

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

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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

April 15, 2014

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 II

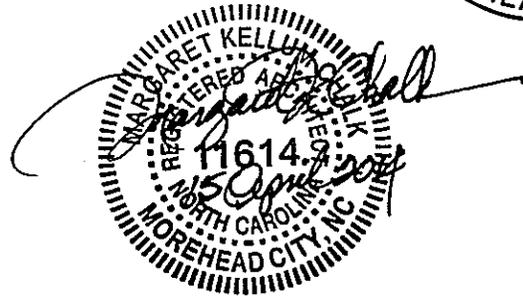
LOCATION: Town of Morehead City  
705 & 707 Shepard Street  
Morehead City, NC 28557

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

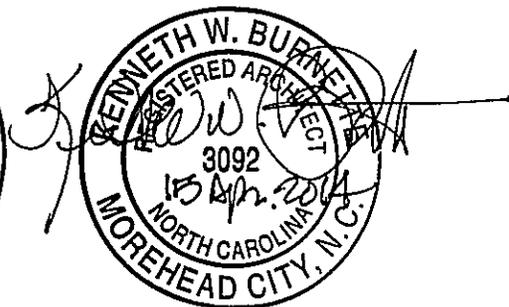
BIDDING REQUIREMENTS, CONDITIONS OF THE CONTRACT, BID FORMS &  
SPECIFICATIONS DIVISIONS 1 - 16

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



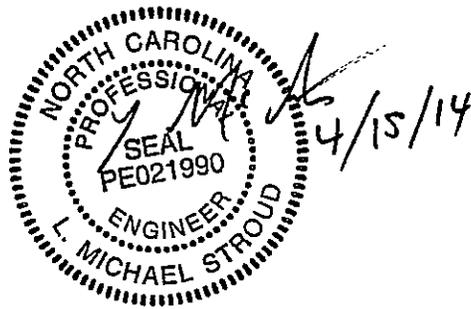
CIVIL ENGINEER & SURVEYING: McDavid Associates  
109 E. Walnut Street, PO Box 1776  
Goldsboro, NC 27566

(Not applicable to this phase)

MARINE & STRUCTURAL ENGINEER: Andrew Consulting Engineers  
3811 Peachtree Avenue, Suite 300  
Wilmington, NC 28403  
NC PE Firm License No. C-2461



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 on April 30, 2014, after which, sealed proposals will be received until 2:00 PM EST on April 30, 2014 at the first floor Conference Room, in the Municipal Building, 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 pavilion deck with restrooms approximately 6697 SF in size overlooking the Morehead City Channel of Bogue Sound and floating docks approximately 1072 SF in size. The project includes all decking, rails, lighting, electric power, plumbing, piles, framing, connections, and connectors as indicated on the drawings and in the specifications and as required for a complete and finished project.

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

Bidders are required to contact David McCabe, Public Works Director with questions or requests for information prior to April 23, 2014.

A mandatory Pre-bid Conference will be held at 10:00 AM EST, Thursday, April 17, 2014 in the first floor Conference Room of the Municipal Building. Bids will be accepted only from those contractors who attend the Pre-bid conference.

Complete plans, specifications and contract documents may be obtained at the following location:

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

**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 commensurate with the work being performed.

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

A Bid bond is required in an amount equal to no less than Five Percent (5%) of the proposal.

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

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This section not used

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Permits	Town of Morehead City, NC CAMA Modification/Major Permit No. 97-05, Issued: April 30, 2013, Expires: December 31, 2016
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 II»  
«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»

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### 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.

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## 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 Bid is to be submitted.

4.2.1 Delete subparagraph 4.2.1 and substitute the following:

4.2.1 A Bid Bond is not required for this project.

4.2.3 Add the words “payment and performance” before the word “bonds”.

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.

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 and substitute the following:

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<sup>®</sup> Document A201<sup>™</sup> - 2007

## General Conditions of the Contract for Construction

### for the following PROJECT:

(Name and location or address)

«"JIB" Property Waterfront Amenity Phase II»  
«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 »

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- 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.

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## **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**

1. 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.
2. See Section 00810 Supplementary General Conditions for additional modifications to AIA Document A201-2007.

**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.

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**NOTICE OF AWARD**

TO: Contractor

PROJECT Description: "JIB" Property Waterfront Amenity Phase II

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The OWNER has considered the BID submitted by you for the above described project in response to its Advertisement for Bids dated \_\_\_\_\_, 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 is abandoned. 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 \_\_\_\_\_ 2013.

Owner: Town of Morehead City, NC

\_\_\_\_\_  
By: David S. Whitlow  
Title: Town of Morehead City, City Manager

**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**

**GENERAL**

This section contains additional conditions, requirements, terms, and provisions of the contract.

**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

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.

**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 require more inclusive items or set out additional conditions, the Supplementary General Conditions shall take precedence.

**3. CONTRACTOR**

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.
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. 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.
  4. 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, connection charges, service extensions, tap fees impact fees or other charges.
  5. 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.
  6. 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.
  7. 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.
  8. 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.

#### 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. 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.

## 5. 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.

## 6. CHANGE IN THE WORK

The establishment of the cost or credit for changes in the work executed under the General Conditions 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%) of 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.

## 7. 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.

## 8. 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.

#### 9. TIME OF COMPLETION PENALTY

1. The contract price will be reduced in an amount equal to a prorated share of \$250 per day beginning one hundred twenty days (120 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.
2. 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.

#### 10. 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.

#### 11. 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.

#### 12. 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.

### 13. 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 Permit requirements 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 permit requirements.
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.

### 14. 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 contacted.
- (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.

15. The project will be constructed under the jurisdiction of CAMA Permit No. 97-05 (attached herein) and all construction and related activities shall strictly comply with the terms of the permit.

- A. The Contractor shall arrange a pre-construction meeting on the site with CAMA representatives, the Architect, and the Owner to review the terms and conditions of the permit and other requirements or pertinent information.
- B. The Contractor shall make every effort to avoid debris or other materials from falling or being blown into the water. If such occurs, the material shall be removed immediately.
- C. A copy of all drawings application, and supporting documents for the CAMA permit are available for review through the office of David McCabe, Public Works Director, Town of Morehead City, NC.

END OF SECTION 00810

**SECTION 00820**  
**DESCRIPTION OF BASE BID AND ALTERNATES**

I. Description of Base Bid

- A. The Base Bid shall include all work, materials, labor, permits, insurance, and other items required for construction including demolition as indicated on the plans and specifications (Project Manual), and as required to provide all work finished and complete. The Base Bid shall not include the restrooms (Alternate G-1) and the floating docks (Alternate G-2).
- B. The Base Bid shall also include all blocking, floor structure, electrical, and plumbing preparations, necessary to accommodate construction of the restrooms and floating docks.
- C. See Section 01010, Summary of Work.

II. Description of Bid Alternates

- A. The following alternates shall be included in the bid proposal:
  - 1. **Alternate G-1** – Provide all work and materials required to construct the restrooms as indicated on the drawings and specified herein, including flooring, walls, ceiling, louvers, roof, doors, hardware, toilet partitions and accessories, plumbing, ventilation, and electrical. The installation of all structural members and blocking in the floor framing required to accommodate the restroom construction shall be included in the base bid.
  - 2. **Alternate G-2** - Provide all work and materials required to construct and install the floating docks and platforms as indicated on the drawings and specified herein, including docks, floatation devices, ramp, access deck from Pavilion deck, cleats, hardware, wooden piles (dock outboard and mooring piles), plumbing and electrical. Preparatory work required for the Pavilion deck to be fitted and ready for the installation of the fixed dock platform and floating docks, including structural, plumbing and electrical connections shall be included in the base bid.

III. Pre-bid Conference

- A. A mandatory Pre-bid Conference will be held on Thursday, April 17, 2014 at 10:00 AM EST in the first floor Conference Room at Municipal Building, 202 South 8<sup>th</sup> Street, Morehead City, NC. All contractors desiring to submit a bid proposal are required to attend.

END OF SECTION 00820

**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 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. Pavilion Deck approximately 6697 SF in size including open deck, restrooms, ramp, and stairs, located south of the existing concrete bulkhead fronting onto the Morehead Channel of Bogue Sound. Construction will consist of treated wood decking, rails, and structure, supported on concrete and timber piles with corrosion resistant fasteners and connectors as indicated, with aluminum and wood railing components as indicated.
2. Floating docks and platforms approximately 1072 SF located immediately south of the new Pavilion deck, consisting of a fixed platform, ramps and landings, floating docks, wood piles (inboard and outboard) and electrical and plumbing connections and fixtures.
3. See Section 00820, Description of Base Bid and Alternates.

D. A CAMA permit (97-05) for the project has been obtained by the owner. A copy of the permit is attached herein. The contractor shall comply with all provisions and terms of the permit and shall accept responsibility for violations, if any, that may occur during construction.

E. 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 Conditions with Amendments 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.

Unit Prices: See Section 01025 "Unit Prices" for a description of unit prices which are to be submitted with the bid.

Bid Alternates: See Section 00820 "Description of Base Bid and Alternates" for a description of alternates which are to be submitted with this bid.

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, 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:**

**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 Concrete Piles**

Precast, Prestressed Concrete Piling – Complete in place, including all costs, mobilization, overhead, profit, etc.:

<u>Base Bid</u>	<u>Length</u>	<u>Total</u>
14x14 Piling:	65 ft. each	<b>Unit Price (\$)</b> _____ <u>/ea.</u> \$ _____
12x12 Piling:	45 ft. each	<b>Unit Price (\$)</b> _____ <u>/ea.</u> \$ _____

Adjusted piling length information dependent upon results of the PDA testing:



**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. Submit the following:
  - 1. Certification, signed by the Contractor's retained field engineer or surveyor, indicating finish floor deck elevations and, 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, or decking 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.
- 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 SCHEDULE OF UNIT PRICES**

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

**1.2 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.

**1.3 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 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.

**1.4 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 01220  
ALLOWANCES**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Designate in Pay Requests and Schedule of Values separate item for cost allowances.

