hydraulic Cement (for popouts.)
- F. Preconstruction Testing Service: Owner will engage a qualified independent testing agency to perform preconstruction testing indicated below. Payment for these services will be made by Owner. Retesting of materials that fail to meet specified requirements shall be done at Contractor's expense.
  - 1. Clay Masonry Unit Test: For each type of unit required, per ASTM C 67.
  - 2. Concrete Masonry Unit Test: For each type of unit required, per ASTM C 140.
  - 3. Grout Test (Compressive Strength): For each mix required, per ASTM C 1019.
  - 4. Mortar Test: For mortar properties per ASTM C 270.

- G. Daily Log: Maintain a daily log of masonry work in progress for inspection by Owner, Architect, Special Inspector or Authority Having Jurisdiction.
  - 1. Indicate on small scale plans where masonry was erected.
  - 2. Identify crew and assigned work area.
  - 3. Certify that the following tasks have been performed.
    - a. Inspection of reinforcing and thru-wall flashings.
    - b. Inspection of construction and verification of compliance with requirements.
    - c. Testing of cavity drainage.
    - d. Daily cleaning.
  
- H. Preinstallation Conference: Conduct conference at Project site.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- D. Deliver preblended, dry mortar mix in moisture-resistant containers designed for lifting and emptying into dispensing silo. Store preblended, dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in a metal dispensing silo with weatherproof cover.
- E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

#### 1.7 PROJECT CONDITIONS

- A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
  - 1. Extend cover a minimum of 24 inches down both sides and hold cover securely in place.
  - 2. Where 1 wythe of multiwythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24 inches down face next to unconstructed wythe and hold cover in place.
- B. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.
  - 1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
  - 2. Protect sills, ledges, and projections from mortar droppings.
  - 3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.

4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.
- C. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and above and will remain so until masonry has dried, but not less than 7 days after completing cleaning.
- D. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

## PART 2 - PRODUCTS

### 2.1 MASONRY, GENERAL

- A. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to exceed tolerances and to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not use units where such defects, including dimensions that vary from specified dimensions by more than stated tolerances, will be exposed in the completed Work or will impair the quality of completed masonry.

### 2.2 CONCRETE MASONRY UNITS (CMUs)

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Adams Products
  2. E. Dillon & Company
  3. Fay Block Materials
  4. Cemex
  5. Suffolk Block Company
  6. Johnson Concrete Company
  7. Lightweight Block Co.
- B. Concrete Masonry Units: ASTM C 90.
1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 1900 psi.
  2. Weight Classification: Lightweight.
  3. Size (Width): Manufactured to dimensions 3/8 inch less than nominal dimensions.
- C. Shapes: Provide shapes indicated and as follows:
1. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.
  2. Provide square-edged units for outside corners, unless otherwise indicated. Provide bull-nose block for exposed corners on interior walls.

D. Integral Water Repellent: Provide exterior, exposed concrete masonry units made with integral water repellent.

1. Integral Water Repellent: Liquid polymeric, integral water-repellent admixture that does not reduce flexural bond strength. Units made with integral water repellent, when tested as a wall assembly made with mortar containing integral water-repellent manufacturer's mortar additive according to ASTM E 514, with test period extended to 24 hours, show no visible water or leaks on the back of test specimen.

a. Products:

- 1) ACM Chemistries,
- 2) Master Builders, Inc./BASF,
- 3) W. R. Grace & Co.

### 2.3 MASONRY LINTELS

A. General: Provide masonry lintels complying with requirements below.

B. Masonry Lintels: Built-in-place masonry lintels made from bond beam concrete masonry units with reinforcing bars placed as indicated and filled with coarse grout. Temporarily support built-in-place lintels until cured.

### 2.4 MORTAR AND GROUT

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.
2. Limit cementitious materials in mortar to portland cement, mortar cement, and lime.
3. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.

B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.

C. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification. Provide Type S unless another type is needed to provide required compressive strength of masonry.

D. Grout for Unit Masonry: Comply with ASTM C 476.

1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with Table 1.15.1 in ACI 530.1/ASCE 6/TMS 602 for dimensions of grout spaces and pour height.
2. Provide grout with a slump of 8 to 11 inches as measured according to ASTM C143/ C143M.

E. Portland Cement-Lime Mix: Packaged blend of portland cement complying with ASTM C 150, Type I or Type III, and hydrated lime complying with ASTM C 207, Type S.

F. Masonry Cement: Not Permitted.

- G. Mortar Cement: ASTM C 1329.
- H. Colored Cement Product: Packaged blend made from portland cement and lime or mortar cement and mortar pigments, all complying with specified requirements, and containing no other ingredients. Field-mixing of colors not permitted.
1. Formulate blend as required to produce color indicated.
  2. Pigments shall not exceed 10 percent of portland cement by weight.
  3. Pigments shall not exceed 5 percent of mortar cement by weight.
  4. Products:
    - a. Colored Portland Cement-Lime Mix:
      - 1) Capital Materials Corporation; Riverton Portland Cement Lime Custom Color.
      - 2) Holcim (US) Inc.; Rainbow Mortamix Custom Color Cement/Lime.
      - 3) Lafarge North America Inc.; Eaglebond.
      - 4) Lehigh Cement Company; Lehigh Custom Color Portland/Lime Cement.
    - b. Colored Mortar Cement:
      - 1) CEMEX
      - 2) Giant Cement Company
      - 3) Holcim
      - 4) Lafarge North America Inc.; Magnolia Superbond Mortar Cement.
      - 5) SGS Solomon Colors, Inc.
    - c. Basis of Design Color: SGS Solomon Colors, Inc.; "Plain Masonry Cement"
      - 1) Note: "Plain Masonry Cement" listed above is the name of a colored mortar and not a standard gray mortar.
- I. Aggregate for Mortar: ASTM C 144.
1. Produce required mortar color by using colored aggregates and natural color or white cement as necessary to produce required mortar color.
  2. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone, from same source using same run or vein for entire operation.
  3. For joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.
  4. Natural Color.
  5. White-Mortar Aggregates: Natural white sand or crushed white stone.
- J. Aggregate for Grout: ASTM C 404.
- K. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C 494/C 494M, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.
1. Products:
    - a. Addiment Incorporated; Mortar Kick.
    - b. Euclid Chemical Company (The); Accelguard 80.
    - c. Grace Construction Products, a unit of W. R. Grace & Co. - Conn.; Morset.
    - d. Sonneborn, Div. of ChemRex; Trimix-NCA.

- L. Water-Repellent Admixture for Exterior, Exposed Mortar: Liquid water-repellent mortar admixture intended for use with brick and stone masonry units.
  - 1. Products:
    - a. ACM Chemistries
    - b. Master Builders, Inc./BASF,
    - c. W.R. Grace & Co.
- M. Water: Potable.

## 2.5 REINFORCEMENT

- A. Uncoated Steel Reinforcing Bars: ASTM A 615/A 615M or ASTM A 996/A 996M, Grade 60.
- B. Masonry Joint Reinforcement, General: ASTM A 951.
  - 1. Exterior Walls: Hot-dip galvanized, carbon steel.
  - 2. Wire Size for Side Rods: W1.7 or 0.148-inch diameter.
  - 3. Wire Size for Cross Rods: W1.7 or 0.148-inch diameter.
  - 4. Wire Size for Veneer Ties: W1.7 or 0.148-inch diameter.
  - 5. Spacing of Cross Rods, Tabs, and Cross Ties: Not more than 16 inches o.c.
  - 6. Provide in lengths of not less than 10 feet, with prefabricated corner and tee units.
- C. Masonry Joint Reinforcement for Single-Wythe Masonry: Either ladder or truss type with single pair of side rods.
- D. Masonry Joint Reinforcement for Multiwythe Masonry:
  - 1. Adjustable (two-piece) type, either ladder or truss design, with one side rod at each face shell of backing wythe and with separate ties that extend into facing wythe. Ties have two hooks that engage eyes or slots in reinforcement and resist movement perpendicular to wall. Ties extend at least halfway through facing wythe but with at least 5/8-inch cover on outside face.
  - 2. Continuous Horizontal Masonry Joint Reinforcement for Veneers: Single 0.188-inch diameter, hot-dip galvanized, carbon-steel continuous wire.
    - a. Provide at all bed joints in soldier and stacked coursing.

## 2.6 TIES AND ANCHORS

- A. General: Provide 2-piece assemblies allowing vertical or horizontal differential movement between veneer and wall framing parallel to plane of wall but resisting tension and compression forces perpendicular to it, for attachment over sheathing to metal studs, and with the following structural performance characteristics:
  - 1. Structural Performance Characteristics: Capable of withstanding a 100-lbf load in either tension or compression without developing play or deforming more than 0.05 inch.
- B. Materials: Provide ties and anchors specified in subsequent paragraphs that are made from materials that comply with subparagraphs below, unless otherwise indicated.
  - 1. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A 82; with ASTM A 153/A 153M, Class B-2 coating.
  - 2. Galvanized Steel Sheet: ASTM A 653/A 653M, Commercial Steel, G60 zinc coating.

3. Steel Sheet, Galvanized after Fabrication: ASTM A 1008/A 1008M, Commercial Steel, hot-dip galvanized after fabrication to comply with ASTM A 153/A 153M.
  4. Stainless-Steel Sheet: ASTM A 666, Type 304.
  5. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- C. Wire Ties, General: Unless otherwise indicated, size wire ties to extend at least halfway through veneer but with at least 5/8-inch cover on outside face. Outer ends of wires are bent 90 degrees and extend 2 inches parallel to face of veneer.
- D. Adjustable Masonry Veneer Anchors for Connecting to Cold-Formed Metal Framing: Unless otherwise indicated, provide, at Contractor's option, one of the following types of anchors:
1. Screw-Attached Masonry Veneer Anchor: Units consisting of a wire tie and a metal anchor section.
    - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following.
      - 1) Hohmann & Barnard, Inc.
      - 2) Dayton Superior Corporation; Dur-O-Wal Division
      - 3) Heckmann Building Products Inc.
      - 4) Wire-Bond
    - b. Contractor's Option: Provide one of the following types.
      - 1) Anchor Section: Sheet metal plate, 1-1/4 inches wide by 6 inches long, with screw holes top and bottom and with raised rib-stiffened strap, 5/8 inch wide by 3-5/8 inches long, stamped into center to provide a slot between strap and plate for inserting wire tie. Fabricate sheet metal anchor section from 1.05 inch thick steel sheet, galvanized after fabrication. Provide self-healing strip under each clip. Basis of Design: Hohmann & Barnard, Inc.; Model # X-Seal.
      - 2) Anchor Section: Corrosion-resistant, self-drilling, eye-screw designed to receive wire tie. Eye-screw has spacer that seats directly against framing and is same thickness as sheathing and has gasketed, washer head that covers hole in sheathing. Basis of Design: Heckmann Building Products Inc.; Pos-I-Tie.
    - c. Wire Ties: Triangular shaped wire ties fabricated from 3/16-inch diameter, hot-dip galvanized steel wire.
- E. Individual Wire Ties: Rectangular units with closed ends and not less than 4 inches wide.
1. Where wythes are of different materials, use adjustable ties with pintle-and-eye connections having a maximum adjustment of 1-1/4 inches.
  2. Wire: Fabricate from 3/16-inch diameter, hot-dip galvanized steel wire.
- F. Adjustable Anchors for Connecting to Structure: Provide anchors that allow vertical or horizontal adjustment but resist tension and compression forces perpendicular to plane of wall.
1. Anchor Section for Welding to Steel Frame: Crimped 1/4-inch- diameter, hot-dip galvanized steel wire.
  2. Tie Section for Steel Frame: Triangular-shaped wire tie, sized to extend within 1 inch of masonry face, made from 0.188-inch diameter, hot-dip galvanized steel wire.

- G. Partition Top Anchors: 0.097-inch thick metal plate with 3/8-inch diameter metal rod 6 inches long welded to plate and with closed-end plastic tube fitted over rod that allows rod to move in and out of tube. Fabricate from steel, hot-dip galvanized after fabrication.

## 2.7 MISCELLANEOUS ANCHORS

- A. Unit Type Inserts in Concrete: Cast-iron or malleable-iron wedge-type inserts.
- B. Dovetail Slots in Concrete: Furnish dovetail slots with filler strips, of slot size indicated, fabricated from 0.034-inch, galvanized steel sheet.
- C. Anchor Bolts: Headed or L-shaped steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers; hot-dip galvanized to comply with ASTM A 153/A 153M, Class C; of dimensions indicated.
- D. Postinstalled Anchors: Provide chemical anchors, with capability to sustain, without failure, a load equal to six times the load imposed when installed in solid or grouted unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.
  - 1. Corrosion Protection: Stainless-steel components complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2 for bolts and nuts; ASTM A 666 or ASTM A 276, Type 304 or 316, for anchors.
  - 2. Anchors must be 2009 IBC Compliant Anchors and meet the ICC-ESR Seismic Design Category A-F requirements.
  - 3. Anchor installers must be a certified Adhesive Anchor Installer through the ACI-CRSI Adhesive Anchor Installation Certification Program.

## 2.8 EMBEDDED FLASHING MATERIALS

- A. General: Provide prefabricated corners and end dams of same material and thickness as primary material and from the same flashing manufacturer.
- B. Provide minimum 10-inch wide strips of same material under joints.
- C. Flexible Flashing: For flashing not exposed to the exterior, use the following, unless otherwise indicated:
  - 1. Copper-Laminated Flashing: 5-oz./sq. ft. copper sheet bonded between 2 layers of glass-fiber cloth. Use only where flashing is fully concealed in masonry.
    - a. Products:
      - 1) Advanced Building Products Inc.; Copper Fabric Flashing.
      - 2) AFCO Products Inc.; Copper Fabric.
      - 3) Hohmann & Barnard, Inc.; H & B C-Fab Flashing.
      - 4) Phoenix Building Products; Type FCC-Fabric Covered Copper.
      - 5) Polyrite Manufacturing Corp.; Copper Fabric Flashing.
      - 6) Sandell Manufacturing Co., Inc.; Copper Fabric Flashing.
      - 7) York Manufacturing, Inc.; York Copper Fabric Flashing.
- D. Partially Exposed Flashing: Stainless steel, minimum 0.016 inch thick.

- E. Adhesives, Primers, and Seam Tapes for Flashings: Flashing manufacturer's standard products or products recommended by flashing manufacturer for bonding flashing sheets to each other and to substrates.
- F. Termination Bar: Stainless steel.

## 2.9 MISCELLANEOUS MASONRY ACCESSORIES

- A. Pre-Compressed Joint Filler for CMU: Water-based, 100% acrylic, impregnated expanding foam sealant with internal laminations of closed cell foam.
- B. Compressible Filler for Brick Veneer: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene or urethane.
- C. Preformed Control-Joint Gaskets: Material as indicated below, designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.
  - 1. Styrene-Butadiene-Rubber Compound: ASTM D 2000, Designation M2AA-805.
  - 2. PVC: ASTM D 2287, Type PVC-65406.
- D. Bond-Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).
- E. Weep/Vent Products: Use the following, unless otherwise indicated:
  - 1. Cellular Plastic Weep/Vent: One-piece, flexible extrusion made from UV-resistant polypropylene copolymer, full height and width of head joint and depth 1/8 inch less than depth of outer wythe, in color selected from manufacturer's standard.
    - a. Advanced Building Products Inc.; Mortar Maze weep vent.
    - b. Dayton Superior Corporation, Dur-O-Wal Division; Cell Vents.
    - c. Heckmann Building Products Inc.; No. 85 Cell Vent.
    - d. Hohmann & Barnard, Inc.; Quadro-Vent.
    - e. Wire-Bond; Cell Vent.

## 2.10 MASONRY CLEANERS

- A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.
  - 1. Manufacturers:
    - a. Diedrich Technologies, Inc.
    - b. EaCo Chem, Inc. (Basis of Design: Product # NMD80)
    - c. ProSoCo, Inc.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.
  - 1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of work.
  - 2. Verify that foundations are within tolerances specified.
  - 3. Verify that reinforcing dowels are properly placed.
- B. Before installation, examine rough-in and built-in construction for piping systems to verify actual locations of piping connections.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION, GENERAL

- A. Thickness: Build cavity and other masonry construction to full thickness shown. Build single-wythe walls to actual widths of masonry units, using units of widths indicated.
- B. Build chases and recesses to accommodate items specified in this and other Sections.
- C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to opening.
- D. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.
- E. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures.
  - 1. Mix units from several pallets or cubes as they are placed.
- F. Wetting of Brick: Wet brick before laying if initial rate of absorption exceeds 30 g/30 sq. in. per minute when tested per ASTM C 67. Allow units to absorb water so they are damp but not wet at time of laying.
- G. Comply with construction tolerances in ACI 530.1/ASCE 6/TMS 602 and with the following:
  - 1. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.
  - 2. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet, or 1/2 inch maximum.
  - 3. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.
  - 4. For exposed bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch. Do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch.

5. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch. Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch.
6. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch except due to warpage of masonry units within tolerances specified for warpage of units.