**1.2 ALLOWANCES FOR PRODUCTS/MATERIALS**

- A. The Contractor shall include the following allowance in the Base Bid:
  - 1. Door Hardware: \$1800.00
- B. Purchase product/material under allowance only as directed by A/E.
- C. Amount of allowance includes:
  - 1. Net cost of product.
  - 2. Delivery to the site.
  - 3. Applicable taxes.
- D. In addition to amount of allowance, include in Base Bid, for inclusion in Contract Sum, Contractor's costs for:
  - 1. Handling at site including unloading, uncrating and storage.
  - 2. Protection from elements, from damage.
  - 3. Labor, installation, and finishing.
  - 4. Other expenses (e.g., testing, adjusting, and balancing) required to complete installation.
  - 5. Overhead and profit.

**1.3 SELECTION OF PRODUCT/MATERIAL**

- A. Architect Duties
  - 1. Consult with Contractor in consideration of product/material and suppliers.
  - 2. Make selection, designate product/material to be used.
  - 3. Notify Contractor in writing, designating:
    - a) Product, size, color, and texture.
    - b) Supplier
- B. Contractor's Duties
  - 1. Assist Architect in determining qualified suppliers.
  - 2. Obtain proposals from suppliers when requested by Architect
  - 3. Make appropriate recommendations for consideration by Architect

4. Notify Architect in writing, of effect anticipated by selection of product or supplier under consideration on:
  - a) Construction Schedule.
  - b) Contract Sum.
5. On notification on selection enter into purchase agreement with designated supplier.
6. Arrange for delivery and unloading.
7. Promptly inspect product for damage or defects.
8. Submit claims for transportation damage.

#### 1.5 ADJUSTMENT OF CASH ALLOWANCES

- A. Unused amounts of monies included under allowances shall be credited to the Owner by deduct change order prior to approval of Final Application for Payment.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION 01220

**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 the 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 ten (10) 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 and as provided in the Quality Assurance Plan on drawing S-100.
  2. The testing service and its representatives do not have the authority to authorize work or changes in the work. The Owner will not be financially responsible for work performed without the Owners approval.
  3. Minimum standard time for advanced notification of a required Special Inspections is one business day. Requests for weekend SI will be handled on a case by case basis.
  4. Items to be Special Inspected must be complete at the requested time of inspection. Waiting time will be recorded and the Owner will back charge the contractor for this wait time. Elements that fail inspection and are therefore required to be re-inspected will also be recorded in order for the Owner to back charge the contractor for the time spent during re-inspection. Time is portal to portal. Also included is time spent preparing reports, discrepancy notices, and discrepancy notice resolutions as well as administration time spent reviewing items related to discrepancy notices and preparing monthly reports relating to re-inspection fees. Any time spent observing holes that must be drilled and bars epoxied into place due to the misplacement of reinforcing or any other post-installed anchors in concrete or masonry will be back charged to the contractor as well. The fees will be billed at the standard hourly rates.
  5. Special Inspection does not take the place or supersede customary building inspections by local code enforcement officials.

- 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.
- E. 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 OWNER RESPONSIBILITY

- A. The Owner shall provide an independent testing and inspection agency (agent of Special Inspector) that will coordinate their services through the Engineer of Record (Special Inspector of Record) to observe installation of the items listed in the Quality Assurance Plan on drawing S-100 and to provide independent testing as deemed desirable by the owner, in addition to testing and inspections provided by the contractor. See the associated material specifications for additional information.

## 1.3 CONTRACTOR RESPONSIBILITY

- A. The contractor is required to submit a Statement of Contractor Responsibility.
- B. Testing and inspections provided by the owner do not negate, alleviate, or reduce the contractors responsibility to provide testing and inspections.
- C. 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.

- D. 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.
- E. Coordination: Scheduling of times for inspections, tests, taking of samples, and similar activities is Contractor's responsibility.
- F. 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 unless otherwise indicated.
- G. Test procedures to be used shall be submitted for approval of the Architect where other than those specified are recommended by the testing agency.
- H. 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.

#### 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 COOPERATION WITH TESTING LABORATORY

- A. Representatives of the Owner's 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.

#### 1.6 QUALIFICATION OF LABORATORY

- A. Independent testing agency provided by the contractor 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 selection of the testing agency shall be approved by the owner.

#### 1.7 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.

## 1.8 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 Owner's 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.

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 II**

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: Concrete Piling

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 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. (Contractors option).
  - 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 if needed 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.

## 2.2 FIELD OFFICES AND SHEDS

### A. Contractor's facilities: (Optional)

1. Provide a field office building and storage facilities adequate in size and accommodation for Contractor's offices, supply and storage.

### 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. Not required.

**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 and at completion, 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.
- C. The contractor acknowledges that construction is over environmentally sensitive waters and agrees to keep debris, sawdust, oils, or other products or byproducts of construction away from and out of the water.

### 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.
  - 6. Immediately remove any debris or materials that may fall into the water.

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 as applicable, with pocket folders for folded sheet information. Mark identification on front and spine of each binder. Include the following as applicable:
  - 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 (if applicable).
  6. Instruct Owner in operation of equipment (if applicable).
  7. Submit all extra stock and spare parts, where required, in quantities indicated.
  8. Submit list of final finish and materials selections (if applicable).
  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 (if applicable).
  19. Complete startup testing of systems and instruction of operation and maintenance personnel (if applicable).
  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. 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 consent of surety to final payment.
  
- D. 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. Clean the site. Sweep paved areas; remove stains, spills, and foreign deposits.

END OF SECTION 01700

**SECTION 02100  
FLOATING PIERS & GANGWAYS**

General:

The work covered by this section consists of furnishing and installing the prefabricated floating piers, ramps, fenders, cleats, and other marine hardware as shown on the drawings. Docks shall be of standard commercial design as manufactured by Sound Marine, Bellingham Marine, Tide Tamer Industries, Snow Hill, NC, or Engineer approved equal. Where the terms "pier", or "dock" are used, they are intended to mean the same.

Design:

Floating docks shall be designed in accordance with ASCE report No. 50 "Small Craft Harbors" 1969, and 2012 N.C. State Building Code.

1) FLOTATION

- A) The flotation module will be high density, high molecular weight one piece, and no seam virgin polyethylene with carbon 2 UV ray inhibitors. Each encasement will contain a one-way waterproof membrane valve for venting.
- B) The mounting flange thickness shall be .375 solid, continuous and uniform.
- C) All fastener contact points are to be closed.
- D) The standard wall thickness shall be .150".
- E) The foam core shall be expanded polystyrene with a minimum density of 1.0 lbs PCF.
  - ACE / EPA compliant.

2) FLOTATION FASTENERS

- A) 1-3/4" x 3/8" # 304 stainless steel lag bolts with 6 to 8 contact points per flotation module.
  - 400 lb resistance per contact point

3) INTERIOR FRAME COMPONENTS

- A) All interior stringers, bridge members, cross members, and diagonal bracing shall be pressure treated Southern Yellow Pine Select # 2 or better with no defects to compromise the structural integrity of system.

- B) All interior frame components will be pressure treated in accordance with AWPA standards set forth for salt-water splash. All treatment levels will exceed retentions for their intended use.

#### 4) EXTERIOR FRAME COMPONENTS

- A) All mechanically laminated structural beams shall be Southern Yellow Pine Grade # 1 or better. These external framing components shall be selected for strength and visual appearance. All exposed edges will be re-milled for uniformity and mitered at termination points.
- B) All mechanically laminated structural beams will contain three (3) members thick with a standard offset of 30%. All members will be surfaced four (4) sides with re-milled ends.

#### 5) INTERNAL STEEL COMPONENTS

- A) All structural 3" x 3" x 1/4" angles, 3" x 5" x 1/4" angles, and 5" x 8" x 1/4" angles, internal diaphragm components and interconnections will be fabricated from ASTM-A-36 grade steel.
- B) All internal steel components will be hot dip galvanized in accordance with the specifications as set forth in ASTM-A-123-00 2 or ASTM-A-153 as applicable.

#### 6) EXTERIOR STEEL COMPONENTS

- A) All 6" x 6" x 3/8" angles and 12" x 6" x 1/4" angles will be fabricated from ASTM-A-36 grade steel.
- B) All exterior steel components will be hot dip galvanized in accordance with the specifications as set forth in ASTM-A-123-00 2 or ASTM-A-153 as applicable.

#### 7) DOCK HARDWARE AND FASTENERS

- A) All bolts, nuts, and washers shall be manufactured in accordance with the specifications as set forth in ASTM-A-307.
- B) All bolts, nuts, and washers shall be designed to exceed specific loads for their structural connections (Grade # 2 and Grade # 5).
- C) All bolts, nuts, and washers will be hot dip galvanized in accordance with the specifications set forth in ASTM-A-153.
- D) All cleats shall be malleable cast iron, manufactured in accordance with the specifications as set forth in ASTM-A-47. These components will be thru bolted with HD galvanized steel reinforcement angles built into the framework.

- E) All screw fasteners shall be # 300 series stainless steel designed to exceed specific loads for their structural connections.

#### 8) PILING GUIDES

- A) All piling guides will be designed to appropriately receive a site specific anchoring system either internal or external with one or more of the following:

#### 9) DECKING

- A) All decking (SYP) will be of high quality with eased edges and re-milled ends.
- B) All decking will be pre-drilled with countersink prior to installation.

#### 10) UTILITIES CHASE

- A) All main walkways will be designed to accommodate site-required utilities. Split utilities chase(s) will be lined with a UV ray resistant monofilament geotextile fabric, fastened with # 300 series stainless steel fasteners.

The Floating Dock System and all of its structural members are designed and constructed to safely accommodate all anticipated loads. This specification is predicated on the principle that the loading assumed in the design represents actual conditions. All NC Building Codes must be met or exceeded.

#### 1) LIVE LOADS

Floating Piers, Docks, Fingers – 50 PSF or 400 pounds concentrated load on any 2 feet square. The dock shall have not more than six degrees tilt from the horizontal under a uniform live load of one-half of the pier width or under concentrated load of 600 pounds applied to one side.

#### 2) DEAD LOADS

The weight of the component parts of the structure as well as ramps, dock boxes, utilities, boarding steps and other applicable dock accessories are used in the design of the dock system. (Buoyancy Compensation)

- A) Flotation will be designed to support the dead load plus 50 PSF live load applied to the entire area of the deck surface (9” minimum).
- B) Under dead loads, floating docks will have a minimum of the following:

- 18 inches of freeboard with 16-inch flotation

### 3) WIND LOADS

All dock structures and parts thereof shall be designed to withstand wind forces as specified by the American Society of Civil Engineers ASCE 7-10 for North Carolina wind velocities. Wind pressures shall be assumed to act normal to all the surfaces considered. No component shall be designed for less than 40 PSF.

### 4) IMPACT LOADS

Chapter 16 of the North Carolina s building codes shall apply. Assuming live loads which induce unusual impact and lateral loading, the assumed kinetic energy exerted by a striking vessel at 15° off centerline, at normal accepted marina velocity of 3 FPS / 2.5 KT.

## STANDARDS

- 1) Southern Pine Council (SPC)
- 2) American Wood Preservers Association (AWPA)
- 3) Southern Pressure Treaters Association (SPTA)
- 4) American Society of Testing Materials (ASTM)
- 5) North Carolina Building Code - 2012
- 6) International Building Code, 2009 Edition

Drawings: The Contractor shall submit complete drawings sealed by a Professional Engineer for approval showing shop details of docks, dock connections, fastening to piles, ramps, handrails, etc. before fabrication. Design calculations shall be provided.

## GANGWAY SPECIFICATIONS

### 1. SCOPE OF WORK

1.1 Provide prefabricated Aluminum Gangway(s) as shown on the plans. The following specifications shall be regarded as minimum standards for the design and construction.

### 2. Quality Assurance

2.1 Manufacturer should have a minimum of \$2,000,000.00 of products completed liability insurance.

2.2 Design of the aluminum members shall conform to the current edition of The Aluminum Association Specifications and Guide for Aluminum Structures.

2.3 Aluminum welding shall be in accordance with the ANSI/AWS D1.2 gas metal arc welding process and shall be performed by experienced operators.

2.4 All exposed surfaces and their welded joints shall be smooth and free of sharp or jagged edges.

### 3. Materials

3.1 Aluminum extrusions for gangways structures shall be aluminum alloy 6061-T6, and 6063-T6 and shall be extruded in accordance with the requirements of applicable sections of Federal Specifications QQ-A-200.

3.2 Stainless Steel Fasteners shall be grade 304.

3.3 Rollers used at the end of the gangway shall be MDS Nylon.

### 4. Engineering

#### 4.1 Uniform Live Load selection

- A. Gangways 4 feet wide and less shall be designed for a uniform live load of 50 pounds per square foot.
- B. Gangways over 4 feet wide shall be designed for a uniform live load of 85 pounds per square foot.

4.2 Maximum deflection of structure shall be calculated using  $L/180$  where “L” is the length of the gangway in inches.

4.3 Decking material shall be designed for a concentrated vertical load of 300 pounds distributed over a one square foot area. Handrails shall be designed for a horizontal load of 20 pounds per linear foot.

### 5.0. DESIGN

5.1 Hinged end of gangway shall be designed by the manufacturer to adapt to existing mounting surface.

5.2 Top Rail shall extend a minimum of 12” past the walking surface of gangway.

- A. Top rail shall extend past upper (hinge) end of gangway
- B. Top rail shall extend past lower (roller) end of gangway
- C. Top rail shall extend past both ends of gangway

#### 5.3 Top Rail Selection

- A. Handrail Shaped profile with .125 inch min. radius edges.
- B. Round schedule 40 pipe. (Size of pipe is dependent upon length and width of gangway.)

#### 5.4 Continuous Safety Guard Rails

- A. Continuous vertical 1.00 inch O.D. round tube pickets with a maximum clear opening of 6 inches.

5.5 Deck Material Selection

A Decking material shall be 1.10 inch x 12 inches, self-mating, extruded aluminum with a minimum coefficient of friction of 0.93.

6. ACCESSORIES SELECTION

6.1 Aluminum transition plate on roller end of gangway 0.25 inch thick x 48 inches wide x 24 inches long with slip resistant surface.

6.2 Continuous handrail shaped grab rails 34 inches from finished deck surface.

6.3 Continuous kick plate shall be 0.25 inch x 3 inch aluminum flat bar along the edge of the walking surface on the inside of the railing.

6.4 Exit Ramp min. length of 30" in length, including hinge mechanism, with integrated wear strip at the end.

Payment:

For all work in this section including anchor assemblies, piling ramps, gangways, ramp supports and all work necessary for a completed dock as shown shall be included in the Lump Sum price shown in the Bid form, Alternate G-2.

End of Section 02100

**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.

- C. Precast, Prestressed Concrete Piling – Complete in place, including all costs, mobilization, overhead, profit, etc.:

Base Bid	Length	Unit Price	Total
14x14 Piling:	65 ft. each	\$____/ea	\$____
12x12 Piling:	45 ft. each	\$____/ea	\$____

Adjusted piling length information dependent upon results of the PDA testing:

Add/Deduct:	Length	Unit Price
14x14 Piling:	70 ft. each	\$____/ea
14x14 Piling:	60 ft. each	\$____/ea
14x14 Piling:	55 ft. each	\$____/ea
14x14 Piling:	50 ft. each	\$____/ea
12x12 Piling:	50 ft. each	\$____/ea
12x12 Piling:	40 ft. each	\$____/ea
12x12 Piling:	35 ft. each	\$____/ea
12x12 Piling:	30 ft. each	\$____/ea

Contractor costs for pile load tests (Owner responsible for hiring pile load testing agency):

PDA test for 14x14 (base bid is 4 tests)	\$____/ea	\$____
PDA test for 12x12 (base bid is 4 tests)	\$____/ea	\$____.

#### 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 for 14" x 14" piles: 65 kips vertical, 10 kips uplift, and 10 kips lateral.
  2. Design Loads for 12" x 12" piles: 30 kips vertical, 10 kips uplift, and 6 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 manufacturer 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: Including but not limited to as built locations, plumbness, compliance with dimension tolerances, elevation of tip of pile, load bearing capacity, vertical elevation of top of pile, etc. 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, or installer with minimum of five years' experience in driving and installation of concrete piling of similar lengths and embedment in similar conditions.
- 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: Manufacturer or contractor shall engage a qualified independent testing agency to evaluate pile manufacturer's quality-control and testing methods.
  - 1. Additionally, 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. (See Section 1400 Quality Control regarding payment for testing).

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

- 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 PDA PILE TESTS

- A. General: PDA pile tests will be used to verify driving criteria and pile lengths and to confirm allowable load of piles.
  1. Furnish test piles 120 inches longer than production piles.
  2. Determination of actual length of piles will be based on results of PDA pile tests.
- B. Pile Tests: Arrange and perform the following pile tests:
  1. Pile Driving Analyzer (PDA) using the Case Method and CAPWAP signal matching program in accordance with ASTM D 4945.
- C. Notify Engineer and SI Agent at least 48 hours in advance of installing test piles.
  1. Number of Test Piles: As indicated.
- D. Driving Test Piles: Drive test piles at locations indicated to the minimum penetration or driving resistance indicated. Use test piles identical to those required for Project and drive with appropriate pile-driving equipment operating at rated driving energy to be used in driving permanent piles.
  1. Pile Design Load: As indicated.
- E. Approval Criteria: Allowable load shall be determined by the PDA testing.
- F. Test Pile-Driving Records: Prepare driving records for each test pile, compiled and attested to by the Owner's qualified professional engineer working for the SI Agent. Include same data as required for driving records of permanent piles.
- G. Test piles that comply with requirements, including location tolerances, may be used on Project.

### 3.4 INSTALLING PILES

- A. General: Continuously 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.

### 3.5 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:
  1. Pile foundations.
- B. Tests and Inspections: The Owner will provide an inspector on the site during the installation of the piles. The inspector is to work under the direct supervision of a Registered Professional Engineer who specializes in soil mechanics and foundation engineering. The selection of this Professional Engineer will be made by the Engineer. The charges made by the Professional Engineer will be paid by the Owner. Piles shall not be installed without the approval of the inspector. The inspector will report to the Owner and Engineer on the installation in writing. The inspectors will keep a record of each pile driven. The records shall give the section, lengths, location, type, total depth of penetration, blows per foot, net penetration for the last five blows, kind and size of hammer used in driving, air or steam pressure used in driving, cutoff elevation of pile head, and results of any test.
- C. Prior to Driving: Before the starting of pile driving operations, the Contractor shall submit in triplicate, for approval, complete detail drawings showing clearly the designation of all piles by an identifying system. Also, the Contractor shall furnish a written statement describing the driving equipment he proposes to use and obtain approval from the Engineer before work is started.
- D. 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.
- E. Pile Locations: The elevation and the location of the head of each pile shall be determined by the Contractor's Registered Land Surveyor immediately after driving, and again when all piles have been driven. This data shall be presented in a plan view format with the orthogonal dimensions between the as-built location and the design

location provided for each pile for review. The as-built data shall be sealed by the surveyor and reviewed by the contractor prior to being presented. In addition to the sealed hard copy plan view, an AutoCAD compatible as-built file shall also be provided with the as-built location of the pile drawn to scale overlaying the design location. The pile numbering shall match the numbering provided on the construction documents. The Owner's representative shall keep a record of the elevations and locations obtained as required and shall furnish to the Owner and Engineer signed typewritten or legibly handwritten copies.

- F. Inspection by Contractor: During the pile driving operations and before the pile driving equipment is removed from the job site, the Contractor shall determine if all piles are installed as shown by plan location. Failure to do so may require the subsequent return of pile driving equipment to the project site to drive additional piles at no cost to the Owner.

### 3.6 DISPOSAL

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

END OF SECTION 02360

**SECTION 02370  
TIMBER 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 round timber piles.
- B. Related Sections:
  - 1. Division 06 Section "Exterior Rough Carpentry" for dimension lumber framing and for bracing.