### 3.3 LAYING MASONRY WALLS

- A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.
- B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond; do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.
- C. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 4-inches. Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.
- D. Stopping and Resuming Work: Stop work by racking back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.
- E. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.
- F. Fill space between steel frames and masonry solidly with mortar, unless otherwise indicated.
- G. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below and rod mortar or grout into core.
- H. Fill cores in hollow concrete masonry units with grout 24 inches under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated.
- I. Build non-load-bearing interior partitions full height of story to underside of solid floor or roof structure above, unless otherwise indicated.
  1. Install compressible filler in joint between top of partition and underside of structure above.
  2. Fasten partition top anchors to structure above and build into top of partition. Grout cells of CMUs solidly around plastic tubes of anchors and push tubes down into grout to provide 1/2-inch clearance between end of anchor rod and end of tube. Space anchors 48 inches o.c., unless otherwise indicated.
  3. At fire-rated partitions, treat joint between top of partition and underside of structure above to comply with Division 7 Section 078446 "Fire-Resistive Joint Systems."

### 3.4 MORTAR BEDDING AND JOINTING

- A. General: Prepare mortar in accordance with current Portland Cement Association publications.
- B. Prepare fresh mortar at the rate it will be used, in order to maintain consistent color and workability. Do not use mortar that has stiffened because of hydration. Discard when not used within the time

recommended by mortar manufacturer or PCA publications, whichever is shorter. Retemper mortar carefully to avoid color changes, no more than twice per batch.

- C. Measure mortar materials using cubic foot measuring box or other approved container of known volume, of size appropriate for operation. Use a consistent ratio of water to mortar materials, within the range recommended by the mortar manufacturer's written instructions.
- D. Lay hollow brick and concrete masonry units as follows:
  - 1. With full head and bed joints.
  - 2. With webs fully bedded in mortar in all courses of piers, columns, and pilasters.
  - 3. With webs fully bedded in mortar in grouted masonry, including starting course on footings.
  - 4. With entire units, including areas under cells, fully bedded in mortar at starting course on footings where cells are not grouted.
- E. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
- F. Set trim units in full bed of mortar with full vertical joints. Fill dowel, anchor, and similar holes.
  - 1. Clean soiled surfaces with fiber brush and soap powder and rinse thoroughly with clear water.
  - 2. Allow cleaned surfaces to dry before setting.
  - 3. Wet joint surfaces thoroughly before applying mortar.
- G. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness, unless otherwise indicated.

### 3.5 MASONRY JOINT REINFORCEMENT

- A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches.
  - 1. Space reinforcement not more than 16 inches o.c.
  - 2. Space reinforcement not more than 8 inches o.c. in foundation walls and parapet walls.
  - 3. Provide reinforcement not more than 8 inches above and below wall openings and extending 12 inches beyond openings.
    - a. Reinforcement above is in addition to continuous reinforcement.
- B. Interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.
- C. Provide continuous wire reinforcement in soldier and stacked courses.
- D. Provide continuity at wall intersections by using prefabricated T-shaped units.
- E. Provide continuity at corners by using prefabricated L-shaped units.
- F. Cut and bend reinforcing units as directed by manufacturer for continuity at corners, returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

### 3.6 ANCHORING MASONRY VENEERS

- A. Anchor masonry veneers to wall framing and concrete masonry backup with masonry-veneer anchors to comply with the following requirements:
  - 1. Wall Framing Backup: Fasten screw-attached anchors through insulation and sheathing to wall framing with metal fasteners of type indicated. Use two fasteners unless anchor design only uses one fastener. Locate anchor sections to allow maximum vertical differential movement of ties up and down.
  - 2. Concrete Masonry Unit Backup: Embed tie sections in masonry joints. Provide air space as indicated on Drawings.
  - 3. Space anchors as indicated, but not more than 16 inches o.c. vertically and 16 inches o.c. horizontally. Install additional anchors within 12 inches of openings and at intervals, not exceeding 36 inches, around perimeter.

### 3.7 CONTROL AND EXPANSION JOINTS

- A. General: Install control and expansion joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.
- B. Form control joints in concrete masonry using the following method:
  - 1. Install preformed control-joint gaskets designed to fit standard sash block.
  - 2. At cavity side of masonry walls, install pre-compressed joint filler in CMU control joints during CMU installation.
- C. Form expansion joints in brick made from clay or shale as follows:
  - 1. Build in compressible joint fillers where indicated.
  - 2. Form open joint full depth of brick wythe and of width indicated, but not less than 3/8 inch for installation of sealant and backer rod specified in Division 7 Section 079200 "Joint Sealants."
- D. Provide horizontal, pressure-relieving joints by either leaving an air space or inserting a compressible filler of width required for installing sealant and backer rod specified in Division 7 Section 079200 "Joint Sealants," but not less than 3/8 inch.
  - 1. Locate horizontal, pressure-relieving joints beneath shelf angles supporting masonry.

### 3.8 FLASHING, WEEP HOLES, CAVITY DRAINAGE, AND VENTS

- A. General: Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges, other obstructions to downward flow of water in wall, and where indicated.
- B. Install flashing as follows, unless otherwise indicated:
  - 1. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Where flashing is within mortar joint, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape as recommended by flashing manufacturer.
  - 2. At multiwythe masonry walls, including cavity walls, extend flashing through outer wythe, turned up a minimum of 8 inches, and 1-1/2 inches into the inner wythe.

3. At lintels and shelf angles, extend flashing a minimum of 6 inches into masonry at each end. At heads and sills, extend flashing 6 inches at ends and turn up not less than 2 inches to form end dams.
  4. Cut flexible flashing off flush with face of wall after masonry wall construction is completed.
- C. Install reglets and nailers for flashing and other related construction where they are shown to be built into masonry.
- D. Install weep holes in head joints in exterior wythes of first course of masonry immediately above embedded flashing and as follows:
1. Use specified weep/vent products to form weep holes.
  2. Space weep holes 24 inches o.c., unless otherwise indicated.
- E. Place cavity drainage material in cavities to comply with configuration requirements for cavity drainage material in Part 2 "Miscellaneous Masonry Accessories" Article.

### 3.9 REINFORCED UNIT MASONRY INSTALLATION

- A. Temporary Formwork and Shores: Construct formwork and shores as needed to support reinforced masonry elements during construction.
1. Construct formwork to provide shape, line, and dimensions of completed masonry as indicated. Make forms sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
  2. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other temporary loads that may be placed on them during construction.
- B. Placing Reinforcement: Comply with requirements in ACI 530.1/ASCE 6/TMS 602.
- C. Grouting: Do not place grout until entire height of masonry to be grouted has attained enough strength to resist grout pressure.
1. Comply with requirements in ACI 530.1/ASCE 6/TMS 602 for cleanouts and for grout placement, including minimum grout space and maximum pour height.
  2. Limit height of vertical grout pours to not more than 60 inches.

### 3.10 FIELD QUALITY CONTROL

- A. Inspectors: Engage qualified independent inspectors to perform inspections and prepare reports. Allow inspectors access to scaffolding and work areas, as needed to perform inspections.
1. Place grout only after inspectors have verified compliance of grout spaces and grades, sizes, and locations of reinforcement.
- B. Testing Agency: Engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports:
1. Retesting of materials failing to comply with specified requirements shall be done at Contractor's expense.

- C. Water Testing: Upon request of the Architect, and as often as deemed appropriate by the Contractor, the cavity drainage system shall be tested by pouring a 5-gallon bucket of water into the masonry cavity, or use a hose bib, to verify system performance.

### 3.11 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.
- B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.
- C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
  - 1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
  - 2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
  - 3. Protect adjacent stone and nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
  - 4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
  - 5. Clean brick by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20 or low-pressure spray method, using a proprietary acidic cleaner applied according to manufacturer's written instructions.
  - 6. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A applicable to type of stain on exposed surfaces.

### 3.12 MASONRY WASTE DISPOSAL

- A. Masonry Waste: Remove masonry waste and legally dispose of off Owner's property.
  - 1. Comply with Division 01 Section 017419 "Construction Waste Management and Disposal" for recycling and disposal requirements.

END OF SECTION 04200

SECTION 06100  
EXTERIOR ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
  - 1. Elevated decks including wood decking, stairs, railings and support framing.

1.3 DEFINITIONS

- A. Boards: Lumber of less than 2 inches nominal in thickness and 2 inches nominal or greater width.
- B. Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.
- C. Timber: Lumber of 5 inches nominal or greater in least dimension.
- D. Lumber grading agencies, and the abbreviations used to reference them, include the following:
  - 1. SPIB: The Southern Pine Inspection Bureau.

1.4 ACTION SUBMITTALS

- A. Product Data: For preservative-treated wood products, post installed anchors, miscellaneous metals, and metal framing anchors.
  - 1. For preservative-treated wood products, include chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.
  - 2. For metal framing anchors, include installation instructions.

1.5 INFORMATIONAL SUBMITTALS

- A. Material Certificates:

1. For lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by ALSC's Board of Review.
  2. For preservative-treated wood products. Indicate type of preservative used and net amount of preservative retained. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
- B. Certificates of Inspection: Issued by lumber grading agency for exposed wood products not marked with grade stamp.
- C. Evaluation Reports: For the following:
1. Preservative-treated wood products.
  2. Expansion anchors.
  3. Metal framing anchors.
  4. Decking fasteners.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store materials under cover and protected from weather and contact with damp or wet surfaces. Stack lumber flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

## PART 2 - PRODUCTS

### 2.1 LUMBER, GENERAL

- A. Lumber: Comply with DOC PS 20 and with applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by ALSC's Board of Review. Provide lumber graded by an agency certified by ALSC's Board of Review to inspect and grade lumber under the rules indicated.
1. Factory mark each item with grade stamp of grading agency.
  2. For items that are exposed to view in the completed Work, mark grade stamp on end or back of each piece or omit grade stamp and provide certificates of grade compliance issued by grading agency.
  3. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry wood products.
  4. Provide dressed lumber, S4S, unless otherwise indicated.

- B. Certified Wood: Wood products shall be produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship."

## 2.2 DIMENSION LUMBER

- A. Maximum Moisture Content: 19 percent.
- B. Exposed Lumber: Provide material hand selected for freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot holes, shake, splits, torn grain, and wane.
- C. Deck Framing: No. 2 grade and the following species:
  - 1. Southern pine; SPIB.
- D. Dimension Lumber Posts: No. 2 grade and the following species:
  - 1. Douglas fir-larch, Douglas fir-larch (North), or Douglas fir-south; NLGA, WCLIB, or WWPA.
  - 2. Mixed southern pine; SPIB.
- E. Dimension Lumber Decking and Stair Treads: No. 2 grade and the following species:
  - 1. Douglas fir-larch, Douglas fir-larch (North), or Douglas fir-south; NLGA, WCLIB, or WWPA.
  - 2. Mixed southern pine; SPIB.

## 2.3 BOARDS

- A. Maximum Moisture Content: 19 percent.
- B. Provide boards hand selected for freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot holes, shake, splits, torn grain, and wane.
- C. Board Decking and Stair Treads: 2-inch-thick radius-edged decking of the following species and grades:
  - 1. Southern pine, No. 2, SPIB.

## 2.4 TIMBER

- A. Maximum Moisture Content: 19 percent.
- B. Dressing: Provide dressed timber (S4S) unless otherwise indicated.
- C. Timber Posts: Southern pine; No. 2, SPIB.
- D. Timber Splitcaps: Southern pine; No. 2 Dense, SPIB.

- E. Timber Cross Braces: Southern pine; Marine No. 1 / No. 2, SPIB

## 2.5 PRESERVATIVE TREATMENT

- A. Pressure treat boards and dimension lumber with waterborne preservative according to AWPA C2.
- B. Pressure treat timber with waterborne preservative according to AWPA C15 requirements for "sawn building poles and posts as structural members."
  - 1. Treatment with CCA shall include post-treatment fixation process.
- C. Preservative Chemicals: Acceptable to authorities having jurisdiction.
- D. Use process that includes water-repellent treatment.
- E. After treatment, redry boards, dimension lumber, and timber to 19 percent maximum moisture content.
- F. Mark treated wood with treatment quality mark of an inspection agency approved by ALSC's Board of Review.
- G. Application: Treat all exterior rough carpentry unless otherwise indicated.

## 2.6 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture. Provide nails or screws, in sufficient length, to penetrate not less than 1-1/2 inches into wood substrate.
  - 1. Use fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M unless otherwise indicated.
  - 2. For decking to stringers/joists fasteners, use stainless-steel fasteners.
- B. Nails: ASTM F 1667.
- C. Wood Screws: ASME B18.6.1.
- D. Lag Screws: ASME B18.2.1.
- E. Carbon-Steel Bolts: ASTM A 325 with ASTM A 563 heavy hex nuts and, where indicated, flat washers all hot-dip zinc coated.
- F. Postinstalled Anchors: Stainless-steel, chemical or torque-controlled expansion anchors with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry assemblies and equal to four times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a

qualified independent testing and inspecting agency. All postinstalled anchors must be IBC 2012 code compliant in cracked concrete for their intended use.

1. Stainless-steel bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2.

## 2.7 METAL FRAMING ANCHORS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- B. Basis-of-Design Products: Subject to compliance with requirements, provide products indicated on Drawings or comparable products by one of the following:
  1. Cleveland Steel Specialty Co.
  2. Harlen Metal Products, Inc.
  3. KC Metals Products, Inc.
  4. Simpson Strong-Tie Co., Inc.
  5. Southeastern Metals Manufacturing Co., Inc.
  6. USP Structural Connectors.
- C. Allowable Design Loads: Provide products with allowable design loads, as published by manufacturer, that meet or exceed those indicated on Drawings. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.
- D. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G90 coating designation.
- E. Stainless-Steel Sheet: ASTM A 666, Type 304.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Clean substrates of projections and substances detrimental to application.

### 3.3 INSTALLATION, GENERAL

- A. Set exterior rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit exterior rough carpentry to other construction; scribe and cope as needed for accurate fit.
- B. Framing Standard: Comply with AF&PA's "Details for Conventional Wood Frame Construction" unless otherwise indicated.
- C. Install wood decking and stair treads with crown up (bark side down).
- D. Install metal framing anchors to comply with manufacturer's written instructions.
- E. Do not splice structural members between supports unless otherwise indicated.
- F. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
- G. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- H. Comply with AWWA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
  - 1. Use copper naphthenate for items not continuously protected from liquid water.
- I. Securely attach exterior rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
  - 1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
- J. Use common wire nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view. Make tight connections between members. Install fasteners without splitting wood; do not countersink nail heads unless otherwise indicated.
- K. For exposed work, arrange fasteners in straight rows parallel with edges of members, with fasteners evenly spaced, and with adjacent rows staggered.

### 3.4 ELEVATED DECK JOIST FRAMING INSTALLATION

- A. General: Install joists with crown edge up and support ends of each member with not less than 1-1/2 inches of bearing on wood or metal. Attach floor joists where framed into wood supporting members by using wood ledgers as indicated or, if not indicated, by using metal joist hangers. Do not notch joists.

- B. Frame openings with headers and trimmers supported by metal joist hangers; double headers and trimmers where span of header exceeds 48 inches.
- C. Lap members framing from opposite sides of beams or girders not less than 12 inches and securely tie opposing members together. Provide solid blocking of 2-inch nominal (38-mm actual) thickness by depth of joist over supports.

### 3.5 STAIR INSTALLATION

- A. Provide stair framing members of size, space, and configuration indicated or, if not indicated, to comply with the following requirements:
  - 1. Stringer Size: 2 by 12 inches nominal, minimum.
  - 2. Notching: Notch stringers to receive treads, risers, and supports; leave at least 3-1/2 inches of effective depth.
  - 3. Stringer Spacing: At least three stringers for each 36-inch clear width of stair.
- B. Provide stair framing with no more than 3/16-inch variation between adjacent treads and risers and no more than 3/8-inch variation between largest and smallest treads and risers within each flight.
- C. Treads and Risers: Secure by screwing to carriages. Countersink fastener heads, fill flush, and sand filler. Extend treads over carriages and finish with bullnose edge.

END OF SECTION 06100

SECTION 071600  
CEMENTITIONS WATERPROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Waterproofing below grade exterior surface of basement, retaining walls, and foundations as scheduled.
2. Waterproofing of water cisterns as indicated.