**1.3 UNIT PRICES**

- A. General: See Division 01 Section "Unit Prices" for piles affected by unit prices.
- B. The Contract Sum: Base the Contract Sum on number and dimensions of piles indicated from tip to cutoff, plus not less than 12 inches of overlength for cutting piles at cutoff elevations.
- C. 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 Engineer 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 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For timber piles. Show fabrication and installation details for piles, including details of driving shoes, tips or boots, and pile butt protection.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer.
- B. Round timber pile treatment data as follows, including chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material:
  - 1. For each type of preservative-treated timber product include certification by treating plant stating type of preservative solution and pressure process used, net amount of preservative retained, and compliance with applicable standards.
  - 2. For waterborne-treated products include statement that moisture content of treated materials was reduced to levels indicated before shipment to Project site.
- C. 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.
- D. Pile-Driving Records: Submit within three days of driving each pile.
- E. Field quality-control reports.
- F. Warranty of chemical treatment manufacturer for each type of treatment.
- G. Preconstruction Photographs: Photographs or video of existing conditions of adjacent construction. Submit before the Work begins.

#### 1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
  - 1. Owner's responsibility includes engaging a qualified professional engineer to prepare pile-driving records.
- B. Testing Agency Qualifications: Qualified according to ASTM E 329 for testing indicated.
- C. Preinstallation Conference: Conduct conference at Project site.

## 1.7 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 breaks, cuts, abrasions, or other physical damage and as required by AWPA M4.
  - 1. Do not drill holes or drive spikes or nails into pile below cutoff elevation.

## 1.8 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 included 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 TIMBER PILES

- A. Round Timber Piles: ASTM D 25, unused, clean peeled, one piece from butt to tip; of the following species and size basis:
  - 1. Species: Southern yellow pine.
  - 2. Size Basis: 12" Minimum Butt Diameter Class B and natural taper.
- B. Pressure-treat round timber piles to meet Use Category UC5B according to AWPA U1 as follows:
  - 1. Service Condition: Marine piles.
  - 2. Treatment: Waterborne preservative, severe marine borer hazard.

### 2.2 PILE ACCESSORIES

- A. Driving Shoes (if determined to be required or if desired by Contractor): Fabricate from ASTM A 1011/A 1011M, hot-rolled carbon-steel strip to suit pile-tip diameter, of the following type and thickness, and secure to pile tip so as to not affect pile alignment during driving:
  - 1. Type: Arrow point.
  - 2. Thickness: 3/16 inch.

## 2.3 FABRICATION

- A. Pile Tips: Cut and shape pile tips to accept driving shoes. Fit and fasten driving shoes to pile tips according to manufacturer's written instructions.
- B. Pile Butt: Trim pile butt and cut perpendicular to longitudinal axis of pile. Chamfer and shape butt to fit tightly to driving cap of hammer.
- C. Field-Applied Wood Preservative: Treat field cuts, holes, and other penetrations according to AWWPA M4.
- D. Pile Splices: Splices will not be permitted.
- E. Pile-Length Markings: Mark each pile with horizontal lines at 12-inch intervals. Maintain markings on piles until driven.

## 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.
- 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 driving.

- B. Spudding: Drive spud piles through overlying highly resistant strata or obstructions and withdraw for reuse.
- C. Predrilling: Provide pre-excavated holes if deemed to be required by SI Agent and Engineer, to depths to be determined. Drill holes with a diameter less than the largest cross-section dimension of pile.
  - 1. Firmly seat pile in predrilled hole by driving with reduced energy before starting final driving.
- D. 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.
- E. Installation Tolerances: Drive 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.
- F. 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 as directed by Engineer.
- G. Cutting Off: Not permitted.
- H. Field Cuts and Notches: Cover field cuts and notches to piling surfaces with minimum three coats of preservative treatment according to AWPA M4.
- I. Pile-Driving Records: Maintain accurate driving records for each pile, to be observed, compiled and attested to by the Owner's SI Agent qualified professional engineer. Include the following data:
  - 1. Project name and number.
  - 2. Name of Contractor.
  - 3. Pile species.
  - 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.
- B. Tests and Inspections: The Owner will provide an inspector on the site during the installation of the piles. The inspector is to work under the direct supervision of a Registered Professional Engineer who specializes in soil mechanics and foundation engineering. The charges made by the Professional Engineer will be paid by the Owner. Piles shall not be installed without the approval of the inspector. The inspector will report to the Owner and Engineer on the installation in writing. The inspectors will keep a record of each pile driven. The records shall give the section, lengths, location, type, total depth of penetration, blows per foot, net penetration for the last five blows, kind and size of hammer used in driving, air or steam pressure used in driving, cutoff elevation of pile head, and results of any test.
- C. Prior to Driving: Before the starting of pile driving operations, the Contractor shall submit in triplicate, for approval, complete detail drawings showing clearly the designation of all piles by an identifying system. Also, the Contractor shall furnish a written statement describing the driving equipment he proposes to use and obtain approval from the Engineer before work is started.
- D. Pile Locations: The elevation and the location of the head of each pile shall be determined by the Contractor's Registered Land Surveyor immediately after driving, and again when all piles have been driven. This data shall be presented in a plan view format with the orthogonal dimensions between the as-built location and the design location provided for each pile for review. The as-built data shall be sealed by the surveyor and reviewed by the contractor prior to being presented. In addition to the sealed hard copy plan view, an AutoCAD compatible as-built file shall also be provided with the as-built location of the pile drawn to scale overlaying the design location. The pile numbering shall match the numbering provided on the construction documents. The Owner's representative shall keep a record of the elevations and locations obtained as required and shall furnish to the Owner and Engineer signed typewritten or legibly handwritten copies.

- E. Inspection by Contractor: During the pile driving operations and before the pile driving equipment is removed from the job site, the Contractor shall determine if all piles are installed as shown by plan location. Failure to do so may require the subsequent return of pile driving equipment to the project site to drive additional piles at no cost to the Owner.

### 3.5 DISPOSAL

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

### PART 4 - BASIS OF PAYMENT

The contract will be based on the assumption that all piles will be driven as detailed and established on foundation plan sheets.

END OF SECTION 02370

**SECTION 05500  
MISCELLANEOUS METAL**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

- A. Work included: Provide miscellaneous metal work shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- B. Related Work:
  - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary General Conditions, and Sections in Division 1 of these Specifications.

**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.
- B. Perform shop and/or field welding required in connection with work of this Section in strict accordance with pertinent recommendations of the American Welding Society.

**1.3 SUBMITTALS**

- A. Comply with pertinent provisions of Section 01340.
- B. Product data: Within 15 calendar days after the contractor has received the Owner's Notice to Proceed, submit:
  - 1. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
  - 2. Shop drawings in sufficient detail to show fabrication, installation, anchorage, and interface of the work of this Section with the work of adjacent trades.

**1.4 PRODUCT HANDLING**

- A. Comply with pertinent provisions of Section 01620.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. All metal fabrications shall be stainless steel, Type 316.
- B. In fabricating items which will be exposed to view, limit materials to those which are free from surface blemishes, pitting, rolled trade names, and roughness.
- C. Comply with following standards, as pertinent:
  - 1. Steel plates, shapes, and bars: ASTM A36.
  - 2. Steel plates to be bent or cold-formed: ASTM A283, Grade C.
  - 3. Steel tubing Not used.
  - 4. Steel bars and bar-size shapes: ASTM A306, Grade 65, or ASTM A36.
  - 5. Cold-finished steel bars: ASTM A108.
  - 6. Cold-rolled carbon steel sheets: Not used.
  - 7. Galvanized carbon steel sheets: Not used.
  - 8. Stainless steel sheets: AISI type 316, 24 gauge, with number 4 finish.
  - 9. Gray iron castings: Not used.
  - 10. Malleable iron castings: Not used.
  - 11. Steel pipe: Not used.
  - 12. Concrete inserts:
    - a. Threaded or wedge type .
    - b. Provide required bolts, shims, and washers, stainless steel, Type 316.

### 2.2 FASTENERS

- A. General:
  - 1. For exterior use and where built into exterior assemblies, provide stainless steel fasteners.
  - 2. Provide fasteners of type, grade, and class required for the particular use.
- B. Comply with the following standards, as pertinent:
  - 1. Bolts and nuts: Provide hexagon-head regular type complying with ASTM A307, Grade A stainless steel.
  - 2. Lag bolts: Provide square-head type stainless steel.
  - 3. Machine screw: Provide stainless steel type.
  - 4. Washers:
    - a. Plain washers: Round stainless steel.
    - b. Lock washers: Helical spring type stainless steel.
  - 5. Toggle bolts: Provide type, class, and style needed.
  - 6. Anchorage devices: Provide expansion shields as appropriate.

## 2.3 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.

## 2.4 FABRICATION

- A. Except as otherwise shown on the drawings or the approved shop drawings, use materials of size, thickness, and type required to produce reasonable strength and durability in the work of this Section.
- B. Fabricate with accurate angles and surfaces which are true to the required lines and levels, grinding exposed welds smooth and flush, forming exposed connections with hairline joints, and using concealed fasteners wherever possible.

## 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 COORDINATION

- A. Coordinate as required with other trades to assure proper and adequate interface with the work of this Section.

### 3.3 INSTALLATION

- A. General:
  - 1. Set work accurately into position, plumb, level, true, and free from rack.
  - 2. Anchor firmly into position.
  - 3. Where field welding is required, comply with AWS recommended procedures of manual-shielded metal-arc welding for appearance and quality of weld and for welding to be performed by a certified welder whose certification shall be on file at the job site.

END OF SECTION 05500

## SECTION 06100 - 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. Framing with dimension lumber.
2. Framing with timber.
3. Framing with engineered wood products.
4. Wood blocking, cants, and nailers.
5. Wood furring.
6. Wood sleepers.

- B. Related Requirements:

1. Section 06106 "Exterior Rough Carpentry" for elevated decks and other exterior construction made of wood.
2. Section 06132 "Heavy Timber Framing."
3. Section 06160 "Sheathing."