B. Related Sections:

1. Section 03 30 00 – Cast-in-Place Concrete.
2. Section 04 20 00 – Unit Masonry.

1.2 SYSTEM DESCRIPTION

A. Portland-cement based coating for concrete and masonry that resists both positive and negative hydrostatic pressure.

B. Performance Requirements: Provide patching material complying with the following requirements:

1. Service temperatures: Immersion, up to 140 degrees F (60 degrees C); cleaning water, up to 200 degrees F (93 degrees C); dry air, up to 220 degrees F (104 degrees C).
2. VOC: 0 lbs/gal (0 g/L) less water and exempt solvents.
3. Initial Set, minutes at 70 degree F (21 degree C), 50 percent relative humidity: 10 minutes per Lab Method.
4. Final Set, minutes at 70 degree F (21 degree C), 50 percent relative humidity: 90 minutes per Lab Method.
5. Density (cured): 129 pounds per foot (2,080 kg/m) per Lab Method.
6. Positive resistance to hydrostatic pressure, hrs, at 200 psi (1.4 MPa), 461 head feet, air cured at 70 degree F (21 degree C) 50 percent relative humidity: 752 (No leakage, no softening) per CRD C 48, modified.
7. Negative resistance to hydrostatic pressure, hours, at 200 psi (1.4 MPa), 461 head feet, air cured at 70 degree F (21 degree C) 50 percent relative humidity: 664 (Limited dampness) per CRD C 48, modified.
8. Potable water (direct contact): Suitable approved per BS6920 (British standard), NSF Standard 61.
9. Water absorption, boiling water submersion at 24 hour: 3.6 percent per ASTM C 67 (Section 7.3).
10. Compressive strength, ASTM C 109:
  - a. 7 days: 4,200 psi (29 MPa)
  - b. 28 days: 6,030 psi (42 MPa)

11. Flexural strength, ASTM C 348:
  - a. 7 days: 360 psi (2.5 MPa)
  - b. 28 days: 1,027 psi (7 MPa)
12. Tensile strength, ASTM C 190:
  - a. 7 days: 250 psi (2 MPa).
  - b. 28 days: 440 psi (3 MPa).
13. Modulus of elasticity, ASTM C 469, 28 days:  $2.72 \times 10$  to the 6th psi ( $1.87 \times 10$  to the 4th MPa).
14. Artificial weathering, hrs:
  - a. Xenon Arc: 5,000 = No failure per ASTM G 26.
  - b. Carbon Arc: 500 = No failure per ASTM G 23.
15. Adhesion strength, Test by tensile bond: 418 psi (2.9 MPa).
16. Artificial weathering, Atlas Type DMC weatherometer: No cracking, loss of adhesion, checking or other defect.
17. Freeze/thaw resistance, 200 cycles: No change per ASTM C 666 (Procedure B).
18. Salt spray resistance, 300 hours: No defect per ASTM B 117.
19. Carbon Dioxide (CO<sub>2</sub>), 1/16 inch (1.6 mm) per Lab Method Diffusion. Equivalent to 3/4 inch (19 mm) new concrete.
20. Permeance:
  - a. Perms: 12 (0.10698) per ASTM E 96
  - b. Metric permeability  $18 \times 10$  to the 3rd resistance (water-vapor transmission) per Swedish standard SS-02-15-82.
21. Wind-driven rain, hrs: 8 = excellent per Fed. Spec. TT-P-0035 (Para 4.4.7).
22. Coefficient of thermal expansion in/in/degree F (mm/mm/degree C), at 28 days:  $6.99 \times 10$  to the minus 6th ( $5 \times 10$  to the minus 7th) per ASTM C 531.
23. Impact strength (Gardener impact tester): No chipping per Fed. Spec. TT-P-0035 (Cement paints para. 3.4.8)
24. Hardness, (Barber Coleman Impressor) Requirement min = 30, max = 60 (para 4.4.9) Fed. Spec. TT-P-0035:
  - a. 7 days: 35.
  - b. 14 days: 47.
  - c. 21 days: 52.
25. Abrasion resistance 3,000 L sand: Passed per Fed. Spec. TT-P-141B.
26. Reflectance ASTM D 2244 using Hunterlab D-25 meter:
  - a. Gray Thoroseal: 64.2.
  - b. White Thoroseal: 88.1.
27. Fungus resistance at 21 days: No growth; meets all requirements of Fed. Spec. TT-P-29B.
28. Surface burning characteristics per ASTM E 84:
  - a. Flame Spread: 0.
  - b. Smoke developed: 5.

29. Fire Propagation Flame spread: Index = 1.5, Class 1 per BS476: Part 6:1981, BS476: Part 7:1971.

### 1.3 SUBMITTALS

- A. Comply with Section 01340.
- B. Product Data: Submit manufacturer's technical bulletins and MSDS on each product.

### 1.4 QUALITY ASSURANCE

- A. Qualifications:
  1. Manufacturer Qualifications: Company with minimum 15 years of experience in manufacturing of specified products and systems.
  2. Manufacturer Qualifications: Company shall be ISO 9001:2000 Certified.
  3. Applicator Qualifications: Company with minimum of 5 years experience in application of specified products and systems on projects of similar size and scope, and is acceptable to product manufacturer.
    - a. Successful completion of a minimum of 5 projects of similar size and complexity to specified Work.
- B. Field Sample:
  1. Install at Project site or pre-selected area of building an area for field sample, as directed by Architect.
  2. Apply material in strict accordance with manufacturer's written application instructions.
  3. Manufacturer's representative or designated representative will review technical aspects; surface preparation, application, and workmanship.
  4. Field sample will be standard for judging workmanship on remainder of Project.
  5. Maintain field sample during construction for workmanship comparison.
  6. Do not alter, move, or destroy field sample until Work is completed and approved by Architect.
  7. Obtain Architect's written approval of field sample before start of material application, including approval of aesthetics, color, texture, and appearance.

### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Comply with Section 01620.
- B. Comply with manufacturer's ordering instructions and lead-time requirements to avoid construction delays.
- C. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

- D. Transport and store in unopened containers and keep in clean, dry condition protected from rain, dew, and humidity. If dry onsite storage of bags is unavailable or if Project is located in a very wet, humid climate zone, purchase product in manufacturer's packaged metal pails.
- E. Do not stack bags more than 2 pallets high.
- F. Do not allow Products to freeze.

## 1.6 PROJECT CONDITIONS

- A. Environmental Requirements:
  - 1. Do not apply in rain or when rain is expected within 24 hours. Do not apply above 90 degrees F (32 degrees C) or below 40 degrees F (4 degrees C) or when temperatures are expected to fall below 40 degrees F (4 degrees C) within 24 hours. For hot and cold temperature applications, store materials and water at 50 degrees F (10 degrees C) to 70 degrees F (21 degrees C) before use.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Subject to compliance with requirements, provide products from the following manufacturer:
  - 1. BASF Corporation  
Building Systems  
889 Valley Park Drive  
Shakopee, MN 55379  
Customer Service: 800- 433-9517  
Technical Service: 800-243-6739  
Internet: [www.buildingsystems.basf.com](http://www.buildingsystems.basf.com)
- B. Substitutions: Comply with Section 01340.
- C. Specifications and Drawings are based on manufacturer's proprietary literature from BASF Corporation. Other manufacturers shall comply with minimum levels of material, color selection, and detailing indicated in Specifications or on Drawings. Architect will be sole judge of appropriateness of substitutions.

### 2.2 MATERIALS

- A. Portland-cement based coating for concrete and masonry that resists both positive and negative hydrostatic pressure.
  - 1. Acceptable Product:
    - a. Thoroseal by BASF Corporation, or approved equal.

## 2.3 MIXING

- A. Mix material per manufacturer instructions allowing material to rest 10 minutes before remixing and application.
- B. Color:
  - 1. Standard Gray.

## PART 3 - EXECUTION

### 3.1 SURFACE PREPARATION

- A. Ensure that substrates are sound and free of dust, dirt, laitance, paints, oils, grease, curing compounds, and other contaminants.
- B. Ensure substrate has properly cured. Concrete should obtain 80 percent of design strength. If efflorescence is present, mechanically remove it before proceeding. For extreme cases where this is not adequate, contact Technical Service.
- C. Patch holes and cracks before installation.
- D. Relieve hydrostatic pressure in concrete block with weep holes.
- E. Roughen or brush blast extremely smooth surfaces to ensure good mechanical adhesion.

### 3.2 APPLICATION - GENERAL

- A. Apply coating with manufacturer recommend brush or broom or equivalent stiff fiber brush or by textured spray equipment. Spray, back-brush, or broom applications of first coat to fill voids and achieve uniformity.
- B. Completely dampen substrate with water before starting application. Do not saturate substrate. Keep substrate cool and damp throughout application.
- C. Work first coat thoroughly into substrate to completely fill and cover voids, holes, and nonmoving cracks.
- D. Allow to cure 24 hours, then apply second coat and finish with vertical stroke.
- E. On concrete block or masonry walls, allow 5 to 7 days before applying second coat to eliminate joint read through.
- F. Allow coating to cure 7 to 10 days before immersion in water.

### 3.3 ABOVE GRADE WITH POSITIVE SIDE WATER PRESSURE APPLICATION

- A. Typical Application:
  - 1. First Coat: 2 pounds per square yard (1.1 kg/sm) = 225 square feet per 50 pound bag (20.9 sm/22.7 kg bag).

2. Second Coat: 1 pounds per square yard (0.54 kg/m<sup>2</sup>) = 450 square feet per 50 pound bag (41.8 sm/22.7 kg bag)
3. Total: 3 pounds per square yard (1.6 kg/sm), cured nominal thickness of 1/16 inch (1.6 mm).

B. Application at Struck Joints:

1. Spray and back-brush base coat of standard coating at 2 pounds per square yard (1.1 kg/sm) and allow it to cure for 5 to 7 days.
2. Spray apply and back trowel topcoat of plaster mix at an application rate of 9 pounds per square yard (4.9 kg/sm).

### 3.4 BELOW GRADE EXTERIOR APPLICATION

A. Typical Application:

1. Apply base coat of foundation coating at 2 pounds per square yard (1.1 kg/sm) and allow to cure for 5 to 7 days.
2. After base coat properly cures, apply topcoat of plaster mix.

### 3.5 WATERPROOFING RESERVOIRS

A. Install standard coating as specified in Application - General instructions.

- B. After standard coating has fully cured, wash down surface with saline solution (salt brine, 1 pound salt per 1 gallon water). Leave saline solution on entire surface for at least 24 hours. Rinse off saline solution completely. If needed, reapply saline solution until final rinse water is completely clean and clear.

### 3.6 WALL/FLOOR COVE DETAILING

- A. Cut out intersection of floor/wall and install waterstop cove seal at wall and floor junction prior to application of base coat.

### 3.7 CLEANING

- A. Clean waterproofing material from tools and equipment with water. Remove cured materials mechanically.
- B. Clean up and properly dispose of debris remaining on Project site related to application.
- C. Remove temporary coverings and protection from adjacent Work areas.

### 3.8 PROTECTION

- A. Protect system from damage during construction.

END OF SECTION

SECTION 07951  
SEALANTS AND CAULKING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work included: Throughout the work, seal and caulk joints where shown on the drawings and elsewhere as required to provide a positive barrier against passage of moisture and passage of air.

1.2 SUBMITTALS

- A. Comply with pertinent provisions of Section 01340.
- B. Submit the following:
  - 1. Materials list of items proposed to be provided under this Section.
  - 2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements;
  - 3. Manufacturer's recommended installation procedures which, when approved by the Architect, will become the basis for accepting or rejecting actual installation procedures used on the work.

1.3 PRODUCT HANDLING

- A. Comply with pertinent provisions of Section 01620.
- B. Do not retain at the job site material which has exceeded the shelf life recommended by its manufacturer.

PART 2 - PRODUCTS

2.1 SEALANTS

- A. Provide the following materials manufactured by Dow Corning or equals indicated below, where indicated or where otherwise required for a complete and proper installation.
  - 1. All surfaces: Dow Corning 790 Silicone Sealant, Equals by, Sonneborn, GE, Pecora, Tremco.
  - 2. Primers as required by the manufacturer.
  - 3. Polyethylene backer rod: Where required to prevent 3 point adhesion.
- B. For other services, provide products especially formulated for the proposed use and approved in advance by the Architect.
- C. Colors:
  - 1. Colors for each sealant installation will be selected by the Architect from standard colors normally available from the approved manufacturer.
  - 2. In concealed installations, use standard gray sealant.

2.2 PRIMERS

- A. Use only those primers which have been tested for durability on the surfaces to be sealed, and are specifically recommended for this installation by the manufacturer of the sealant used.

## 2.3 BACKUP MATERIALS

- A. Use only those backup materials which are specifically recommended for this installation by the manufacturer of the sealant used, which are non-absorbent, and which are non-staining.

## 2.4 MASKING TAPE

- A. For masking around joints, provide an appropriate masking tape which will effectively prevent application of sealant on surfaces not scheduled to receive it, and which is removable without damage to substrate.

## 2.5 OTHER MATERIAL

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

# PART 3 - EXECUTION

## 3.1 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

## 3.2 PREPARATION

- A. Concrete, stone, and cement product surfaces:
  1. Install only on surfaces which are dry, sound, and well brushed, wiped free from dust.
  2. At open joints, remove dust by mechanically blown compressed air if required.
  3. To remove oil and grease, use sandblasting or appropriate solvent with clean white rags only.
  4. Where surfaces have been treated, remove the surface treatment by sandblasting or wire brushing.
  5. Remove laitance and mortar from joint cavities.
- B. Steel surfaces:
  1. Steel surfaces in contact with sealant:
    - a. Sandblast as required to achieve acceptable surface for bond.
    - b. If sandblasting is not practical, or would damage adjacent finish, scrape or wire brush the metal to remove mill scale and rust.
  2. Remove protective coatings on steel by sandblasting or by using a solvent which leaves no residue.
- C. Wood surfaces:
  1. Surfaces shall be clean and dry.
  2. Apply primer as recommended by caulking manufacturer.

### 3.3 INSTALLATION OF BACKUP MATERIAL

- A. When using backup of tube or rod stock, avoid lengthwise stretching of the material. Do not twist or braid hose or rod backup stock.
- B. Installation tool:
  - 1. For installation of backup material, provide a blunt-surfaced tool of wood or plastic, having shoulders designed to ride on the adjacent finished surface and a protrusion of the required dimensions to assure uniform depth of backup material below the sealant. Do not, under any circumstances, use a screwdriver or similar tool for this purpose. Using the approved tool, smoothly and uniformly place the backup material to the depth indicated on the drawings and otherwise required, compressing the backup material 25% to 50% and securing a positive fit.

### 3.4 PRIMING

- A. Use only the primer approved by the Manufacturer for the particular installation, applied in strict accordance with the manufacturer's recommendations.

### 3.5 BOND-BREAKER INSTALLATION

- A. Provide an approved bond-breaker where recommended by the manufacturer of the sealant, and where directed by the Architect, adhering strictly to the manufacturer's installation recommendations.

### 3.6 INSTALLATION OF SEALANTS

- A. Prior to start of installation in each joint, verify the joint type according to details on the Drawings, or as otherwise directed by the Architect, and verify that the required proportion of width of joint to depth of joint has been secured.
- B. Equipment:
  - 1. Apply sealant under pressure with power-actuated hand gun or manually-operated hand gun, or by other appropriate means.
  - 2. Use guns with nozzle of proper size, and providing sufficient pressure to completely fill the joints as designed.
- C. Thoroughly and completely mask joints where the appearance of primer or sealant on adjacent surfaces would be objectionable.
- D. Install the sealant in strict accordance with the manufacturer's recommendations, thoroughly filling joints to the recommended depth.
- E. Tool joints to the profile shown on the drawings, or as otherwise required if such profiles are not shown on the drawings.
- F. Cleaning up:
  - 1. Remove masking tape immediately after joints have been tooled.
  - 2. Clean adjacent surfaces free from sealant as the installation progresses, using solvent or cleaning agent recommended by the manufacturer of the sealant used.
  - 3. Upon completion of the work of this Section, promptly remove from the job site all debris, empty containers, and surplus material derived from this portion of the Work.

END OF SECTION 07951

SECTION 09200  
FIBER REINFORCED PLASTER

PA RT 1 - GENERAL

1.01 SUMMARY

- A. Section Description: Section includes installation of Fiber Reinforced Plaster with Sand base and acrylic finish as an exterior wall cladding.

1.02 SUBMITTALS

- A. General: Submit Samples, Evaluation Reports and Certificates in accordance with Division 1 General Requirements Submittal Section.
1. Samples: Submit samples for approval showing textures and final finish. Submit range of colors for selection by Architect.
  2. Manufacturer's warranty: Submit sample copies of Manufacturer's Warranty indicating Single Source Responsibility.

1.03 QUALITY ASSURANCE

- A. Qualifications:
1. Manufacturer: Shall have marketed plaster products in United States for at least five years.
  2. Applicator: Shall be experienced and competent in installation of plaster-like materials and shall provide evidence of a minimum of 5 years' experience in work similar to that required by this section.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver coating products in original packaging with manufacturer's identification.  
B. Storage: Store in dry location, off the ground, protected from moisture conditions harmful to product performance.

1.05 PROJECT / SITE CONDITIONS

- A. Environmental Conditions: Comply with manufacturer's recommendations of environmental conditions affecting product performance.
1. Installation Ambient Air Temperature: Minimum of 35°F (2°C) and rising, and remain so for 24 hours thereafter.
  2. Substrate Temperature: Do not apply to substrates whose temperature is below 35°F (2°C) or contains frost or ice.
  3. Inclement Weather: Do not apply during inclement weather, unless appropriate protection is employed, which would negate manufacturer's warranty for installation.
  4. Sunlight Exposure: Avoid, when possible, installation of the finish coat in direct sunlight. Schedule finish coat application at times when wall surfaces are in the shade or not exposed to direct sunlight.
  5. Materials shall not be applied if ambient temperature exceeds 120°F (49°C) or falls below 35°F (2°C) within 24 hours of application. Protect plaster from uneven and excessive evaporation during hot, dry weather.
  6. Prior to installation, the wall shall be inspected for surface contamination, or other defects that may adversely affect the performance of the plaster, and shall be free of residual moisture.