#### 1.3 DEFINITIONS

- A. Exposed Framing: Framing not concealed by other construction.
- B. Dimension Lumber: Lumber of 2 inches nominal (38 mm actual) or greater but less than 5 inches nominal (114 mm actual) in least dimension.
- C. Timber: Lumber of 5 inches nominal (114 mm actual) 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 each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
3. Include copies of warranties from chemical treatment manufacturers for each type of treatment.

B. Fastener Patterns: Full-size templates for fasteners in exposed framing.

## 1.5 INFORMATIONAL SUBMITTALS

A. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.

B. Evaluation Reports: For the following, from ICC-ES:

1. Wood-preservative-treated wood.
2. Engineered wood products.
3. Shear panels.
4. Expansion anchors.
5. Metal framing anchors.

## 1.6 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber flat with spacers beneath and between each bundle to provide air circulation. Protect lumber from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

## PART 2 - PRODUCTS

### 2.1 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece.
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 lumber.
4. Provide dressed lumber, S4S, unless otherwise indicated.

B. Maximum Moisture Content of Lumber: 19 percent unless otherwise indicated.

- C. Engineered Wood Products: Provide engineered wood products acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.
  - 1. Allowable Design Stresses: Provide engineered wood products with allowable design stresses, as published by manufacturer, that meet or exceed those indicated. 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.

## 2.2 WOOD-PRESERVATIVE-TREATED LUMBER

- A. Preservative Treatment by Pressure Process: AWWPA U1; Use Category UC3b for exterior construction not in contact with the ground.
  - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
  - 2. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
  - 1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece.
- D. Application: Treat all rough carpentry unless otherwise indicated.

## 2.3 DIMENSION LUMBER FRAMING

- A. Non-Load-Bearing Interior Partitions: No. 2 grade.
  - 1. Application: All interior partitions.
  - 2. Species:
    - a. Mixed southern pine; SPIB.
    - b. Spruce-pine-fir; NLGA.
    - c. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.
- B. Load-Bearing Partitions: No. 2 grade.
  - 1. Application: Exterior walls and interior load-bearing partitions.
  - 2. Species:
    - a. Southern pine; SPIB.
- C. Ceiling Joists: No. 2 grade.

1. Species:
    - a. Southern pine; SPIB.
- D. Joists, Rafters, and Other Framing Not Listed Above: No. 2 grade.
1. Species:
    - a. Southern pine; SPIB.
- E. Exposed Framing: Provide material hand-selected for uniformity of appearance and freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot-holes, shake, splits, torn grain, and wane.
1. Application: Exposed exterior and interior framing
  2. Species and Grade: As indicated above for load-bearing construction of same type.

## 2.4 TIMBER FRAMING

- A. Provide timber framing complying with the following requirements, according to grading rules of grading agency indicated:
1. Species and Grade: Southern pine; No. 2 grade; SPIB.
  2. Maximum Moisture Content: 19 percent.
  3. Additional Restriction: Free of heart centers.

## 2.5 ENGINEERED WOOD PRODUCTS

- A. Engineered Wood Products, General: Products shall contain no urea formaldehyde.
- B. Source Limitations: Obtain each type of engineered wood product from single source from a single manufacturer.
- C. Parallel-Strand Lumber: Structural composite lumber made from wood strand elements with grain primarily parallel to member lengths, evaluated and monitored according to ASTM D 5456 and manufactured with an exterior-type adhesive complying with ASTM D 2559.
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. Louisiana-Pacific Corporation.
    - b. Weyerhaeuser Company.
  2. Extreme Fiber Stress in Bending, Edgewise: 2900 psi (20 MPa) for 12-inch nominal- (286-mm actual-) depth members.
  3. Modulus of Elasticity, Edgewise: 2,200,000 psi (15 100 MPa).

## 2.6 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
  - 1. Blocking.
  - 2. Nailers.
  - 3. Cants.
  - 4. Furring.
- B. For items of dimension lumber size, provide No. 2 grade lumber and the following species:
  - 1. Mixed southern pine; SPIB.
  - 2. Spruce-pine-fir; NLGA.
  - 3. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.
- C. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.
- D. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

## 2.7 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
  - 1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners of Type 304 stainless steel.
- B. Nails, Brads, and Staples: ASTM F 1667.
- C. Wood Screws: ASME B18.6.1.
- D. Lag Bolts: ASME B18.2.1 (ASME B18.2.3.8M).
- E. Bolts: Steel bolts complying with Type 304 stainless steel hex nuts and, where indicated, flat washers.
- F. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry 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.
  - 1. Material: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2 (ASTM F 738M and ASTM F 836M, Grade A1 or A4).

## 2.8 METAL FRAMING ANCHORS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
  - 1. Cleveland Steel Specialty Co.
  - 2. KC Metals Products, Inc.
  - 3. Phoenix Metal Products, Inc.
  - 4. Simpson Strong-Tie Co., Inc.
  - 5. USP Structural Connectors.
- C. Allowable Design Loads: Provide products with allowable design loads, as published by manufacturer, that meet or exceed those indicated of basis-of-design products. 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. Stainless-Steel Sheet: ASTM A 666, Type 316.
  - 1. Use for all locations and where indicated.
- E. Joist Hangers: see drawings.
- F. Post Bases: see drawings.
- G. Joist Ties: see drawings.
- H. Rafter Tie-Downs (Hurricane or Seismic Ties): see drawings.

## 2.9 MISCELLANEOUS MATERIALS

- A. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, pliable, butyl rubber or rubberized-asphalt compound, as appropriate, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than 0.025 inch (0.6 mm).

## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.

- B. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- C. Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.
- D. Install plywood backing panels by fastening to studs; coordinate locations with utilities requiring backing panels.
- E. Metal Framing Anchors: Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.
- F. Install sill sealer gasket to form continuous seal between sill plates and foundation walls.
- G. Do not splice structural members between supports unless otherwise indicated.
- H. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
  - 1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches (406 mm) o.c.
- I. 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.
- J. Comply with AWWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
  - 1. Use copper naphthenate for items not continuously protected from liquid water.
- K. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
  - 1. NES NER-272 for power-driven fasteners.
  - 2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
  - 3. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.
- L. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.
- M. For exposed work, arrange fasteners in straight rows parallel with edges of members, with fasteners evenly spaced, and with adjacent rows staggered.
  - 1. Comply with indicated fastener patterns where applicable. Before fastening, mark fastener locations, using a template made of sheet metal, plastic, or cardboard.

2. Use common nails unless otherwise indicated. Drive nails snug but do not countersink nail heads.

### 3.2 WOOD FURRING INSTALLATION

- A. Install level and plumb with closure strips at edges and openings. Shim with wood as required for tolerance of finish work.
- B. Furring to Receive Plywood or Hardboard Paneling: Install 1-by-3-inch nominal size furring horizontally or vertically as needed, at 24 inches o.c.
- C. Furring to Receive Gypsum Board Install 1-by-2-inch nominal- size furring horizontally or vertically as needed, at 16 inches o.c.

### 3.3 WALL AND PARTITION FRAMING INSTALLATION

- A. General: Provide single bottom plate and double top plates using members of 2-inch nominal (38-mm actual) thickness whose widths equal that of studs, except single top plate may be used for non-load-bearing partitions. Fasten plates to supporting construction unless otherwise indicated.
  1. For exterior walls, provide 2-by-6-inch nominal- (38-by-140-mm actual-) size wood studs spaced 16 inches o.c. unless otherwise indicated.
  2. For interior partitions and walls, provide 2-by-4-inch nominal- (38-by-89-mm actual-) size wood studs spaced 24 inches (610 mm) o.c. unless otherwise indicated.
  3. Provide continuous horizontal blocking at midheight of partitions more than 96 inches (2438 mm) high, using members of 2-inch nominal (38-mm actual) thickness and of same width as wall or partitions.
- B. Construct corners and intersections with three or more studs, except that two studs may be used for interior non-load-bearing partitions.
- C. Frame openings with multiple studs and headers. Provide nailed header members of thickness equal to width of studs. Support headers on jamb studs.
  1. For walls, provide double-jamb studs for openings 60 inches (1500 mm) and less in width, and triple-jamb studs for wider openings. Provide headers of depth indicated[ or, if not indicated, according to Table R502.5(1) or Table R502.5(2), as applicable, in ICC's International Residential Code for One- and Two-Family Dwellings].

### 3.4 FLOOR JOIST FRAMING INSTALLATION

- A. General: Install floor joists with crown edge up and support ends of each member with not less than 1-1/2 inches (38 mm) of bearing on wood or metal. Attach floor joists as follows:
  1. Where supported on wood members, by using metal framing anchors.
  2. Where framed into wood supporting members by using metal joist hangers.
- B. Frame openings with headers and trimmers supported by metal joist hangers; double headers and trimmers where span of header exceeds 48 inches (1200 mm).

- C. Do not notch in middle third of joists; limit notches to one-sixth depth of joist, one-third at ends. Do not bore holes larger than 1/3 depth of joist; do not locate closer than 2 inches (50 mm) from top or bottom.
- D. Provide solid blocking of 2-inch nominal (38-mm actual) thickness by depth of joist at ends of joists unless nailed to header or band.
- E. Lap members framing from opposite sides of beams, girders, or partitions not less than 12 inches or securely tie opposing members together. Provide solid blocking of 2-inch nominal (38-mm actual) thickness by depth of joist over supports.
- F. Provide solid blocking between joists under jamb studs for openings.
- G. Under non-load-bearing partitions, provide double joists separated by solid blocking equal to depth of studs above.
- H. Provide bridging of type indicated below, at intervals of 96 inches (2438 mm) o.c., between joists.
  - 1. Diagonal wood bridging formed from bevel-cut, 1-by-3-inch nominal- (19-by-64-mm actual-) size lumber, double-crossed and nailed at both ends to joists.

### 3.5 CEILING JOIST AND RAFTER FRAMING INSTALLATION

- A. Ceiling Joists: Install ceiling joists with crown edge up and complying with requirements specified above for floor joists. Face nail to ends of parallel rafters.
- B. Rafters: Notch to fit exterior wall plates and use metal framing anchors. Double rafters to form headers and trimmers at openings in roof framing, if any, and support with metal hangers. Where rafters abut at ridge, place directly opposite each other and nail to ridge member or use metal ridge hangers.
  - 1. At valleys, provide double-valley rafters of size indicated or, if not indicated, of same thickness as regular rafters and 2 inches (50 mm) deeper. Bevel ends of jack rafters for full bearing against valley rafters.
  - 2. At hips, provide hip rafter of size indicated or, if not indicated, of same thickness as regular rafters and 2 inches (50 mm) deeper. Bevel ends of jack rafters for full bearing against hip rafter.
- C. Provide collar beams (ties) as indicated or, if not indicated, provide 1-by-6-inch nominal- (19-by-140-mm actual-) size boards between every third pair of rafters, but not more than 48 inches (1219 mm) o.c. Locate below ridge member, at third point of rafter span. Cut ends to fit roof slope and nail to rafters.
- D. Provide special framing as indicated for eaves, overhangs, dormers, and similar conditions if any.

### 3.6 TIMBER FRAMING INSTALLATION

- A. Install timber with crown edge up and provide not less than 4 inches (102 mm) of bearing on supports. Provide continuous members unless otherwise indicated; tie together over supports as indicated if not continuous.
- B. Where beams or girders are framed into pockets of exterior concrete or masonry walls, provide 1/2-inch (13-mm) air space at sides and ends of wood members.
- C. Install wood posts using metal anchors indicated.
- D. Treat ends of timber beams and posts exposed to weather by dipping in water-repellent preservative for 15 minutes.

### 3.7 STAIR FRAMING INSTALLATION

- A. Provide stair framing members of size, space, and configuration indicated or, if not indicated, to comply with the following requirements:
  - 1. Size: 4-by-12-inch nominal- size, minimum.
  - 2. Material: solid lumber.
  - 3. Notching: Notch rough carriages to receive treads, risers, and supports; leave at least 3-1/2 inches (89 mm) of effective depth.
  - 4. Spacing: At least three framing members for each 24-inch clear width of stair.
- B. Provide stair framing with no more than 3/16-inch (4.7-mm) variation between adjacent treads and risers and no more than 3/8-inch (9.5-mm) variation between largest and smallest treads and risers within each flight.

### 3.8 PROTECTION

- A. Protect rough carpentry from weather.

END OF SECTION 061000

**SECTION 06106**  
**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.

## 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: Select No. 2 grade and the following species:
  - 1. Southern Yellow 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, Select No. 2, SPIB.

## 2.4 TIMBER

- A. Maximum Moisture Content: 19 percent.
- B. Dressing: Provide dressed timber (S4S) or timber that is rough sawn (Rough) unless otherwise indicated.
- C. Timber Posts: Southern pine; No. 2, SPIB, Use Category 4B.
- D. Timber Stringers: Southern pine; No. 2, SPIB, Use Category 4B.
- E. Timber Splitcaps: Southern pine; No. 2, SPIB, Rough, Use Category 4B.
- F. Timber Cross Braces: Southern pine; Marine No. 1, SPIB, Rough or S2E, Use Category 5B.

## 2.5 PRESERVATIVE TREATMENT

- A. Pressure treat boards and dimension lumber with waterborne preservative according to AWPA C24.
- 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. Not Used.
- 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. All fasteners are grade 316 stainless steel 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. Stainless-Steel Bolts: ASTM F 593, Alloy Group 1 or 2; with ASTM F 594, Alloy Group 1 or 2 heavy hex nuts and, where indicated, flat washers. Type 316
- 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. Type 316.

## 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. Stainless-Steel Sheet: ASTM A 666, Type 316.

## 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: 4 by 16 inches nominal, minimum.
  - 2. Notching: Notch stringers to receive treads, risers, and supports; leave at least 6-1/2 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 061063

**SECTION 06132**  
**HEAVY TIMBER FRAMING**

**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 framing using timbers and round wood poles.
- B. Related Requirements:
  - 1. Section 06100 "Rough Carpentry" for dimension lumber items associated with heavy timber framing.

**1.3 DEFINITIONS**

- A. Timbers: Lumber of 5 inches nominal or greater in least dimension.
- B. Poles: Round wood members, called either "poles" or "posts" in the referenced standards.
- C. Inspection agencies, and the abbreviations used to reference them, include the following:
  - 1. SPIB: Southern Pine Inspection Bureau.

**1.4 ACTION SUBMITTALS**

- A. Product Data: For preservative-treated wood products and timber connectors.
  - 1. For preservative-treated wood products. Include chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.
  - 2. For timber connectors. Include installation instructions.
- B. Samples: Not less than 5 inches (127 mm) by 24 inches (600 mm) long, showing the range of variation to be expected in appearance, including surface texture, of wood products.

## 1.5 INFORMATIONAL SUBMITTALS

### A. Material Certificates:

1. For timbers 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 timber not marked with grade stamp.

## 1.6 DELIVERY, STORAGE, AND HANDLING

### A. Schedule delivery of materials to avoid extended on-site storage and to avoid delaying the Work.

### B. Store materials under cover and protected from weather and contact with damp or wet surfaces. Provide for air circulation within and around stacks and under temporary coverings.

## PART 2 - PRODUCTS

### 2.1 TIMBER

#### A. Comply with DOC PS 20 and with grading rules of lumber-grading agencies certified by ALSC's Board of Review as applicable.

1. Factory mark each item of timber with grade stamp of grading agency.
2. For exposed timber indicated to receive a stained or natural finish, apply grade stamps to surfaces that are not exposed to view, or omit grade stamps and provide certificates of grade compliance issued by grading agency.

#### B. Timber Species and Grade: southern pine, No. 2, SPIB.

#### C. Moisture Content: Provide timber with 19 percent maximum moisture content at time of dressing or provide timber that is unseasoned at time of dressing but with 19 percent maximum moisture content at time of installation.

#### D. Dressing: Provide dressed timber (S4S) or timber that is rough sawn (Rough) unless otherwise indicated.

## 2.2 ROUND WOOD POLES

- A. Round Wood Poles: Clean-peeled wood poles complying with ASTM D 3200; with at least 80 percent of inner bark removed and with knots and limbs cut flush with the surface.
- B. Species: southern pine, No. 2, SPIB.

## 2.3 PRESERVATIVE TREATMENT

- A. Pressure treat materials with waterborne preservative according to AWWA U1; Use Category UC3b for exterior construction not in contact with the ground.
- B. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
  - 1. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not contain colorants, bleed through, or otherwise adversely affect finishes.
- C. Use process that includes water-repellent treatment.
- D. Use process that does not include water repellents or other substances that might interfere with application of indicated finishes.
- E. After treatment, redry materials to 19 percent maximum moisture content.
- F. Mark treated materials with treatment quality mark of an inspection agency approved by ALSC's Board of Review.
  - 1. For exposed items indicated to receive a stained or natural finish, mark each piece on surface that is not exposed or omit marking and provide certificates of treatment compliance issued by inspection agency.
- G. Application: Treat all heavy timber framing unless otherwise indicated.

## 2.4 TIMBER CONNECTORS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. 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. Halfen Anchoring Systems.

3. Simpson Strong-Tie Company, Inc.
  4. USP Structural Connectors.
- C. Fabricate beam seats from stainless steel, Type 316.
  - D. Fabricate beam hangers from stainless steel, Type 316
  - E. Fabricate strap ties from stainless steel, Type 316
  - F. Provide stainless-steel bolts, Type 316 1 inch (19 mm) unless otherwise indicated, complying with ASTM F 593, Alloy Group 1 or 2 (ASTM F 738M, Grade A1 or A4); provide nuts complying with ASTM F 594, Alloy Group 1 or 2 (ASTM F 836M, Grade A1 or A4); and, where indicated, provide flat washers.
  - G. Provide shear plates complying with ASTM D 5933.
  - H. Materials: Unless otherwise indicated, fabricate from the following materials:
    1. Stainless-steel plate and flat bars complying with ASTM A 666, Type 316.
    2. Stainless-steel bars and shapes complying with ASTM A 276, Type 316.
    3. Stainless-steel sheet complying with ASTM A 666, Type 316.
  - I. For items not stainless steel hot-dip galvanize steel assemblies and fasteners after fabrication to comply with ASTM A 123/A 123M or ASTM A 153/A 153M.

## 2.5 MISCELLANEOUS MATERIALS

- A. Penetrating Sealer: Manufacturer's standard, transparent, penetrating wood sealer that is compatible with indicated finish.
- B. Low-Emitting Materials: Sealers shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

## 2.6 FABRICATION

- A. Camber: Fabricate horizontal members and inclined members with a slope of less than 1:1, with natural convex bow (crown) up, to provide camber.
- B. Shop fabricate members by cutting and restoring exposed surfaces to match specified surfacing. Finish exposed surfaces to remove planing or surfacing marks, and to provide a finish equivalent to that produced by machine sanding with No. 120 grit sandpaper.
- C. Predrill for fasteners and assembly of units.

- D. Where preservative-treated members are indicated, fabricate (cut, drill, surface, and sand) before treatment to greatest extent possible. Where fabrication must be done after treatment, apply a field-treatment preservative to comply with AWWA M4.
  - 1. Use copper naphthenate treatment for members in contact with the ground or not continuously protected from liquid water.
- E. Coat crosscuts with end sealer.
- F. Seal Coat: After fabricating and surfacing each unit, apply a saturation coat of penetrating sealer on surfaces of each unit except for treated wood where the treatment included a water repellent.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. General: Erect heavy timber framing true and plumb. Provide temporary bracing to maintain lines and levels until permanent supporting members are in place.
  - 1. Install horizontal and sloping members with crown edge up, and provide not less than 4 inches (102 mm) of bearing on supports. Provide continuous members unless otherwise indicated; tie together over supports with metal strap ties if not continuous.
  - 2. Handle and temporarily support heavy timber framing to prevent surface damage, compression, and other effects that might interfere with indicated finish.
- B. Cutting: Avoid extra cutting after fabrication. Where field fitting is unavoidable, comply with requirements for shop fabrication.
- C. Install timber connectors as indicated.
  - 1. Unless otherwise indicated, install bolts with same orientation within each connection and in similar connections.
  - 2. Install bolts with orientation as indicated or, if not indicated, as directed by Architect.