## 1.06 WARRANTY

- A. Warranty: Upon request, at completion of installation, provide Surewall Standard Limited Coating Systems Warranty.

## PA RT 2 - PRODUCTS

### 2.01 MANUFACTURERS

- A. Manufacturer: Surewall, Inc., P.O. Box 189, Redan, GA 30074 or approved equal
  - 1. Surewall surface bonding cement.
    - a. Plaster Base: Pre-mixed fiber reinforced plaster, factory blended Portland cement, chopped fiber strands, and proprietary additives.
    - b. Prime Coat: Surewall Pre-Coat Acrylic Primer and Sanded Primer 313, acrylic polymer coating, tinted.
  - 2. Finish: As selected by Architect.
  - 3. Color: As selected by Architect.
- B. Equal Products:
  - 1. Quikwall Surface Bonding Cement by Quikrete, with Primer, and finish coat. Color as selected by Architect.

### 2.02 MATERIALS

- A. Plaster Materials: Fiber-Reinforced Plaster
- B. Acrylic admixture: 100 percent acrylic emulsion additive for Portland cement based products, to enhance curing, adhesion, freeze-thaw resistance and workability.
- C. Primers:
  - 1. Pre-Coat Acrylic Primer: 100% acrylic based coating to prepare surfaces for Surewall finishes.
- D. Finish:
  - 1. Surewall Finish: Factory blended, 100% acrylic polymer based finish, integrally colored. Finish type, texture and color as selected by Architect.

### 2.03 RELATED MATERIALS

- A. General: Related materials shall conform to the requirements of ICBO ES Evaluation Legacy Report No. 4226, and shall conform to this specification.
- B. Substrate Materials:
  - 1. Concrete (poured or precast) and masonry.

## PA RT 3 - EXECUTION

### 3.01 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with manufacturer's instructions for installation.
- B. Substrate Examination: Examine prior to installation as follows:
  - 1. Substrate shall be examined for soundness, and other harmful conditions.
  - 2. Substrate shall be free of dust, dirt, laitance, efflorescence, and other harmful contaminants.
- C. Advise Contractor of discrepancies preventing installation. Do not proceed until unsatisfactory conditions are corrected.
- D. Correction of unsatisfactory conditions of substrates installed by other trades shall be the responsibility of the Contractor.

### 3.02 PREPARATION

- A. Field Mixing: Mix products in accordance with manufacturer's instructions.

### 3.03 INSTALLATION

- A. General: Installation shall conform to this specification and Manufacturer Product Data Sheets.
- B. Install in accordance with manufacturers written instructions.
- C. Coloration shall be uniform and even.
- D. All edges shall be struck clean and true.

End of Section 09200

**SECTION 09310  
PORCELAIN AND GLASS TILE**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

- A. Work included: Furnish and install tile & base where shown on the Drawings, as specified herein, as needed for a complete and proper installation, and which includes the following:
1. Porcelain tile.
  2. Glass tile.

**1.2 QUALITY ASSURANCE**

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section. The installer shall be a company specializing in performing this work and with a minimum of five years' experience.
- B. Provide manufacturer's Master Grade Certificate stating type and location of each tile material in this Section.
- C. Comply with requirements of the American National Standards Institute (ANSI) and the Tile Council of America (TCA), whichever is most stringent.

**1.3 SUBMITTALS**

- A. Comply with pertinent provisions of Section 01340.
- B. Submit the following:
1. Materials list of items proposed to be provided under this Section.
  2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
  3. Samples showing full selection of manufacturers colors and tile products.
  4. Samples of each type, class, and color of tile selected, not less than 12" square, mounted on plywood or hardboard backing, and grouted as specified.
- C. Except when specifically exempted by the Architect, submit Master Grade Certificates for each shipment at the job site.
- D. Submit a layout diagram showing all locations of expansion and stress relief joints as recommended by tile manufacturer and as per industry standards.

- E. Provide for owners use a minimum of 2 percent of each size and color of tile, boxed and labeled.

#### 1.4 PROJECT HANDLING

- A. Deliver and store packaged materials in their original unopened containers with labels intact until time of use. Store and handle materials in a manner to prevent damage or contamination by water, freezing, or foreign matter.
- B. Keep grade seals intact and cartons dry until tile are used.

### PART 2 - PRODUCTS

#### 2.1 GENERAL

- A. All tiles, adhesives, mortars, underlayment membranes, grout, or other products, combinations of materials, and methods of installation shall be rated for exterior use and for use in fully submerged under water conditions as per industry standards, Tile Council of America, and manufacturers recommendations.

#### 2.2 PORCELAIN TILE

- A. Tile shall be high quality, dust-pressed, machine-made, white or off-white body, square or cushion edge, graded in accordance with TCA A137.1-Latest Edition.
  - 1. Field tile shall have two lugs on each edge to assure uniform joint, approximately 0.040".
  - 2. External corners shall be standard round.
  - 3. Internal corners shall be square.
  - 4. 2" X 2" mosaic and solid colors.
  - 5. Colors selected by Architect from premium color lines.
  - 6. Resistance to wear: PEI rating Group IV
  - 7. Resistance to water penetration: Impervious water absorption of 0.5 percent.

#### 2.3 GLASS TILE

- A. Provide glass tile products suitable for use in wet exterior applications and suitable for fully immersed use.
  - 1. 2" X 2" mosaic and solid colors.

#### 2.4 APPROVED MANUFACTURERS

- A. American Olean Tile Co., Landsdale, PA
- B. Mid-State Tile, Lexington, NC
- C. United States Porcelain Tile Co., East Sparta, OH
- D. Florida Tile.
- E. Daltile

## 2.5 WATERPROOFING OF SUBSTRATE

- A. Provide fabric reinforced, fluid applied continuous elastomeric waterproofing membrane on all CMU and concrete surfaces to receive porcelain or glass tile.
- B. Product shall be Laticrete 9235 or approved equal.

## 2.6 BOND COAT

- A. Thin-set epoxy mortar conforming to ANSI A118.3.
- B. Bond coat shall be rated for exterior and fully immersed below water usage.
- C. Bond coat shall be compatible with waterproofing membrane.

## 2.7 GROUT

- A. COLORED COMMERCIAL GROUT
- B. Factory colored epoxy grout mix meeting standards of ANSI 118.3. Color as selected by Architect from manufacturers' standard colors.
- C. Grout shall be rated for exterior and fully immersed below water usage.

## 2.8 EXPANSION JOINT SEALANT

- A. Sealant shall be silicone type. Color shall match tile grout. Provide bond breaker tape.
- B. Sealant shall be rated for exterior and fully submerged below water usage.

## 2.9 OTHER MATERIALS

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

# PART 3 - EXECUTION

## 3.1 EXAMINATION AND PREPARATION

- A. Prior to commencing porcelain tile work, inspect surfaces to receive tile and accessories and notify Architect in writing of defects or conditions that will prevent satisfactory tile installation. Installation work shall not proceed until

satisfactory conditions are provided which include:

1. Substrate Surfaces
  - a. 1/8 inch or less in 10 feet from required plane.
  - b. Clean and free of dirt, grease, or other deleterious material or substances.
2. Arrange tile layout so that no tile less than one half width is used.

### 3.2 INSTALLATION

#### A. Method

1. Install tile by thin set method over masonry or concrete substrate with fabric reinforced fluid applied waterproof membrane underlayment as recommended by the Tile Council of America, and the American National Standard Specifications for Porcelain Tile. Provide tile expansion joints as per TCA around perimeter of floor or as directed on drawings, whichever is most restrictive, but in no case shall the distance between expansion joints exceed 24 feet apart unless approved by the Architect.. Include drawing of expansion joint layout with shop drawing submittal for approval of Architect. Provide bond breaker tape at expansion joints to prevent three point adhesion.
2. Install tile and grout in accordance with applicable ANSI and TCA handbook requirements and recommendations for exterior and submerged under water applications.

#### B. Grouting of Tile

1. Firmly set tile on finish surface before grouting. This requires at least 48 hours.
2. Remove spaces and/or ropes before grouting.
3. Remove adhesive from face-mounted tile before grouting.
4. Using a grout of type and mix as specified, force maximum amount of grout into joints.
5. Clean joints of cushion edge tile to depth of cushion. Fill joints of square edge tile flush with surface.
6. Fill gaps and skips. Do not permit adhesive to show through grouted joints. Finish grout shall be uniform in color, smooth and without voids, pin holes, or low spots, and tile shall be clean.
7. Stop tile 3/8" from wall plates, caulk with butyl caulk between tile and wall plate.

#### C. Curing

1. Damp cure tile installations including Portland cement grouts for 72 hours minimum.

### 3.3 CLEANING

- A. Protect metal surfaces, cast iron, and vitreous items from effects of acid cleaning.
- B. Flush surfaces with clean water before and after cleaning.
- C. Upon completion of placing and grouting, clean the work of this Section in accordance with recommendations of the manufacturers of the materials used.

#### 3.4 PROTECTION

- A. Close traffic to spaces in which tile is being set. Keep closed until tile is firmly set. Protect installed tile with Kraft fiberglass reinforced paper covering during the construction period.
- B. Newly tiled surfaces shall not be walked on nor worked on without using kneeling boards or equivalent protection of tiled surface.

END OF SECTION 09310

SECTION 09750  
ARCHITECTURAL GRANITE

PART 1. GENERAL

1.1 SCOPE

This specification includes fabricated granite components required for the completion of granite work indicated by the contract documents.

1.2 SEALANTS – Section 07951

1.3 DEFINITION OF TERMS

The definition of terms used in these specifications shall be those published by the National Building Granite Quarries Association, Inc.

1.4 SOURCE OF SUPPLY

All granite shall be obtained from quarries having adequate capacity and facilities to meet the specified requirements. Fabrication shall be by a firm equipped to process the material promptly in accordance with specifications. Evidence to this effect shall be provided by the supplier if required by the Design Professional.

1.5 SAMPLES

Sufficient samples of granite shall be submitted to the Design Professional through the General Contractor.

1. Each sample set shall include full range of colors from quarry.
2. Sample set shall show anticipated range of color, natural variations of grain structure, inclusions and any other visual characteristics to be expected in the final installation.
3. Architect shall select three samples from full range of samples. Contractor shall provide samples of each of the three selections showing specified finishes for each of three selections.
4. Approved sample set shall establish the standard by which stonework will be judged.
5. Samples must include full selection of granite provided by North Carolina Granite Corporation, Mount Airy, North Carolina. Samples from other quarries may also be submitted.

## 1.6 SHOP DRAWINGS

- A. The contractor shall submit: copies of required shop drawings to the Design Professional for approval. These drawings shall show all bedding, bonding, jointing and anchoring details, and the dimensions of each piece of granite. No final sizing or finishing shall be done until the shop drawings for that part of the work have been approved. Drawings shall indicate layout of plaques on plaque wall panels including finishes, grooves, end joints corners, and anchors.

## 1.7 DEFECTIVE WORK

Any piece of granite showing manufacturing flaws upon receipt at the storage yard or building site shall be referred to the Design Professional for determination as to whether it shall be rejected, patched or redressed for use.

## 1.8 REFERENCES

ASTM C 97-02: Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone.

ASTM C 119-04: Terminology Relating to Dimension Stone

ASTM C 170-90 (1999): Test Method for Compressive Strength of Dimension Stone

ASTM C 615-03: Specification for Granite Dimension Stone

ASTM C 880-98: Test Method for Flexural Strength of Dimensional Stone

## 1.9 ENGRAVING OF PLAQUES: BID ALTERNATE G-2

- A. Plaques shall be engraved as indicated on the drawings and in the Project Manual. Section 01030 Alternate Bids for description.
- B. Each plaque will include the year, name, and other information regarding the winner as listed in the project manual under “Previous Winners-Big Rock Blue Marlin Tournament” and “Big Rock Lady Angler Winners” and as shown on the drawings.

## PART 2. MATERIALS

### 2.1 GRANITE

- A. Standard:
  - 1. Granite shall comply with ASTM C 615, “Standard Specification for Granite Dimension Stone” for material characteristics, physical requirements, and sampling for selection of granite.
  - 2. All granite shall be of standard architectural grade, free of cracks, seams, or starts, which may impair its structural integrity or function. Color or other visual characteristics indigenous to the particular material and adequately demonstrated in the sampling or mock-up phases will be

accepted provided they do not compromise the structural or durability capabilities of the material. Texture and finish shall be within the range of samples approved by the Architect

B. Selection:

1. Architect shall make final selection of granite from samples provided by the Contractor. Contractor shall base bid upon 013-Dakota Rose granite as provided by NC Granite Corp., Mount Airy, NC. The contract amount will be adjusted if a different selection is made to reflect the actual difference in cost, if any.

C. Applications:

1. Plaque wall facing
  - a. Polish and thermal finish as indicated on drawings.
  - b. Thickness, as indicated on drawings
2. Wall facing under seat
  - a. Thermal finish
  - b. Thickness as indicated on drawings.
3. Seat
  - a. Honed finish
  - b. Thickness as indicated on drawings.
4. Wall cap
  - a. Honed finish
  - b. Thickness as indicated on drawings.
5. Spillway
  - a. Honed finish
  - b. Size and thickness as indicated on drawings.

D. Fabrication

1. General Requirements
  - a. Mouldings, washes and drips shall be constant in profile throughout their length, in strict conformity with details shown on approved shop drawings.
  - b. Dress joints straight and at 90 degree angle to face. Shape beds to fit supports.
  - c. Finish exposed faces and edges of stone, except sawed reveals, to comply with requirements indicated for finish and to match final samples and mockups.
  - d. Joint Width: Cut stone to produce uniform joints 3/8 inch or as shown on Drawings.
  - e. Provide chases, reveals, reglets, openings, and similar features as required to accommodate adjacent work.

- f. Grade and mark stone to achieve uniform appearance when installed. Inspect finished stone units at fabrication plant. Replace defective units.

2. Dimensional Tolerance

Panel Thickness 3/4" to 1 5/8"	
(20 to 41 mm)	± 1/8"
Panel Thickness Greater than 1 5/8"	
(41 mm)	±1/4"
Panel Face Dimension	±1/16"
Face variation from rectangular	±1/16"
(Maximum out of Square) (non-Cumulative)	
Heads / Calibrated Edges	±1/16"
Quirk Miters (width of Nose)	
up to 1/4"	-0; +25% of dim
Quirk Miters (width of Nose)	
over 1/4"	-0, +1/16" (-0, +1.5 mm)
Elevation of Bearing Surface:	±1/16" (±1.5 mm)

3. Flatness Tolerances

- a. Variation from true plane, or flat surfaces, shall be determined by a 4' dimension in any direction on the surface.
- b. Variations on polish, hone, and fine rubbed surfaces shall not exceed tolerances listed below or 1/3 of the specified joint width, whichever is greater. On surfaces having other finishes, the maximum variation from true plane shall not exceed the tolerance listed below or 1/2 of the specified joint width, whichever is greater.

Polished, honed or fine rubbed finishes	1/16" (1.5 mm)
Thermal and coarse stippled finishes	3/16" (1.5 mm)

E. Beds and Joints (f)

- 1. Pieces shall be bedded and jointed as shown on the approved shop drawings, and bed and joint surfaces shall be cut as follows:
  - a. Bed and joint surfaces shall be sawn through the full thickness of the granite piece. Bed and joint surfaces shall be within ±3° of 90° to the face of the piece unless otherwise specified.

- b. Beds and joints shall be sawn or cut full square 2" back from the face and from that point may fall under square not more than 1" in 12". Both beds and joints shall be reasonably free of large depressions.

F. Backs of Pieces (g)

- 1. Backs of all pieces shall be sawn to approximately true planes.

## 2.2 ANCHORS AND ACCESSORIES

A. Anchors shall be as manufactured by Homan and Barnard, Hauppauge, NY, or approved equal.

- 1. Split tail anchors at panels
- 2. 1/4" dowels at seats and wall caps.
- 3. Stainless steel type 316.

## 2.3 SEALANTS

A. Joints shall be sealed with silicone sealant with backer rods. See Section 07951.

## 2.4 SHIPPING AND HANDLING

A. Packing and Loading

- 1. Finished granite shall be carefully packed and loaded for shipment using all reasonable and customary precautions against damage in transit. No material which may cause staining or discoloration shall be used for blocking or packing.

B. Site Storage

- 1. Upon receipt at the building site or storage yard, the granite shall be stacked on timber or platforms at least 3" above the ground, and extreme care shall be taken to prevent staining during storage. If storage is to be for a prolonged period, polyethylene or other suitable plastic film shall be placed between any wood and finished surfaces, and shall be used also as an overall protective covering. All holes shall be plugged during freezing weather to prevent the accumulation of water. Salt shall not be used for melting of ice formed in Lewis holes or on pieces, or for any purpose involving its contact with the granite.