### 3.2 ADJUSTING

- A. Repair damaged surfaces and finishes after completing erection. Replace damaged heavy timber framing if repairs are not approved by Architect.

END OF SECTION 06132

SECTION 06150  
WOOD DECKING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Solid-sawn floor decking.

B. Related Sections:

1. Section 06100 "Rough Carpentry" for dimension lumber items associated with wood decking.
2. Section 06106 "Exterior Rough Carpentry" for wood decking for elevated decks.

1.2 ACTION SUBMITTALS

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

1.3 QUALITY ASSURANCE

- A. Standard for Solid-Sawn Wood Decking: Comply with AITC 112.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Schedule delivery of wood decking to avoid extended on-site storage and to avoid delaying the Work.

PART 2 - PRODUCTS

2.1 WOOD DECKING, GENERAL

- A. General: Comply with DOC PS 20 and with applicable grading rules of inspection agencies certified by ALSC's Board of Review.
- B. Moisture Content: Provide wood decking with 19 percent maximum moisture content at time of dressing.

## 2.2 SOLID-SAWN WOOD DECKING

- A. Decking Species: Southern pine.
- B. Decking Nominal Size: 2x8.
- C. Decking Grade: Select Decking. Southern Pine, No. 2, SPIB.
- D. Grade Stamps: Factory mark each item with grade stamp of grading agency. Apply grade stamp to surfaces that will not be exposed to view.
- E. Face Surface and Edge Pattern: Smooth face, Rounded edge.

## 2.3 ACCESSORY MATERIALS

- A. Fastener Material: Stainless steel, Type 316.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Install solid-sawn wood decking to comply with referenced decking standard.
  - 1. Locate end joints for two-span continuous lay-up.

END OF SECTION 06150

## **SECTION 06160 SHEATHING**

### **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. Wall sheathing.
  - 2. Roof sheathing.
- B. Related Requirements:
  - 1. Section 06100 "Rough Carpentry".

#### **1.3 ACTION SUBMITTALS**

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
  - 1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated plywood complies with requirements. Indicate type of preservative used and net amount of preservative retained.
  - 2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
  - 3. Include copies of warranties from chemical treatment manufacturers for each type of treatment.

#### **1.4 INFORMATIONAL SUBMITTALS**

- A. Evaluation Reports: For following products, from ICC-ES:
  - 1. Preservative-treated plywood.

## 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Stack panels flat with spacers beneath and between each bundle to provide air circulation. Protect sheathing from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

## PART 2 - PRODUCTS

### 2.1 WOOD PANEL PRODUCTS

- A. Emissions: Products shall meet the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- B. Plywood: DOC PS 1.
- C. Oriented Strand Board: DOC PS 2.
- D. Thickness: As needed to comply with requirements specified, but not less than thickness indicated.
- E. Factory mark panels to indicate compliance with applicable standard.

### 2.2 PRESERVATIVE-TREATED PLYWOOD

- A. Preservative Treatment by Pressure Process: AWWPA U1; Use Category UC3b for exterior construction not in contact with the ground. See Evaluations for information about treatment chemicals.
  - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
- B. Mark plywood with appropriate classification marking of an inspection agency acceptable to authorities having jurisdiction.
- C. Application: Treat all plywood unless otherwise indicated.

### 2.3 WALL SHEATHING

- A. Plywood Wall Sheathing: Exposure 1, Structural I sheathing.
  - 1. Nominal Thickness: Not less than 15/32 inch.
- B. Cementitious Backer Units: ASTM C 1325, Type A.

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. C-Cure; C-Cure Board 990.
  - b. Custom Building Products; Wonderboard.
  - c. FinPan, Inc.; Util-A-Crete Concrete Backer Board.
  - d. USG Corporation; DUROCK Cement Board.
2. Thickness: 1/2 inch (12.7 mm).

## 2.4 ROOF SHEATHING

- A. Plywood Roof Sheathing: Exposure 1, Structural I sheathing.
  1. Nominal Thickness: 5/8 inch.

## 2.5 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
  1. For roof and wall sheathing, provide fasteners of Type 316 stainless steel.
- B. Nails, Brads, and Staples: ASTM F 1667.
- C. Power-Driven Fasteners: NES NER-272.
- D. Wood Screws: ASME B18.6.1.

## 2.6 MISCELLANEOUS MATERIALS

- A. Adhesives for Field Gluing Panels to Framing: Formulation complying with APA AFG-01, ASTM D 3498 that is approved for use with type of construction panel indicated by manufacturers of both adhesives and panels.
  1. Adhesives shall have a VOC content of 70 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
  2. Adhesives shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement. Arrange joints so that pieces do not span between fewer than three support members.
- B. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction unless otherwise indicated.
- C. Securely attach to substrate by fastening as indicated, complying with the following:
  - 1. NES NER-272 for power-driven fasteners.
  - 2. Table 2304.9.1, "Fastening Schedule," in ICC's "International Building Code."
- D. 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 or will receive finish materials. Make tight connections. Install fasteners without splitting wood.
- E. Coordinate wall and roof sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.
- F. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.
- G. Coordinate sheathing installation with installation of materials installed over sheathing so sheathing is not exposed to precipitation or left exposed at end of the workday when rain is forecast.

### 3.2 WOOD STRUCTURAL PANEL INSTALLATION

- A. General: Comply with applicable recommendations in APA Form No. E30, "Engineered Wood Construction Guide," for types of structural-use panels and applications indicated.
- B. Fastening Methods: Fasten panels as indicated below:
  - 1. Wall and Roof Sheathing:
    - a. Nail to wood framing.
    - b. Space panels 1/8 inch apart at edges and ends.

### 3.3 CEMENTITIOUS BACKER UNIT INSTALLATION

- A. Install panels and treat joints according to ANSI A108.11 and manufacturer's written instructions for type of application indicated.

END OF SECTION 06160

**SECTION 06200  
FINISH CARPENTRY**

PART 1 - GENERAL (Not Applicable)

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Lumber Standards: DOC PS 20 and grading rules of inspection agencies certified by American Lumber Standards Committee Board of Review.
- B. Softwood Plywood: DOC PS 1.
- C. Hardwood Plywood: HPVA HP-1.

2.2 STANDING AND RUNNING TRIM

- A. Exterior Lumber Trim: Smooth-textured. Grade A. eastern white cedar.
- B. Interior Preservative Treated Trim, Interior Louvers, and Interior Doors: No. 1 Preservative treated Southern Pine.

2.3 SIDING

- A. See Section 07460 Wood Siding

2.4 MISCELLANEOUS MATERIALS

- A. Fasteners for Exterior Finish Carpentry: Stainless-steel., Type 316.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Condition finish carpentry in installation areas for 24 hours before installing.
- B. Prime and back prime lumber for stained finish exposed on the exterior.
- C. Install finish carpentry level, plumb, true, and aligned with adjacent materials. Scribe and cut to fit adjoining work. Refinish and seal cuts.
- D. Install standing and running trim with minimum number of joints practical, using full length pieces from maximum lengths of lumber available. Stagger joints in adjacent and related trim. Cope at returns and miter at corners.
- E. Nail siding at each stud. Seal joints at inside and outside corners and at trim locations.

END OF SECTION 06200

**SECTION 07210  
BUILDING INSULATION**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

- A. Work included: Provide building insulation where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

**1.2 QUALITY ASSURANCE**

- A. Upon completion of this portion of the Work, complete and post a certificate of insulation compliance in accordance with requirements of the State of North Carolina.

**1.3 PRODUCT HANDLING**

- A. Comply with pertinent provisions of Section 01620.

**PART 2 - RODUCTS**

**2.1 MATERIALS**

- A. Provide building insulation where shown on the Drawings or otherwise needed to achieve the degree of insulation required under pertinent regulations of governmental agencies having jurisdiction.
- B.
  - 1. R-19 Fiberglass Batts, 2X6, one hour fire rated walls as indicated on plans (restroom walls with entry doors).
  - 2. Insulation shall be as manufactured by Owens/Corning Fiberglass, Manville, Certainteed or approved equal.

**2.2 OTHER MATERIALS**

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

## PART 3 - EXECUTION

### 3.1 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.
- B. Remove, or protect against, projections in construction framing which may damage or prevent proper insulation.

### 3.2 INSTALLATION

- A. Install the work of this Section in strict accordance with the contract drawings, requirements of North Carolina Building Code, and the manufacturer's recommended installation procedures as approved by the Architect. Anchoring all components firmly into position, and protect from rain and snow.

END OF SECTION 07210

## SECTION 07460 WOOD SIDING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

Section 07600 - Flashing and Sheet Metal

Section 07951 - Sealants and Caulking

Section 09900 - Painting

#### 1.2 DESCRIPTION OF WORK

- A. The work of this Section includes furnishing and installing lumber siding and all related work required for a proper and weather-tight installation.

#### 1.3 QUALITY ASSURANCE

- A. This specification sets minimum standards for materials and workmanship. Manufacturer's bonding requirements or governing building codes shall apply where they impose higher standards.
- B. Submit samples of siding showing textures finishes and colors from manufacturers standard product line for approval by the Architect.

#### 1.4 PROJECT / SITE CONDITIONS

- A. Keep lumber siding clean and unmarked. Keep siding dry and under cover.

### PART 2 - PRODUCTS

#### 2.1 WOOD SIDING & TRIM

- A. Provide eastern white cedar shake siding as manufactured by MAIBEC or approved equal
1. Grade A clear, premium free from knots, splits or blemishes.
  2. 6" exposure
  3. 5/8" butt minimum
  4. Factory pre-stained and back primed, B17915-1193-IOP, Nantucket,, 2 coats, Maibec Taupe
  5. Matching corner boards and trim, sizes as per drawings.
  6. 30# building paper over plywood sheathing.
- B. Approved Manufacturers
1. Maibec
  2. Waska
  3. Dow

C. Exterior trim shall be 3/4" or 5/4" cedar, to match siding

## 2.2 NAILS

A. Exterior stainless steel blunt tip ring shank nails of sufficient length to penetrate 1-1/2" into wood beyond siding. Do not use diamond tip nail to avoid splitting the siding.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

A. Install exterior lumber siding over one layer of 30# felt paper. Provide laps and fastening as recommended by the manufacturer for 135 MPH wind zone. Do not overdrive nails to avoid cupping and splitting of the siding, and avoid hammer-marks. All butt joints and ends shall fall over studs or blocking. Apply flashing over doors and windows for proper drainage.