## PART 3. EXECUTION

### 3.1 PREPARATION

- A. Installer shall thoroughly inspect all surfaces to receive granite facing and shall notify Architect of any conditions that are unsatisfactory for installation of the granite. Unsatisfactory conditions must be corrected prior to beginning granite installation.
- B. Masonry wall surfaces to receive direct applied granite panes (below seat) with epoxy mortar adhesive shall be plumb, true, and flat with a maximum tolerance of 1/16" in 48".

### 3.2 INSTALLATION

- A. All granite shall be set in accordance with industry standards and shall be set plumb, straight, and level, such that granite elements join together flush and smooth without lippage.
- B. Plaque panels shall be set in such manner that the panels yield a flush and smooth continuous wall surface on all three sides of the fountain, with horizontal and vertical alignments, straight and true.
- C. Plaque panels shall be set with a maximum air space of 1 inch between the back of the granite panel and the face of the masonry wall. Masonry walls to receive granite shall be waterproofed.
- D. Anchors shall be installed in sufficient quantities and locations to support the weight of the granite and to firmly secure the granite against the force of high winds and other elements of nature.
- E. All joints shall be struck clean.
- F. Provide for expansion and contraction in all assemblies.

### 3.3 CLEANING AND PROTECTION

- A. **Cleaning**  
Granite shall be shop cleaned at the time of final fabrication. After installation and pointing or caulking are completed, the contractor shall carefully clean the granite, removing all dirt, excess mortar, weld splatter, stains, and/or other site incident defacements

Stainless steel wire brushes or wool may be used, but the use of other wire brushes or of acid or other solutions which may cause discoloration is expressly prohibited. Fabricator should be contacted before cleaners other than detergents are used.

- C. **Protection of Finished Work**  
After the granite work is installed, the granite shall be properly and adequately protected from damage. Boxing or other suitable protection shall be provided wherever required, but no lumber which may stain or deface the granite shall be used. All nails used shall be non-corrosive.

All granite work in progress shall be protected at all times during construction by use of a suitable strong, impervious film or fabric securely held in place.

End of Section 09750

SECTION 09986  
POOL PLASTER

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Preparation of fountain pool surfaces.
- B. Exposed aggregate pool finish
- C. Pool start-up, including filling, adjusting chemistry, and brushing for specified initial start-up period.

1.2 RELATED SECTIONS

- A. Section 09310 – Porcelain & Glass Tile
- B. Section 03300 – Cast in Place Concrete
- C. Section 04200 – Unit Masonry

1.3 SUBMITTALS

- A. Submit under provisions of Section 01340.
- B. Selections Samples: Color samples showing manufacturer's full selection.
- C. Manufacturer's installation instructions.
- D. One copy of each of the following, for Owner's use:
  - 1. Nationals Spa and Pool Institute "Pool Plaster Technology."
  - 2. National Plasterers Council "Start-Up Do's and Don'ts for Newly Plastered Swimming Pools."
  - 3. National Plasterers Council "Care Tips for New Swimming Pool Plaster."
- E. Submit batch numbers of bags used to Owner for warranty purposes.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Experienced in installation of pool plasters or trained by coating manufacturer.

1.5 WARRANTY

- A. Provide manufacturer's 5-year limited warranty to pool owner.

1.6 MAINTENANCE MATERIALS

- A. Provide one bag of each batch used in mix to Owner, with description of mix ratio used and installation instructions, for Owner's use in making repairs.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Pool Coating: Southern Grouts and Mortars. 1502 SW 2<sup>nd</sup> Place, Pompano Beach, FL 33069. ASD. Tel: (800) 641-9247 or (954) 943-2288. Fax: (954) 943-2402. Email: [sales@sgm78.com](mailto:sales@sgm78.com)
- B. Request for substitutions will be considered in accordance with provisions of Section 01340.
- C. Substitutions: No permitted unless approved by Architect.

### 2.2 MATERIALS

- A. Pool Coating: SGM Diamond Brite<sup>(TM)</sup> exposed aggregate finish, made with 100 percent quartz aggregate and polymer modified cement, or approved equal.
  - 1. Colors: As selected from manufacturer's full line
  - 2. Provide enough material to have sufficient quantity for replacement of unsatisfactory work.
- B. Bond Coat: SGM Bond Kote
- C. Water: Potable water without detrimental minerals, metals, hardness, or alkalinity; if in doubt, verify quality with coating manufacturer.
- D. Masonry waterproofing: Thoroseal, 3 coats, or approved equal.

## PART 3 EXECUTION

### 3.1 PREPARATION

- A. Examine surfaces to identify conditions that might interfere with proper bonding of coatings.
  - 1. Look for algae, mold, or mildew.
  - 2. Look for dirt, paint, mortar droppings, patching compounds, loose tile, cracked plaster.
  - 3. Identify hollow spots in substrate.
- B. Clean surfaces of all material that might interfere with proper bonding or coating.
  - 1. Clean with high pressure water or by sand blasting.
  - 2. Wash with chlorine until algae, mold, and mildew are gone.
  - 3. Wash oil and grease spots using trisodium phosphate and water; soak if necessary.
- C. Remove and repair all hollow and delaminated material.
- D. Plug pool inlets and outlets to prevent clogging.
- E. Mark location of fittings using tape on coping or on a measured drawings.

### 3.2 INSTALLATION

- A. Do not begin installation until fountain pool shell and waterproofing have fully cured.

- B. Provide mock-up sample of finish coat on Bond Coat, 12" X 12" minimum on plywood or hardboard base, for approval by Architect prior to commencing work.
- C. Apply coating in accordance with coating manufacturer's instructions and recommendations.
- D. Apply coating to produce best quality and consistent color throughout. If material from more than one batch number is used, mix all batches together for color consistency.
- E. Apply, trowel, and expose aggregate using methods and sequence selected to produce the most uniform finish. Avoid practices that may cause washouts, shadows, streaks, or discoloration.
- F. At areas that will be above water line, take care to avoid blisters or hollows and water cure for 7 to 28 days to reduce possibility of shrinkage cracking.
- G. Replace areas of non-uniform appearance.
- H. Brush entire coated surface twice a day for the first 3 days. Thereafter, brush entire surface once a day for 2 weeks.
- I. Do not use wheeled vacuums for at least 14 days (to avoid wheel marks).

END OF SECTION 09986

## **SECTION 15145**

### **PLUMBING PIPING**

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Pipe, pipe fittings, valves, and connections for piping systems.
  - 1. Sanitary sewer.
  - 2. Domestic water.

##### **1.02 RELATED REQUIREMENTS**

##### **1.03 REFERENCE STANDARDS**

- A. ASTM D2564 - Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems; 2004 (Reapproved 2009).
- B. ASTM D2665 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings; 2012.
- C. ASTM D2855 - Standard Practice for Making Solvent-Cemented Joints with Poly(Vinyl Chloride) (PVC) Pipe and Fittings; 1996 (Reapproved 2010).
- D. ASTM D3034 - Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings; 2008.
- E. AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe, 4 In. Through 12 In. (100 mm Through 300 mm), for Water Distribution; American Water Works Association; 2008 (ANSI/AWWA C900).

#### **PART 2 PRODUCTS**

##### **2.01 SANITARY SEWER PIPING**

- A. PVC Pipe: ASTM D2665 or ASTM D3034.
  - 1. Fittings: PVC.
  - 2. Joints: Solvent welded, with ASTM D2564 solvent cement.

##### **2.02 WATER PIPING**

- A. PVC Pipe: AWWA C900.

#### **PART 3 EXECUTION**

##### **3.01 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. PVC Pipe: Make solvent-welded joints in accordance with ASTM D2855.

**END OF SECTION**

## SECTION 15495

### FOUNTAIN PLUMBING SYSTEMS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Pipe and Pipe Fittings, Valves, Strainers.
- B. Filters.
- C. Drains.
- D. Nozzle.
- E. Water Level Controllers.
- F. Submersible Pumps.
- G. Pool Water Treatment Systems.

##### 1.02 REFERENCE STANDARDS

- A. ASTM D1785 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120; 2012.
- B. ASTM D2467 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80; 2006.
- C. ASTM D2855 - Standard Practice for Making Solvent-Cemented Joints with Poly(Vinyl Chloride) (PVC) Pipe and Fittings; 1996 (Reapproved 2010).
- D. NSF 50 - Circulation System Components and Related Materials for Swimming Pools, Spas/Hot Tubs; NSF International; 2011.

##### 1.03 SUBMITTALS

- A. See Section 01300 - Administrative Requirements for submittal procedures.

#### PART 2 PRODUCTS

##### 2.01 PIPE AND FITTINGS

- A. PVC Pipe: ASTM D1785, Schedule 80.
  - 1. Fittings: ASTM D2467, PVC.
  - 2. Joints: ASTM D2855, solvent weld.

##### 2.02 SUBMERSIBLE PUMPS

- A. Manufacturers:
  - 1. BJM Pumps; RX Series.
  - 2. Approved Equal.
- B. Performance:
  - 1. See schedule on sheet P1.
- C. Electrical Characteristics:
  - 1. See schedule on sheet P1.
  - 2. 230 volts, single phase, 60 Hz.

##### 2.03 HYDRAULIC WATER LEVEL CONTROLLER

- A. Manufacturers:
  - 1. Crystal Fountains; Model ACF-100.
  - 2. Approved Equal.

- B. Freestanding, non-electric type.
- C. Shall have variable height adjustments and slow closing feature to prevent shock from water hammer.

#### **2.04 NOZZLES**

- A. Manufacturers:
  - 1. Crystal Fountains; Model NEW-101 Underwater Plume Jet.
  - 2. Approved Equal.
- B. Water level dependent.
- C. Construction shall be cast bronze and brass with integral swivel connection.
- D. Performance
  - 1. Spray Height: 12".
  - 2. Flow: 5.7 gpm.
  - 3. Head: 7 ft.
  - 4. Spread: 10"
- E. Inlet: 1" npt.

#### **2.05 OVERFLOW DRAINS**

- A. Manufacturers:
  - 1. Crystal Fountains; Model DOW300.
  - 2. Approved Equal.
- B. Outlet Size: 3"
- C. Shall be equipped with an adjustable weir plate.

#### **2.06 FLOOR DRAINS**

- A. Manufacturers:
  - 1. Plastic Oddities; Model PHD820.
  - 2. Approved Equal.
- B. 3" over pipe fit, heavy-duty, adjustable.
- C. Stainless-steel strainer.

#### **2.07 STRAINER**

- A. Manufacturers:
  - 1. Hayward; SB Series.
  - 2. Approved Equal.
- B. NSF Listing: Provide products that are NSF listed under NSF 50.
- C. Material: PVC.
- D. Size: 2".

#### **2.08 AUTOMATIC CHLORINE FEEDER**

- A. Manufacturers:
  - 1. Hayward; Model CL200.
  - 2. Approved Equal.

#### **2.09 DIAPHRAGM VALVES**

- A. Manufacturers:
  - 1. Hayward; DAB Series.
  - 2. Approved Equal.

- B. Size to match line connected.
- C. True union connections.

#### **2.10 BALL VALVES**

- A. Manufacturers:
  - 1. Hayward; TB Series.
  - 2. Approved Equal.
- B. Size to match line connected.
- C. True union connections.

#### **2.11 CHECK VALVES**

- A. Manufacturers:
  - 1. Hayward; YC Series.
  - 2. Approved Equal.
- B. Size to match line connected.
- C. True union connections.

#### **2.12 COMMERCIAL FILTERS**

- A. Manufacturers:
  - 1. Hayward; Model CFLT4201.
  - 2. Approved Equal.
- B. NSF Listing: Provide products that are NSF listed under NSF 50.
- C. Filter Media: Cartridge.
- D. Tank: Reinforced polypropylene material with mounting base.
- E. Element Cartridge: Reinforced polyester with gasketed molded end caps.
- F. Performance:
  - 1. Flow rate: 50 gpm.
  - 2. Total effective area: 47 sq ft.

### **PART 3 EXECUTION**

#### **3.01 INSTALLATION**

- A. Install equipment in accordance with manufacturer's instructions.
- B. Install piping to not interfere with use of space and other work. Route piping in orderly manner, and maintain gradient.
- C. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment. Provide access to valves and fittings.

**END OF SECTION**

## SECTION 16060

### GROUNDING AND BONDING

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Grounding and bonding requirements.
- B. Conductors for grounding and bonding.
- C. Connectors for grounding and bonding.
- D. Ground rod electrodes.

##### 1.02 RELATED REQUIREMENTS

- A. Section 16123 - Building Wire and Cable: Additional requirements for conductors for grounding and bonding, including conductor color coding.

##### 1.03 REFERENCE STANDARDS

- A. IEEE 81 - Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System; 1983.
- B. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- C. NEMA GR 1 - Grounding Rod Electrodes and Grounding Rod Electrode Couplings; National Electrical Manufacturers Association; 2007.
- D. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- E. UL 467 - Grounding and Bonding Equipment; Current Edition, Including All Revisions.

##### 1.04 SUBMITTALS

- A. Comply with pertinent provisions of Section 01340.

##### 1.05 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.

#### PART 2 PRODUCTS

##### 2.01 GROUNDING AND BONDING REQUIREMENTS

- A. Do not use products for applications other than as permitted by NFPA 70 and product listing.
- B. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.
- C. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
- D. Grounding System Resistance:
  - 1. Achieve specified grounding system resistance under normally dry conditions unless otherwise approved by Engineer. Precipitation within the previous 48 hours does not constitute normally dry conditions.

2. Grounding Electrode System: Grounding electrode system is existing. Check resistance to ground. Add grounding rods as need to achieve resistance of not greater than 5 ohms to ground, when tested according to IEEE 81 using "fall-of-potential" method.

## **2.02 GROUNDING AND BONDING COMPONENTS**

- A. General Requirements:
  1. Provide products listed, classified, and labeled by Underwriter's Laboratories Inc. (UL) or testing firm acceptable to authority having jurisdiction as suitable for the purpose indicated.
  2. Provide products listed and labeled as complying with UL 467 where applicable.
- B. Conductors for Grounding and Bonding, in addition to requirements of Section 16123:
  1. Use insulated copper conductors unless otherwise indicated.
    - a. Exceptions:
      - 1) Use bare copper conductors where installed underground in direct contact with earth.
      - 2) Use bare copper conductors where directly encased in concrete (not in raceway).
- C. Connectors for Grounding and Bonding:
  1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
  2. Unless otherwise indicated, use exothermic welded connections for underground, concealed and other inaccessible connections.
  3. Unless otherwise indicated, use mechanical connectors, compression connectors, or exothermic welded connections for accessible connections.
- D. Ground Rod Electrodes:
  1. Comply with NEMA GR 1.
  2. Material: Copper-bonded (copper-clad) steel.
  3. Size: 5/8 inch diameter by 10 feet length, unless otherwise indicated.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
- B. Install grounding and bonding system components in a neat and workmanlike manner in accordance with NECA 1.
- C. Ground Rod Electrodes: Unless otherwise indicated, install ground rod electrodes vertically. Where encountered rock prohibits vertical installation, install at 45 degree angle or bury horizontally in trench at least 30 inches (750 mm) deep in accordance with NFPA 70 or provide ground plates.
- D. Make grounding and bonding connections using specified connectors.
  1. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors. Do not remove conductor strands to facilitate insertion into connector.
  2. Remove nonconductive paint, enamel, or similar coating at threads, contact points, and contact surfaces.
  3. Exothermic Welds: Make connections using molds and weld material suitable for the items to be connected in accordance with manufacturer's recommendations.
  4. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
  5. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.

**END OF SECTION**

## **SECTION 16123**

### **WIRE AND CABLE**

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Single conductor wire.
- B. Flexible, hard-use cable.
- C. Wiring connectors.

##### **1.02 RELATED REQUIREMENTS**

##### **1.03 REFERENCE STANDARDS**

- A. ASTM B3 - Standard Specification for Soft or Annealed Copper Wire; 2001 (Reapproved 2007).
- B. ASTM B8 - Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft; 2011.
- C. ASTM B33 - Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes; 2010.
- D. ASTM B787/B787M - Standard Specification for 19 Wire Combination Unilay-Stranded Copper Conductors for Subsequent Insulation; 2004 (Reapproved 2009).
- E. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- F. NEMA WC 70 - Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy; National Electrical Manufacturers Association; 2009 (ANSI/NEMA WC 70/ICEA S-95-658).
- G. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- H. UL 44 - Thermoset-Insulated Wires and Cables; Current Edition, Including All Revisions.
- I. UL 83 - Thermoplastic-Insulated Wires and Cables; Current Edition, Including All Revisions.
- J. UL 486A-486B - Wire Connectors; Current Edition, Including All Revisions.
- K. UL 486C - Splicing Wire Connectors; Current Edition, Including All Revisions.

##### **1.04 SUBMITTALS**

- A. Comply with pertinent provisions of Section 01340.

##### **1.05 QUALITY ASSURANCE**

- A. Conform to requirements of NFPA 70.

#### **PART 2 PRODUCTS**

##### **2.01 CONDUCTOR AND CABLE APPLICATIONS**

- A. Do not use conductors and cables for applications other than as permitted by NFPA 70 and product listing.
- B. Provide single conductor building wire installed in suitable raceway unless otherwise indicated, permitted, or required.

##### **2.02 ALL CONDUCTORS AND CABLES**

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products listed and classified by Underwriters Laboratories Inc. as suitable for the purpose indicated.
- C. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, etc. as required for a complete operating system.
- D. Comply with NEMA WC 70.
- E. Thermoplastic-Insulated Conductors and Cables: Listed and labeled as complying with UL 83.
- F. Thermoset-Insulated Conductors and Cables: Listed and labeled as complying with UL 44.
- G. Conductor Material:
  - 1. Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B787M unless otherwise indicated.
  - 2. Tinned Copper Conductors: Comply with ASTM B33.
- H. Conductor Color Coding:
  - 1. Color code conductors as indicated unless otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.
  - 2. Color Coding Method: Integrally colored insulation.
  - 3. Color Code:
    - a. 240/120 V, 1 Phase, 3 Wire System:
      - 1) Phase A: Black.
      - 2) Phase B: Red.
      - 3) Neutral/Grounded: White.
    - b. Equipment Ground, All Systems: Green.

### **2.03 SINGLE CONDUCTOR BUILDING WIRE**

- A. Description: Single conductor insulated wire.
- B. Conductor Stranding:
  - 1. Feeders and Branch Circuits:
    - a. Size 10 AWG and Smaller: Solid.
    - b. Size 8 AWG and Larger: Stranded.
- C. Insulation Voltage Rating: 600 V.
- D. Insulation:
  - 1. Copper Building Wire: Type THHN/THWN or THHN/THWN-2.

### **2.04 INDUSTRIAL PORTABLE POWER CABLE**

- A. Description: NFPA 70, Type W.
- B. Conductor: Copper.
- C. Insulation Voltage Rating: 600 volts.
- D. Cable shall be listed for extra-hard usage, wet locations and sunlight resistance.

### **2.05 WIRING CONNECTORS**

- A. Description: Wiring connectors appropriate for the application, suitable for use with the conductors to be connected, and listed as complying with UL 486A-486B or UL 486C as applicable.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that work likely to damage wire and cable has been completed.
- B. Verify that raceways, boxes, and equipment enclosures are installed and are properly sized to accommodate conductors and cables in accordance with NFPA 70.
- C. Verify that conditions are satisfactory for installation prior to starting work.

### **3.02 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
- B. Install conductors and cable in a neat and workmanlike manner in accordance with NECA 1.
- C. Installation in Raceway:
  - 1. Tape ends of conductors and cables to prevent infiltration of moisture and other contaminants.
  - 2. Pull all conductors and cables together into raceway at same time.
  - 3. Do not damage conductors and cables or exceed manufacturer's recommended maximum pulling tension and sidewall pressure.
  - 4. Use suitable wire pulling lubricant where necessary, except when lubricant is not recommended by the manufacturer.
- D. Secure and support conductors and cables in accordance with NFPA 70 using suitable supports and methods approved by the authority having jurisdiction. Provide independent support from building structure. Do not provide support from raceways, piping, ductwork, or other systems.
- E. Install conductors with a minimum of 12 inches of slack at each outlet.
- F. Neatly train and bundle conductors inside boxes, wireways, panelboards and other equipment enclosures.
- G. Make wiring connections using specified wiring connectors.
  - 1. Make splices and taps only in accessible boxes. Do not pull splices into raceways or make splices in conduit bodies or wiring gutters.
  - 2. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors.
  - 3. Do not remove conductor strands to facilitate insertion into connector.
  - 4. Clean contact surfaces on conductors and connectors to suitable remove corrosion, oxides, and other contaminants. Do not use wire brush on plated connector surfaces.
- H. Insulate splices and taps that are made with uninsulated connectors using methods suitable for the application, with insulation and mechanical strength at least equivalent to unspliced conductors.
  - 1. Wet Locations: Use heat shrink tubing.
- I. Insulate ends of spare conductors using vinyl insulating electrical tape.
- J. Unless specifically indicated to be excluded, provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.

**END OF SECTION**

## SECTION 16131

### CONDUIT

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. PVC-coated galvanized steel rigid metal conduit (RMC).
- B. Rigid polyvinyl chloride (PVC) conduit.
- C. Conduit fittings.

##### 1.02 RELATED REQUIREMENTS

- A. Section 16060 - Grounding and Bonding.

##### 1.03 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- B. NECA 111 - Standard for Installing Nonmetallic Raceways (RNC, ENT, LFNC); National Electrical Contractors Association; 2003.
- C. NEMA RN 1 - Polyvinyl-Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit; National Electrical Manufacturers Association; 2005.
- D. NEMA TC 2 - Electrical Polyvinyl Chloride (PVC) Conduit; National Electrical Manufacturers Association; 2003.
- E. NEMA TC 3 - Polyvinyl Chloride (PVC) Fittings for Use with Rigid PVC Conduit and Tubing; National Electrical Manufacturers Association; 2004.
- F. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- G. UL 6 - Electrical Rigid Metal Conduit-Steel; Current Edition, Including All Revisions.
- H. UL 514B - Conduit, Tubing, and Cable Fittings; Current Edition, Including All Revisions.
- I. UL 651 - Schedule 40 and 80 Rigid PVC Conduit and Fittings; Current Edition, Including All Revisions.

##### 1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
  - 1. Coordinate minimum sizes of conduits with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
  - 2. Coordinate the arrangement of conduits with structural members, piping, equipment and other potential conflicts installed under other sections or by others.
  - 3. Verify exact conduit termination locations required for boxes, enclosures, and equipment installed under other sections or by others.
  - 4. Notify Engineer of any conflicts with or deviations from the contract documents. Obtain direction before proceeding with work.
- B. Sequencing:
  - 1. Do not begin installation of conductors and cables until installation of conduit is complete between outlet, junction and splicing points.

##### 1.05 SUBMITTALS

- A. Comply with pertinent provisions of Section 01340.

- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for conduits and fittings.

## **1.06 QUALITY ASSURANCE**

- A. Conform to requirements of NFPA 70.

## **PART 2 PRODUCTS**

### **2.01 CONDUIT APPLICATIONS**

- A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70 and product listing.
- B. Within Fountain (all wiring within fountain and from fountain to pull boxes): PVC-coated galvanized steel rigid metal conduit
- C. Outside Fountain: rigid PVC conduit.

### **2.02 CONDUIT REQUIREMENTS**

- A. Provide all conduit, fittings, supports, and accessories required for a complete raceway system.
- B. Provide products listed, classified, and labeled by Underwriter's Laboratories Inc. (UL) or testing firm acceptable to authority having jurisdiction as suitable for the purpose indicated.
- C. Minimum Conduit Size, Unless Otherwise Indicated:
  - 1. Underground, Exterior: 3/4 inch (21 mm) trade size.
- D. Where conduit size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

### **2.03 PVC-COATED GALVANIZED STEEL RIGID METAL CONDUIT (RMC)**

- A. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit with external polyvinyl chloride (PVC) coating complying with NEMA RN 1 and listed and labeled as complying with UL 6.
- B. Exterior Coating: Polyvinyl chloride (PVC), nominal thickness of 40 mil.
- C. PVC-Coated Fittings:
  - 1. Manufacturer: Same as manufacturer of PVC-coated conduit to be installed.
  - 2. Non-Hazardous Locations: Use fittings listed and labeled as complying with UL 514B.
  - 3. Material: Use steel or malleable iron.
  - 4. Exterior Coating: Polyvinyl chloride (PVC), minimum thickness of 40 mil.

### **2.04 RIGID POLYVINYL CHLORIDE (PVC) CONDUIT**

- A. Manufacturers:
  - 1. Cantex Inc: [www.cantexinc.com](http://www.cantexinc.com).
  - 2. Carlon, a brand of Thomas & Betts Corporation: [www.carlon.com](http://www.carlon.com).
  - 3. JM Eagle: [www.jmeagle.com](http://www.jmeagle.com).
  - 4. Approced Equal.
- B. Description: NFPA 70, Type PVC rigid polyvinyl chloride conduit complying with NEMA TC 2 and listed and labeled as complying with UL 651; Schedule 80 unless otherwise indicated; rated for use with conductors rated 90 degrees C.
- C. Fittings:
  - 1. Manufacturer: Same as manufacturer of conduit to be connected.

2. Description: Fittings complying with NEMA TC 3 and listed and labeled as complying with UL 651; material to match conduit.

### **PART 3 EXECUTION**

#### **3.01 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
- B. Install conduit in a neat and workmanlike manner in accordance with NECA 1.
- C. Install PVC-coated galvanized steel rigid metal conduit (RMC) using only tools approved by the manufacturer.
- D. Install rigid polyvinyl chloride (PVC) conduit in accordance with NECA 111.
- E. Connections and Terminations:
  1. Use suitable adapters where required to transition from one type of conduit to another.
  2. Provide insulating bushings or insulated throats at all conduit terminations to protect conductors.
  3. Secure joints and connections to provide maximum mechanical strength and electrical continuity.
- F. Penetrations:
  1. Do not penetrate or otherwise notch or cut structural members, including footings and grade beams, without approval of Structural Engineer.
  2. Make penetrations perpendicular to surfaces unless otherwise indicated.
  3. Provide ductile iron sleeves for penetrations of structural member two pipe sizes larger than conduit.
  4. Conceal bends for conduit risers emerging above ground.
  5. Seal interior of conduits entering the panel from underground at first accessible point to prevent entry of moisture and gases.
  6. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.
- G. Underground Installation:
  1. Minimum Cover, Unless Otherwise Indicated or Required:
    - a. Underground, Exterior: 24 inches.
    - b. Under Slab on Grade: 12 inches to bottom of slab.
- H. Conduit Movement Provisions: Where conduits are subject to movement, provide expansion and expansion/deflection fittings to prevent damage to enclosed conductors or connected equipment. This includes, but is not limited to:
  1. Where conduits cross structural joints intended for expansion, contraction, or deflection.
  2. Where conduits are subject to earth movement by settlement or frost.
- I. Provide grounding and bonding in accordance with Section 16060.

#### **3.02 CLEANING**

- A. Clean interior of conduits to remove moisture and foreign matter.

#### **3.03 PROTECTION**

- A. Immediately after installation of conduit, use suitable manufactured plugs to provide protection from entry of moisture and foreign material and do not remove until ready for installation of conductors.

**END OF SECTION**

## SECTION 16520

### EXTERIOR LUMINAIRES

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Exterior luminaires.

##### 1.02 RELATED REQUIREMENTS

##### 1.03 REFERENCE STANDARDS

- A. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- B. UL 1598 - Luminaires; Current Edition, Including All Revisions.

##### 1.04 SUBMITTALS

- A. Comply with pertinent provisions of Section 01340.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, weight, effective projected area (EPA), and installed accessories; include model number nomenclature clearly marked with all proposed features.

##### 1.05 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.

#### PART 2 PRODUCTS

##### 2.01 LUMINAIRES

- A. See schedule on Sheet E3 of plans.
- B. Provide products that comply with requirements of NFPA 70.
- C. Provide products that are listed and labeled as complying with UL 1598, where applicable.
- D. Provide products listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.
- E. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, ballasts, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.
- F. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, poles, foundations, supports, trims, accessories, etc. as necessary for a complete operating system.
- G. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.

#### PART 3 EXECUTION

##### 3.01 INSTALLATION

- A. Install products according to manufacturer's instructions.
- B. Install luminaires plumb and square and aligned with fountain lines and with adjacent luminaires.

- C. Install accessories furnished with each luminaire.
- D. Bond products and metal accessories to branch circuit equipment grounding conductor.
- E. Install lamps in each luminaire.

**END OF SECTION**

## SECTION 16902

### FOUNTAIN CONTROLS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Fountain Controls.

##### 1.02 RELATED SECTIONS

- A. Section 15495 - Fountain Plumbing Systems.

##### 1.03 REFERENCES

- A. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- B. UL 508A - Industrial Control Panels; Latest.

##### 1.04 SUBMITTALS

- A. Comply with pertinent provisions of Section 01340.
- B. Wiring and control diagrams specially prepared to satisfy control requirements in the contract documents shall be submitted with the shop drawings. Diagrams shall be complete and specific.

##### 1.05 WARRANTY

- A. Provide one year warranty from the date of the initial start up of the complete system. Warranty shall cover the cost of parts, labor, and travel for repairs at the site.

#### PART 2 PRODUCTS

##### 2.01 CONTROL PANEL

- A. Regulatory
  - 1. Panel shall be built and listed in accordance with UL 508A.
  - 2. All field work shall comply with NFPA 70.
- B. General
  - 1. Control power shall be 120 +/- 10% VAC, 60 Hertz, single phase.
  - 2. The controls shall operate the following per schematic shown on E2 of drawings.
    - a. Water feature pumps as shown on sheet P1 of drawings and described in Section 15495 of these specifications.
    - b. Treatment pump as shown on sheet P1 of drawings and described in Section 15495 of these specifications.
    - c. Fountain lighting as shown on sheet E3 of drawings and described in Section 16520 of these specifications.
  - 3. The complete control assembly shall be mounted in one UL Type 4X thermoplastic or 316 stainless steel enclosure. Enclosure shall have a dead front and an inner swing panel which contains all operator interface devices.
  - 4. All components shall be securely fastened to the removable back panel. Back panel shall be tapped to accept all mounting screws. Self-tapping screws shall not be used to mount any component.
  - 5. Engraved laminated plastic nameplates with white letters on white background shall be provided for all operator interface devices on the swing panel.
  - 6. A plastic laminated electric diagram with wire / terminal numbers and color codes shall be permanently fastened to the inside of the enclosure door.
  - 7. Panel Wiring
    - a. Wire shall be sized as required for load and application according to NFPA 70.

- b. Wiring shall be neatly bundled and continuous from point to point.
- c. Wiring shall be permanently marked on each end to match the schematic drawing.
- d. Control and signal wire shall be a minimum of #14 AWG, stranded, 90 degree insulated.

C. Operation

- 1. Water Feature Pumps (P1 and P2).
  - a. The controls shall provide means to operate the pump manually or automatically. Control of the operation of the pumps shall be through Hand-Off-Auto selector switches (one per pump).
    - 1) Auto Mode - When in the Auto position, the pump shall be started by a programmable timer.
    - 2) Hand Mode - When in the Hand position, the pumps shall run and the automatic controls shall be by-passed.
    - 3) Pumps shall automatically shutdown under the following conditions.
      - (a) Winding overtemp trip.
      - (b) Low level float opening.
      - (c) Hand-Off-Auto switch placed in Off position.
- 2. Treatment Pump (P3).
  - a. Shall be controlled by an ON-OFF selector switch in the control panel.
  - b. Pumps shall automatically shutdown under the following conditions.
    - 1) Winding overtemp trip.
    - 2) Low level float opening.
- 3. Fountain Lights
  - a. The controls shall provide means to operate the fountain lights manually or automatically. Control of the operation of the lights shall be through a Hand-Off-Auto selector switch.
    - 1) Auto Mode - When in the Auto position, the light shall be controlled by a programmable timer and photo sensor. The timer contact and the photo sensor shall be wired in series such that the lights only energize when timer program request the lights and the photo sensor senses darkness.

D. Components

- 1. Pump and Light Breakers
  - a. Shall be thermal-magnetic, ampacity as noted on plans unless manufacturer dictates otherwise.
  - b. Shall have integral ground-fault protection per NFPA 70, Article 680.51 (A).
  - c. Minimum Integrated Short Circuit Rating: 10,000 amperes rms symmetrical.
  - d. Breaker shall have lock-off capability.
- 2. Control Breaker
  - a. Shall be thermal-magnetic, 15 A, 1-pole, 120 VAC.
  - b. Minimum Integrated Short Circuit Rating: 10,000 amperes rms symmetrical.
- 3. Pump Contactors
  - a. Shall be IEC rated.
  - b. Provide adjustable thermal overload sized for full load current of pump motor installed with manual reset if internal motor protection doesn't exist.
- 4. Lighting Contactor
  - a. Shall be rated for use with tungsten and electrical discharge lighting.
  - b. 30 A minimum contacts.
- 5. Programmable Timer
  - a. Intermatic FM1D20 or approved equal.
  - b. 24-hour, 7-day programmable.
  - c. Pilot-duty contacts.
  - d. 120vac.
- 6. Photo-Sensor
  - a. Intermatic K1100 series or equal.
  - b. Mount in area not affected by street lighting (on panel if possible).

7. Float Switches
  - a. UL listed wide-angle sensor switch with normally open contact for pump-down operation.
8. Pilot Lights.
  - a. Pilot lights shall be heavy duty oiltight/watertight units designed for illumination under control voltage.
  - b. 30 mm, non-metallic type.
  - c. Pilot lights shall be provided for conditions indicated below with colored caps as described.
    - 1) Power Available.
      - (a) Color: Amber.
      - (b) Label: "POWER".
    - 2) Pump Run.
      - (a) Color: Green.
      - (b) Label: "PUMP # RUN".
      - (c) Source: Pump motor starter coils.
9. Selector Switches.
  - a. Selector switches shall be heavy duty oiltight/watertight.
  - b. 30 mm, non-metallic type.
  - c. Functions.
    - 1) Hand-Off-Auto: Use 3-position, maintained.
    - 2) On-Off: Use 3-position, spring return.
10. Surge Arrester
  - a. Manufacturer - Square D SDSA1175 or equal.

### **PART 3 EXECUTION**

#### **3.01 INSTALLATION**

- A. Installation shall be as shown on the drawings and as recommended by the manufacturer.
- B. Provide all mounting supports, brackets, bolts, etc. to ensure solid, corrosive resistant installation. No dissimilar metals shall be used.

**END OF SECTION**



Published on *Big Rock Blue Marlin Tournament* (<http://www.thebigrock.com>)

[Home](#) > Previous Winners

## Previous Winners

By *admin*

Created *Sunday, Dec 27*

Date	Weight	Boat	Angler
1957	143.5	Mary Z	Jimmy Croy, LaGrange, NC. First Marlin landed off Morehead, caught aboard Bill Olsen's Mary Z
1958	428.5	Dolphin	C.L. Safrit, Salisbury, NC
1959	397.25	Bunny Too	J.D. Rivers, Durham, NC
First Fabulous Fisherman's Blue Marlin Tournament 1960			
1960	390.5	Bunny Too	Carroll Williams, Petersburg, VA
1961	474.5	Tom n' Jerry	J. Duckett/W., Turner, Cherry Point, NC
1962	487	Sea Hag	Dr. Leroy Allen, Raleigh, NC
1963	420	Bolo Jr.	Calvin Koonce, Raleigh, NC
1964	427	Dolphin	Curt Seifart, Charlotte, NC
1965 - No Fish Landed During Tournament			
1966	245	Bunny Too	Ivan Mercer, Charleston, SC

1967	350	Dolphin	Rufus English, Lynchburg, VA
1968	538	Red Snapper	Jerry Fulford, Washington, NC
1969	495	Dolphin 1	Leland Pribble, Madison Heights, VA
1970	496	Reel King	"Bump" Styron, Morehead City, NC
1971	377	Alpha D'Amour	Carroll Ballou, Morehead City, NC
1972	487	Wahoo	Lance Harris, Springfield, VA
1973	530.5	Sea Tramp	John Waldin, Charlotte, NC
1974	451	C'est la Vie	L.B. Britton, Jr., Ahoskie, NC
1975	481.5	Yellow Bird	Richard Miller, Rumson, NJ
1976	575	Restless V	Bob Donovan, Rockville, MD
1977	636	Sea Buster	Rusty Cutshaw, Morehead City, NC
1978	604	Kelly Bean	Mark Mason, Greensboro, NC
1979	376	Sea Mint	Jim O'Daiell
1980	390	Jet Stream	Margaret Adams, Winston-Salem, NC
1981	432	Flying Fish	Tom Barnes, Wilson, NC
1982	398.25	Marlin Darlin	T. Teeter, Morehead City, NC
1983	459.5	Promises Too	Ken McLeskey, Virginia Beach, VA
1984	720	Outlaw	Brad Gillam, Windsor, NC
1985	534.5	Sea Hag	Bruce Young, Raleigh, NC
1986	608.5	Shearwater	Susan Mac Rae, Sneads Ferry, NC
1987	576	Midnight Hour	James Edmonds, Arlington, VA
1988	440	O Four	Randall Link, Virginia Beach, VA
1989	513	Diamond Girl	Denard Harris, Charleston, SC
1990	717	Top Dawg	Dub Jones, Seabrook Island, SC
1991	637	Locomocean	Jimmy Zeigler, Richmond, VA

1992	514	Outlaw	Bob Smith, Hatteras, NC
1993	759	Chaser	Kathy Keel, Edenton, NC
1994	649	Salty Fare	Bob Waren
1995	400	Sea Striker	Rex Johnson
1996	535	"The Girl Next Door"	Russell Orenstein
1997	646	Ocean Yachts 48	Norm Schaeffler, Virginia Beach, VA
1998	564	Waste Knot	Karl Knudsen, Raleigh, NC
1999	600	Dancin' Outlaw	David Wood, Harkers Island, NC
2000*	831	Summertime Blues	Ron Wallschlager, Kiawah Island, SC
2001	515.5	Sea Striker	Vince Johnston, Morehead City, NC
2002	541.5	Samanna	Kent Copeland, Kill Devil Hills, NC
2003	677	Pipe Layer	J.F. Pedersen, Jr. Jim Pedersen, Hollywood, SC
2004	555	Impulse	Donald Lane, Jr., Jay Hughes
2005	529	Size Matters	Gigi Wagoner, Frederick, MD
2006	501.5	Chainlink	Wes Segars, Goldsboro, NC
2007	613	Bak Bar	Montukie Lewis, Mt. Pleasant, SC
2008	642	Artemis	Darryl Reyna, Mt. Pleasant, SC
2009	466	Sea Creature	Bobby Weeks, Brad Sewell, Hatteras, NC
2010	528	Carnivore	John Parks, Cape Carteret, NC
2011	652.8	Double B	Travis Stephenson, Greenville, NC
2012	499.3	Flybuoy	Todd Baxley, Wilmington, NC

\*denotes record

## BIG ROCK LADY ANGLERS WINNERS

1998

HATTERASCAL  
Sandra Silman  
Julie Richardson  
Leanne Jones

1999

ANITA JEAN  
Kay Zimarino  
Anita Watson  
Gena Byrd

2000

DELTA DAWN  
Lisa Binachi

2001

HONEY HUSH  
Michelle Quillen

2002

NO WINNERS

2003

CALIENTE  
Suzanne Phillips

2004

HONEY HUSH  
Annette Loftin

2005

TOWN CREEK MARINA REVELER  
Beth DiGiuseppe

2006

HATTERASCAL  
(Need Angler name)

2007

O LUCKY ME  
(Need Angler name)

2008

FISHING PARTNER  
Linda Sandbo

2009

JAMES JOYCE II  
Joyce Tipton

2010

FIGMENT  
Katharine Hesmer

2011

FIN HUNTER  
Cherie Otter

2012

ISLANDER  
Abbey Hooper

Permit Class  
NEW

Permit Number  
97-05

STATE OF NORTH CAROLINA  
Department of Environment and Natural Resources  
and  
Coastal Resources Commission

# Permit

for

Major Development in an Area of Environmental Concern  
pursuant to NCGS 113A-118

Excavation and/or filling pursuant to NCGS 113-229

Issued to Carteret Ventures Partnership, LLC, 1722 River Road, Morehead City, NC 28557

Authorizing development in Carteret County at Harbor Channel, at Morehead City

Waterfront, as requested in the permittee's application dated 2/14/05, including  
attached workplan drawings (2), both dated 1/28/05

This permit, issued on July 1, 2005, is subject to compliance with the application (where consistent with the permit), all applicable regulations, special conditions and notes set forth below. Any violation of these terms may be subject to fines, imprisonment or civil action; or may cause the permit to be null and void.

### Building Reconstruction

- 1) Unless specifically altered herein, this permit authorizes the reconstruction of the existing Ottis' Fish House and Restaurant building, all as depicted in the attached permit application and workplan drawings. The reconstructed building shall not exceed the two-dimensional footprint of the existing building, as defined by the drip line of the structure.
- 2) All construction shall comply with all applicable requirements of the N.C. Building Code

(See attached sheets for Additional Conditions)

This permit action may be appealed by the permittee or other qualified persons within twenty (20) days of the issuing date. An appeal requires resolution prior to work initiation or continuance as the case may be.

This permit must be accessible on-site to Department personnel when the project is inspected for compliance.

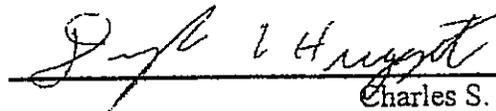
Any maintenance work or project modification not covered hereunder requires further Division approval.

All work must cease when the permit expires on

December 31, 2008

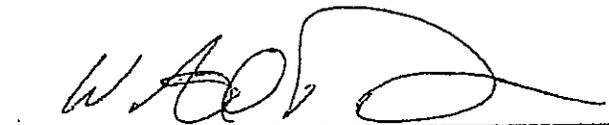
In issuing this permit, the State of North Carolina agrees that your project is consistent with the North Carolina Coastal Management Program.

Signed by the authority of the Secretary of DENR and the Chairman of the Coastal Resources Commission.



Charles S. Jones, Director  
Division of Coastal Management

This permit and its conditions are hereby accepted.



Signature of Permittee

**ADDITIONAL CONDITIONS****Docking Facility**

- 3) No sewage, whether treated or untreated, shall be discharged at any time from any boats using the docking facility. Any sewage discharge at the docking facility shall be considered a violation of this permit for which the permittee is responsible. This prohibition shall be applied and enforced throughout the entire existence of the permitted structure.
- 4) This permit authorizes only the docks, piers, and other structures and uses located in or over the water that are expressly and specifically set forth in the permit application. No other structure, whether floating or stationary, shall become a permanent part of this docking facility without permit modification. No non-water dependent uses of structures shall be conducted on, in or over Public Trust waters without permit modification.
- 5) The piers and associated structures shall have a minimum setback distance of 15 feet between any parts of the structure and the adjacent property owner's riparian access corridor, which is depicted in the attached workplan drawings as "observed riparian line".
- 6) No attempt shall be made by the permittee to prevent the full and free use by the public of all navigable waters at or adjacent to the authorized work.
- 7) The authorized structure and associated activity shall not cause an unacceptable interference with navigation.
- 8) The permittee shall install and maintain at his expense any signal lights or signals prescribed by the U.S. Coast Guard, through regulation or otherwise, on the authorized facilities. At a minimum, permanent reflectors shall be attached to the structure in order to make it more visible during hours of darkness or inclement weather.
- 9) This permit authorizes a maximum of 10 boat slips. At no time shall more than 10 vessels be moored or docked at the facility. The restriction of the number of vessels shall apply to all marine vessel types, including but not limited to motorboats, sailing vessels and personal watercraft.

**NOTE:** Any proposal to add one or more additional boat slips to the authorized 10-slip facility shall require that the docking facility be classified as a marina, and shall therefore require a review under the N.C. Environmental Policy Act (NCEPA).

**Easement**

- 10) Prior to construction of any new boat slips or other docking facilities under this permit, the permittee shall apply for and receive an **Easement** from the Department of Administration's State Property Office as required under N.C.G.S. 146-12(e).

**ADDITIONAL CONDITIONS**

**NOTE:** Should the Department of Administration determine that an easement will also be required for the reconstruction and vertical expansion of the existing building, then such an easement must also be obtained prior to the initiation of development of the building reconstruction.

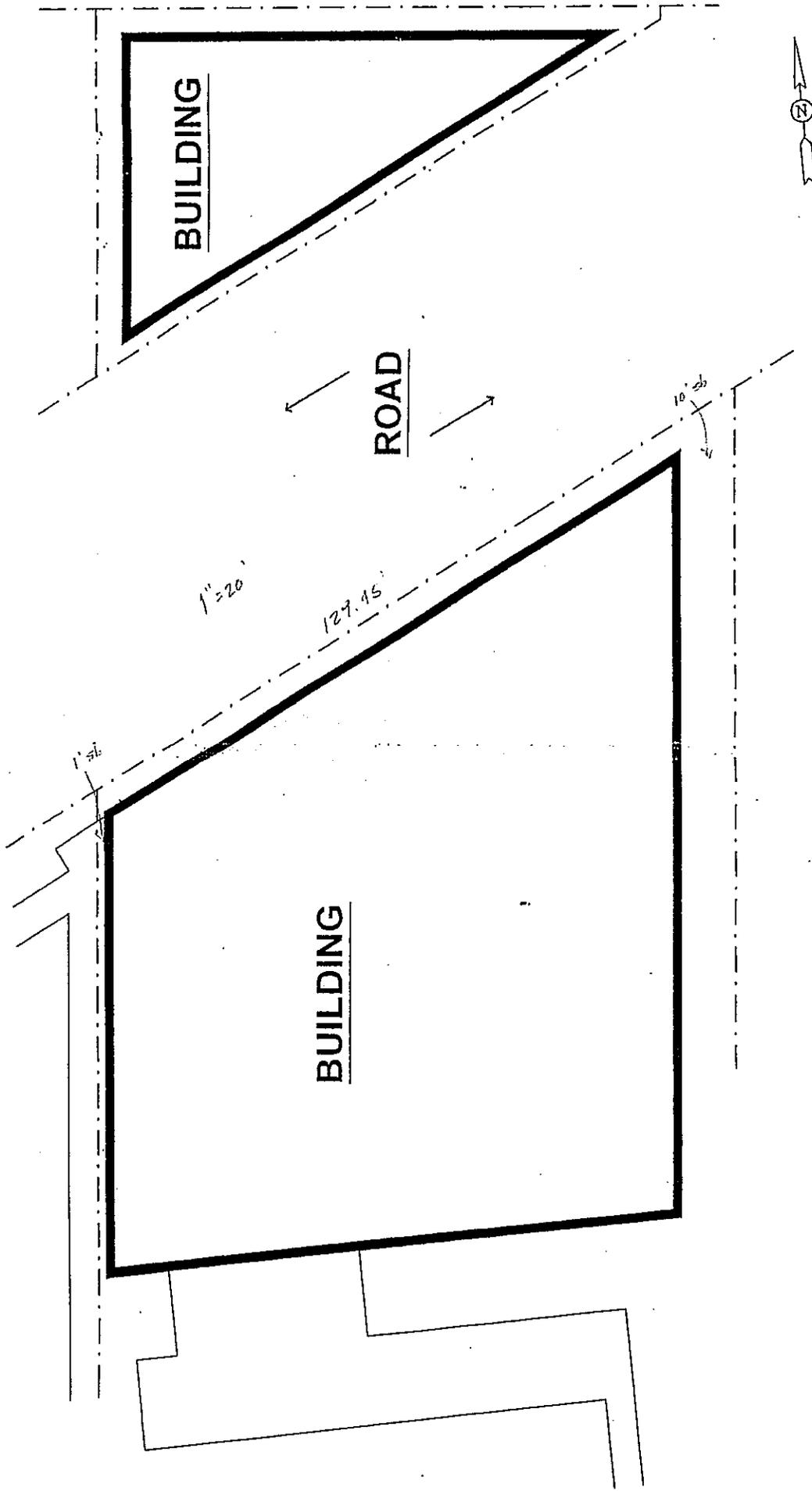
**General**

- 11) In an effort to minimize the adverse cumulative environmental effects on estuarine systems, the permittee shall prepare for Division of Coastal Management (DCM) approval an engineered pollutant discharge management plan for the parking deck. Following approval of the plan by DCM, this plan shall be implemented and maintained for the life of the permitted project. In order to ensure that the system, when implemented, continues to function as designed, the permittee shall submit annual reports to DCM documenting the continued effectiveness of the engineered system. This reporting requirement shall also remain in force for the life of the permitted project.
- 12) No vegetated wetlands shall be excavated or filled, even temporarily.
- 13) This permit does not authorize the excavation of any shallow bottom habitat, including "kicking" with boat propellers.
- 14) The permittee shall maintain the authorized work in good condition and in conformance with the terms and conditions of this permit. The permittee is not relieved of this requirement if he abandons the permitted activity without having it transferred to a third party.
- 15) This permit does not eliminate the need to obtain any additional state, federal or local permits, approvals or authorizations that may be required, including but not limited to an individual permit from the U.S. Army Corps of Engineers and/or all local building permits. The permittee shall obtain any required building permits or zoning approvals from the Town of Morehead City and must comply with all applicable ordinances and other state and federal authorizations, including any FEMA requirements

**NOTE:** It is strongly recommended that the permittee exercise all available precautions in the day-to-day operation of the permitted activities to prevent waste from entering the adjacent waters. Such discharge, either directly or indirectly, to adjacent waters could contravene state water quality standards, thereby violating state law.

**NOTE:** This permit does not convey any rights, either in real estate or material.

**NOTE:** This decision to issue this permit was based in part on a Declaratory Ruling issued by the Coastal Resources Commission on 5/8/03.



**NEW WATERFRONT DEVELOPMENT**  
**OTTIS' RESTAURANT**  
 MOREHEAD CITY, NORTH CAROLINA

301 Commerce Avenue, Suite 103  
 Morehead City, North Carolina 28557  
 Telephone: 252/342-2227 Fax: 252/342-6494  
 WWW: www.pda.com

**PDA**  
 pa  
 north carolina  
 Architects & Engineers & Planners  
 Morehead City

# FORM OF PROPOSAL

**Town of Morehead City**  
**706 Arendell Street**  
**Morehead City, NC 28557**

Contract: \_\_\_\_\_  
Bidder: \_\_\_\_\_  
Date: \_\_\_\_\_

The undersigned, as bidder, hereby declares that the only person or persons interested in this proposal as principal or principals is or are named herein and that no other person than herein mentioned has any interest in this proposal or in the contract to be entered into; that this proposal is made without connection with any other person, company or parties making a bid or proposal; and that it is in all respects fair and in good faith without collusion or fraud. The bidder further declares that he has examined the site of the work and the contract documents relative thereto, and has read all special provisions furnished prior to the opening of bids; that he has satisfied himself relative to the work to be performed.

## **BASE BID:**

---

The Bidder proposes to enter into a Single Prime lump sum contract with the **the Town of Morehead City, NC**, to furnish all necessary materials, equipment, machinery, tools, apparatus, means of transportation and labor necessary to complete the construction of the "JIB" Property Waterfront Amenity Phase I, as described in the Construction Documents, and consisting of the following:

1. A public plaza (JIB Plaza) approximately 4976 SF in size to include brick paving, landscaping, site bollards, utility connections, a fountain and base for the "Marlin Sculpture" including foundations, structure, fountain and sculpture base, structural connections for the Marlin Sculpture, fountain plumbing, electrical, equipment, controls, and other items as shown on the drawings.
2. An observation Deck approximately 1600 SF in size, located immediately south of the existing concrete bulkhead fronting onto the Morehead Channel of Bogue Sound. The deck will consist of treated wood decking, rails, and structure, supported on concrete piles.
3. Removal of approximately 5000 SF of existing asphalt paving from Shepard Street adjacent to the site, and replacing with brick paving on concrete base, two landscaping planters and adjoining asphalt paving.

The work shall be in full in complete accordance with the plans, specifications and contract documents, to the full and entire satisfaction of the **Town of Morehead City and MK Chalk Architecture, PA** with a definite understanding that no money will be allowed for extra work except as set forth in the General Conditions and the contract documents, for the sum of:

**Base Bid:**

\_\_\_\_\_ Dollars(\$)

General Subcontractor:

\_\_\_\_\_ Lic \_\_\_\_\_

Plumbing Subcontractor:

\_\_\_\_\_ Lic \_\_\_\_\_

Mechanical Subcontractor:

\_\_\_\_\_ Lic \_\_\_\_\_

Electrical Subcontractor:

\_\_\_\_\_ Lic \_\_\_\_\_

GS143-128(d) requires all single prime bidders to identify their subcontractors for the above subdivisions of work. A contractor whose bid is accepted shall not substitute any person as subcontractor in the place of the subcontractor listed in the original bid, except (i) if the listed subcontractor's bid is later determined by the contractor to be non-responsible or non-responsive or the listed subcontractor refuses to enter into a contract for the complete performance of the bid work, or (ii) with the approval of the awarding authority for good cause shown by the contractor.

**ALTERNATES:**

Should any of the alternates as described in the contract documents be accepted, the amount written below shall be the amount to be "added to" or "deducted from" the base bid.

**Alternate No. G-1** Omit all work, including demolition of existing asphalt paving and planter and replacement with new asphalt paving, brick and concrete paving and planters in the area shown on Shepard Street between the existing concrete valley gutters on each side of the street as indicated on the drawings, and shall include all earthwork, grading, base courses, underlayment, concrete edge strips, drainage, utility coordinations and all other items required for complete and finished work. Contractor retains obligation to make all utility connections, excavations, and patching paving as necessary.

**(Deduct)** \_\_\_\_\_ **Dollars(\$)**

**Alternate No. G-2** Provide engraving of 68 granite trophy plaques with information as listed in specification Section 09750 Architectural Granite and as indicated on the drawings.

**(Add)** \_\_\_\_\_ **Dollars(\$)**

**Alternate No. G-3** Provide demolition and removal of the existing wooden dock located on and adjacent to the west property line of the project and extending from the existing concrete bulkhead approximately 75 feet northward over the water. Demolition and removal shall include all decking, structure, fasteners, and piling.

**(Add)** \_\_\_\_\_ **Dollars(\$)**

## UNIT PRICES

Unit prices quoted and accepted shall apply throughout the life of the contract, except as otherwise specifically noted. Unit prices shall be applied, as appropriate, to compute the total value of changes in the base bid quantity of the work all in accordance with the contract documents.

**No. 1 (Earthwork) (Unit) Unit Price (\$)** \_\_\_\_\_  
Excavation and disposal of unsatisfactory soil materials and replacements with compacted satisfactory soil materials from off-site sources, on a cubic yard in place cost basis. Base bid shall include all grading shown in the construction documents. Unit prices shall be utilized only if unforeseen conditions arise.

**No. 2 (Concrete Piles) (Unit) Unit Price (\$)** \_\_\_\_\_  
See Section 02360 Concrete Piles for description of Unit Prices. Contractor shall provide a price per Linear foot for additional pile lengths required or credit for pile lengths less than indicated.

The bidder further proposes and agrees hereby to commence work under this contract on a date to be specified in a written order of the designer and shall fully complete all work thereunder within the time specified in the contract documents.

## MINORITY BUSINESS PARTICIPATION REQUIREMENTS

*Provide with the bid* - Under GS 143-128.2(c) the undersigned bidder shall identify **on its bid** (Identification of Minority Business Participation Form) the minority businesses that it will use on the project with the total dollar value of the bids that will be performed by the minority businesses. **Also** list the good faith efforts (Affidavit **A**) made to solicit minority participation in the bid effort.

**NOTE:** A contractor that performs all of the work with its own workforce may submit an Affidavit (**B**) to that effect in lieu of Affidavit (**A**) required above. The MB Participation Form must still be submitted even if there is zero participation.

***After the bid opening*** - The Owner will consider all bids and alternates and determine the lowest responsible, responsive bidder. Upon notification of being the apparent low bidder, the bidder shall then file within 72 hours of the notification of being the apparent lowest bidder, the following:

An Affidavit (**C**) that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the 10% goal established. This affidavit shall give rise to the presumption that the bidder has made the required good faith effort and Affidavit **D** is not necessary;

\* **OR** \*

If less than the 10% goal, Affidavit (**D**) of its good faith effort to meet the goal shall be provided. The document must include evidence of all good faith efforts that were implemented, including any advertisements, solicitations and other specific actions demonstrating recruitment and selection of minority businesses for participation in the contract.

**Note:** Bidders must always submit **with their bid** the Identification of Minority Business Participation Form listing all MB contractors, vendors and suppliers that will be used. If there is no MB participation, then enter none or zero on the form. Affidavit **A** or Affidavit **B**, as applicable, also must be submitted with the bid. Failure to file a required affidavit or documentation with the bid or after being notified apparent low bidder is grounds for rejection of the bid.

## **Proposal Signature Page**

---

---

The undersigned further agrees that in the case of failure on his part to execute the said contract and the bonds within ten (10) consecutive calendar days after being given written notice of the award of contract, the certified check, cash or bid bond accompanying this bid shall be paid into the funds of the owner's account set aside for the project, as liquidated damages for such failure; otherwise the certified check, cash or bid bond accompanying this proposal shall be returned to the undersigned.

Respectfully submitted this day of \_\_\_\_\_

\_\_\_\_\_  
(Name of firm or corporation making bid)

WITNESS:

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

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

Name: \_\_\_\_\_  
Print or type

Title \_\_\_\_\_  
(Owner/Partner/Pres./V.Pres)

Address \_\_\_\_\_

ATTEST:

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

Title: \_\_\_\_\_  
(Corp. Sec. or Asst. Sec. only)

License No. \_\_\_\_\_

Federal I.D. No. \_\_\_\_\_

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

(CORPORATE SEAL)

Addendum received and used in computing bid:

Addendum No. 1 \_\_\_\_\_ Addendum No. 3 \_\_\_\_\_ Addendum No. 5 \_\_\_\_\_ Addendum No. 6 \_\_\_\_\_

Addendum No. 2 \_\_\_\_\_ Addendum No. 4 \_\_\_\_\_ Addendum No. 6 \_\_\_\_\_ Addendum No. 7 \_\_\_\_\_

# DRAFT AIA® Document A101™ – 2007

## Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

**AGREEMENT** made as of the « » day of « » in the year « »  
(In words, indicate day, month and year.)

**BETWEEN** the Owner:  
(Name, legal status, address and other information)

«Town of Morehead City»« »  
«706 Arendell Street  
Morehead City, North Carolina 28557»  
«Telephone Number: 252-726-6848»  
«Fax Number: 252-726-2267»

and the Contractor:  
(Name, legal status, address and other information)

« »« »  
« »  
« »  
« »

for the following Project:  
(Name, location and detailed description)

«"JIB" Property Waterfront Amenity Phase 1»  
«705 & 707 Shepard Street  
Morehead City, North Carolina»  
« »

The Architect:  
(Name, legal status, address and other information)

«MK Chalk Architecture, P.A.»« »  
«Post Office Box 622  
Morehead City, North Carolina 28557»  
«Telephone Number: 252-726-3099»  
«mkcarchitect@ec.rr.com»

The Owner and Contractor agree as follows.

### ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

AIA Document A201™-2007, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

## TABLE OF ARTICLES

- 1 THE CONTRACT DOCUMENTS
- 2 THE WORK OF THIS CONTRACT
- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
- 4 CONTRACT SUM
- 5 PAYMENTS
- 6 DISPUTE RESOLUTION
- 7 TERMINATION OR SUSPENSION
- 8 MISCELLANEOUS PROVISIONS
- 9 ENUMERATION OF CONTRACT DOCUMENTS
- 10 INSURANCE AND BONDS

### ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

### ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

### ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

**§ 3.1** The date of commencement of the Work shall be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.

*(Insert the date of commencement if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)*

« »

If, prior to the commencement of the Work, the Owner requires time to file mortgages and other security interests, the Owner's time requirement shall be as follows:

« »

**§ 3.2** The Contract Time shall be measured from the date of commencement.

**§ 3.3** The Contractor shall achieve Substantial Completion of the entire Work not later than «Ninety» ( «90» ) days from the date of commencement, or as follows:

*(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)*

« »

Portion of Work

Substantial Completion Date

, subject to adjustments of this Contract Time as provided in the Contract Documents.

(Insert provisions, if any, for liquidated damages relating to failure to achieve Substantial Completion on time or for bonus payments for early completion of the Work.)

<< >>

**ARTICLE 4 CONTRACT SUM**

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be << >> (\$ << >> ), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

<< >>

§ 4.3 Unit prices, if any:

(Identify and state the unit price; state quantity limitations, if any, to which the unit price will be applicable.)

Item

Units and Limitations

Price Per Unit (\$0.00)

§ 4.4 Allowances included in the Contract Sum, if any:

(Identify allowance and state exclusions, if any, from the allowance price.)

Item

Price

**ARTICLE 5 PAYMENTS**

**§ 5.1 PROGRESS PAYMENTS**

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

<< >>

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the << >> day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the << >> day of the << >> month. If an Application for Payment is received by the Architect after the application date fixed above, payment shall be made by the Owner not later than << >> (<< >>) days after the Architect receives the Application for Payment. (Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be 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.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

- .1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of «Five» percent ( «5.00» %). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™–2007, General Conditions of the Contract for Construction;
- .2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of «Five» percent ( «5.00» %);
- .3 Subtract the aggregate of previous payments made by the Owner; and
- .4 Subtract amounts, if any, for which the Architect has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201–2007.

§ 5.1.7 The progress payment amount determined in accordance with Section 5.1.6 shall be further modified under the following circumstances:

- .1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Architect shall determine for incomplete Work, retainage applicable to such work and unsettled claims; and  
(Section 9.8.5 of AIA Document A201–2007 requires release of applicable retainage upon Substantial Completion of Work with consent of surety, if any.)
- .2 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 9.10.3 of AIA Document A201–2007.

§ 5.1.8 Reduction or limitation of retainage, if any, shall be as follows:

*(If it is intended, prior to Substantial Completion of the entire Work, to reduce or limit the retainage resulting from the percentages inserted in Sections 5.1.6.1 and 5.1.6.2 above, and this is not explained elsewhere in the Contract Documents, insert here provisions for such reduction or limitation.)*

« »

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

## § 5.2 FINAL PAYMENT

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 12.2.2 of AIA Document A201–2007, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

« »

**ARTICLE 6 DISPUTE RESOLUTION**

**§ 6.1 INITIAL DECISION MAKER**

The Architect will serve as Initial Decision Maker pursuant to Section 15.2 of AIA Document A201–2007, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker. *(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)*

<< >>  
<< >>  
<< >>  
<< >>

**§ 6.2 BINDING DISPUTE RESOLUTION**

For any Claim subject to, but not resolved by, mediation pursuant to Section 15.3 of AIA Document A201–2007, the method of binding dispute resolution shall be as follows: *(Check the appropriate box. If the Owner and Contractor do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.)*

- Arbitration pursuant to Section 15.4 of AIA Document A201–2007
- Litigation in a court of competent jurisdiction
- Other *(Specify)*
- << >>

**ARTICLE 7 TERMINATION OR SUSPENSION**

**§ 7.1** The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2007.

**§ 7.2** The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2007.

**ARTICLE 8 MISCELLANEOUS PROVISIONS**

**§ 8.1** Where reference is made in this Agreement to a provision of AIA Document A201–2007 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

**§ 8.2** Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

*(Insert rate of interest agreed upon, if any.)*

<< >> % << >>

**§ 8.3** The Owner’s representative:  
*(Name, address and other information)*

<< >>  
<< >>  
<< >>  
<< >>  
<< >>  
<< >>

**§ 8.4** The Contractor’s representative:  
*(Name, address and other information)*

<< >>  
<< >>  
<< >>  
<< >>  
<< >>  
<< >>

§ 8.5 Neither the Owner's nor the Contractor's representative shall be changed without ten days written notice to the other party.

§ 8.6 Other provisions:

<< >>

## ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 9.1.1 The Agreement is this executed AIA Document A101-2007, Standard Form of Agreement Between Owner and Contractor.

§ 9.1.2 The General Conditions are AIA Document A201-2007, General Conditions of the Contract for Construction.

§ 9.1.3 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

§ 9.1.4 The Specifications:

*(Either list the Specifications here or refer to an exhibit attached to this Agreement.)*

<< >>

Section	Title	Date	Pages

§ 9.1.5 The Drawings:

*(Either list the Drawings here or refer to an exhibit attached to this Agreement.)*

<< >>

Number	Title	Date

§ 9.1.6 The Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are also enumerated in this Article 9.

§ 9.1.7 Additional documents, if any, forming part of the Contract Documents:

- .1 AIA Document E201™-2007, Digital Data Protocol Exhibit, if completed by the parties, or the following:

<< >>

- 2 Other documents, if any, listed below:  
*(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201–2007 provides that bidding requirements such as advertisement or invitation to bid, Instructions to Bidders, sample forms and the Contractor’s bid are not part of the Contract Documents unless enumerated in this Agreement. They should be listed here only if intended to be part of the Contract Documents.)*

<< >>

**ARTICLE 10 INSURANCE AND BONDS**

The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 of AIA Document A201–2007.

*(State bonding requirements, if any, and limits of liability for insurance required in Article 11 of AIA Document A201–2007.)*

Type of insurance or bond	Limit of liability or bond amount (\$0.00)

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

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

<< >><> >>

\_\_\_\_\_  
*(Printed name and title)*

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

<< >><> >>

\_\_\_\_\_  
*(Printed name and title)*

# DRAFT AIA<sup>®</sup> Document G704<sup>™</sup> - 2000

## Certificate of Substantial Completion

**PROJECT:**  
(Name and address)  
"JIB" Property Waterfront Amenity  
Phase 1  
705 & 707 Shepard Street,  
Morehead City, NC

**TO OWNER:**  
(Name and address)  
Town of Morehead City  
706 Arendell Street  
Morehead City, NC 28557

**PROJECT NUMBER:** /  
**CONTRACT FOR:** General Construction  
**CONTRACT DATE:**

**TO CONTRACTOR:**  
(Name and address)

OWNER:   
ARCHITECT:   
CONTRACTOR:   
FIELD:   
OTHER:

### PROJECT OR PORTION OF THE PROJECT DESIGNATED FOR PARTIAL OCCUPANCY OR USE SHALL INCLUDE:

The Work performed under this Contract has been reviewed and found, to the Architect's best knowledge, information and belief, to be substantially complete. Substantial Completion is the stage in the progress of the Work when the Work or designated portion is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. The date of Substantial Completion of the Project or portion designated above is the date of issuance established by this Certificate, which is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below:

#### Warranty

#### Date of Commencement

MK CHALK ARCHITECTURE, PA

ARCHITECT

BY

DATE OF ISSUANCE

A list of items to be completed or corrected is attached hereto. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Unless otherwise agreed to in writing, the date of commencement of warranties for items on the attached list will be the date of issuance of the final Certificate of Payment or the date of final payment.

**Cost estimate of Work that is incomplete or defective:** \$0.00

The Contractor will complete or correct the Work on the list of items attached hereto within Zero (0) days from the above date of Substantial Completion.

CONTRACTOR

BY

DATE

The Owner accepts the Work or designated portion as substantially complete and will assume full possession at (time) on (date).

OWNER

BY

DATE

The responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance shall be as follows:

(Note: Owner's and Contractor's legal and insurance counsel should determine and review insurance requirements and coverage.)