### 3.2 CLEANING

A. Clean lumber siding of all marks and soiling. Replace any siding with permanent marks or soiling. Protect siding from any materials which may cause marks or stain, and any other potential construction damage to the siding including impact damage.

### 3.3 FINISHING

A. Exterior siding and trim shall be factory pre-stained with final finish. Touch up at completion as recommended by the manufacturer.

END OF SECTION

**SECTION 07610**  
**SHEET METAL ROOFING**

**PART 1 GENERAL**

**1.1 SECTION INCLUDES**

- A. Metal roofing, including flashing and accessories.

**1.2 RELATED SECTIONS**

- A. Section 07620 - Sheet Metal Flashing and Trim.
- B. Section 07920 - Joint Sealers.

**1.3 REFERENCES**

- A. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2001a.
- B. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2001.
- C. ASTM E 283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 1991 (Reapproved 1999).
- D. ASTM E 331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference; 2000.
- E. ASTM E 408/C - 1371: "Standard Test Method for Total Normal Emittance of Surfaces Using inspection - Meter Techniques.
- F. ASTM E 903/C - 1549: Standard Test Method for Solar Absorbance, using Integrating Spheres.
- G. ASTM E 1646 - Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference; 1995.
- H. ASTM E 1680 - Standard Test Method for Rate of Air Leakage Through Exterior Metal Roof Panel Systems; 1995.
- I. Dade County County (Florida) Acceptance Report Numbers: 01-1106-01 and 01-1106-02.
- J. FM - Tests Requirements for Class 1 Panel roofs, Factory Mutual Research

Corporation.

- K. UL 580 - Standard for Tests for Uplift Resistance of Roof Assemblies; 1994.
- L. UL2218: Class 4 Impact Resistance Rating.
- M. SMACNA (ASMM) - Architectural Sheet Metal Manual; Sheet Metal and Air Conditioning Contractors National Association; 1993.

#### 1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
- C. Shop Drawings: Submit shop drawings showing layout, profiles and product components, including anchorage, accessories, finish colors and textures.
- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.
- F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
- G. Operation and Maintenance Data: Include methods for maintaining installed products and precautions relating to cleaning materials and methods that might be detrimental to finishes and performance.
- H. Close Out: Warranty documents specified herein.

#### 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Installer with documented experience in performing work of this section who has specialized in the installation of work similar to that required for this project.
- B. Pre-Installation Meeting: Conduct pre-installation meeting to acquaint installers of roofing and related work with project requirements, substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging with identification labels intact until ready for installation.
- B. Store materials protected from exposure to harmful conditions. Store material in dry, above ground location.
  - 1. Stack pre-finished material to prevent twisting, bending, abrasion, scratching and denting. Elevate one end of each skid to allow for moisture to run off.
  - 2. Prevent contact with material that may cause corrosion, discoloration or staining.
  - 3. Do not expose to direct sunlight or extreme heat trim material with factory applied strippable film.

## 1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

## 1.8 WARRANTY

- A. Manufacturer's Warranty: Provide manufacturer's standard warranty document executed by authorized company official covering finish, including color, fade, chalking and film integrity.
- B. Warranty Period: 30 years commencing on Date of Substantial Completion.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Coastal Metal Service, Goldsboro, NC, or approved equal.
- B. Requests for substitutions will be considered in accordance with provisions of Section 01340.

### 2.2 SHEET METAL ROOFING

- A. General: Factory fabricated panels; panels fabricated on site using portable roll former are prohibited.
  - 1. Performance Requirements: Provide sheet metal roofing that has been manufactured, fabricated and installed to achieve the following performance without defects, damage, failure or infiltration of water.
    - a. Wind Uplift: Provide UL 580 Class 90 rated assembly.
    - b. FM: Test Requirements for Class 1 panel roofs.
    - c. Static Air Infiltration: 0.06 cu ft/min/sq ft (1.1 cu m/h/sq m) at

- 6.24 lb/sq ft (300 Pa) air pressure differential, maximum, when tested in accordance with ASTM E 283 or ASTM E 1680.
  - d. Water Infiltration: No evidence of water penetration at inward static air pressure differential of 12.0 lb/sq ft (575 kPa), when tested in accordance with ASTM E 331 or ASTM E 1646.
  - e. Thermal Movement: Accommodate movement expected due to ambient and surface temperature ranges likely to occur at project site.
2. Panel Lengths: As indicated on drawings; panels 55 feet (16.76 m) and less fabricated in one continuous length.
  3. Texture: Smooth texture, dull matte specular gloss 25 to 35 percent at 60 degrees F (15.5 degrees C).
  4. Finish: Factory applied KYNAR finish:
    - a. Topside: Full-strength fluoropolymer, 70 percent Kynar 500 or Hylar resin, 1.0 mil (0.025 mm) total dry film thickness.
    - b. Underside: Wash coat of 0.3 to 0.4 mil (0.076 to 0.1 mm) dry film thickness.
    - c. Color: As selected by Architect from manufacturer's standard colors.
  5. Panel Fasteners: Non-penetrating type, as required to achieve wind uplift rating or otherwise as recommended by manufacturer.
- B. Roof Panels: EZ-LOC Panel with standing seam construction..
1. 1 3/4" standing seam.
  2. Material: 0.032 inch (0.8 mm) aluminum, ASTM B 209 3105-H14 alloy.
  3. Panel Width: 16 inch (406 mm), center to center, striated.

## 2.3 ACCESSORY MATERIALS

- A. Underlayment: ASTM D 226, Type II No. 30 asphalt saturated organic roofing felt.
- B. Plywood Deck: 5/8 inch (16 mm) nominal thickness; as specified in Section 06100.
- C. Sealant: Elastomeric.
- D. Bituminous Coating: Cold-applied asphaltic mastic, free of asbestos fibers, sulfur, and other harmful impurities.
- E. Touch-Up Paint: Approved by panel manufacturer.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify that substrates are acceptable for roofing installation in accordance with manufacturer's instructions.

- B. Do not begin installation until substrates have been properly prepared.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

### 3.2 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Coordinate metal roofing with other work, including but not limited to drainage, flashing and trim, deck substrates, parapets, copings, walls, and other adjoining work.
- C. Install metal roofing panels to profiles, patterns and drainage indicated, in accordance with manufacturer's instructions, and as necessary to achieve specified performance and a leak-free Installation. Allow for structural and thermal movement.
- D. Separate dissimilar metals using bituminous coating to prevent galvanic action.
- E. Use fasteners recommended by panel manufacturer; conceal fasteners wherever possible; cover and seal exposed fasteners.
- F. Provide uniform, neat seams; provide sealant-type joint where indicated and form joints to conceal sealant.

### 3.3 FIELD QUALITY CONTROL

- A. Post Installation Testing: Owner reserves right to perform post installation testing of installed sheet metal roofing.
- B. Manufacturer's Field Services: Upon Owner's request, provide manufacturer's field service consisting of product use recommendations and periodic site visit for inspection of product installation in accordance with

manufacturer's instructions.

#### 3.4 CLEANING

- A. Remove temporary coverings and protection of adjacent work areas.
- B. Touch-up, repair or replace damaged products.
- C. Clean in accordance with manufacturer's instructions prior to Substantial Completion.
- D. Remove construction debris from project site and legally dispose of debris.

#### 3.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 07610

**SECTION 07620  
FLASHING AND SHEET METAL**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this Section.
- B. Related work:
  - 1. Section 07920 – Joint Sealants

**1.2 DESCRIPTION OF WORK**

- A. Extend of each type of flashing and sheet metal work is indicated on drawings and by provisions of this Section.
- B. Types of work specified in this Section include the followings:
  - 1. Metal counter flashing; and base flashing.
  - 2. Exposed metal trim.
  - 3. Miscellaneous sheet metal accessories.

**1.3 QUALITY ASSURANCE**

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

**1.4 SUBMITTALS**

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

## 1.5 JOB CONDITIONS

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

## 1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Materials furnished by this Section which are to be built-in by other trades shall be delivered to the site in time to avoid delays in construction schedule.

## PART 2 - PRODUCTS

### 2.1 FLASHING AND SHEET METAL MATERIALS

- A. Exposed sheet metal flashing/trim: 16 oz. Copper
- B. Concealed sheet metal flashing: 10 oz. Copper

### 2.2 MISCELLANEOUS MATERIALS AND ACCESSORIES

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

required for proper performance.

- F. Roofing Cement: ASTM D 4856.

## 2.3 FABRICATED UNITS

- A. General Metal Fabrication: Shop-fabricate work to greatest extent possible. Comply with details shown, and with applicable requirements of SMACNA "Architectural Sheet Metal Manual" and other recognized industry practices. Fabricate for waterproof and weather-resistant performance; with expansion provisions for running work, sufficient to permanently prevent leakage, damage, deterioration of the work. Form work to fit substrates. Comply with material manufacturer's instructions and recommendations for forming material. Form exposed sheet metal work without excessive oil-canning, buckling, and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.
- B. Seams: Fabricate non moving seams in sheet metal with flat-lock seams. Edges shall be seamed and soldered. Rivet joints for additional strength where required.
- C. Expansion Provisions: Where lapped or bayonet-type expansion provisions cannot be used, or would not be sufficiently water/weatherproof, form expansion joints of intermeshing hooked flanges, not less than 1" deep, filled with mastic sealant concealed within joints.
- D. Sealant Joints: Where movable, non-expansion type joints are indicated or required for proper performance of the work, form metal to provide for proper installation of elastomeric sealant in compliance with SMACNA standards.
- E. Separations: Provide for separation of metal from noncompatible metal or corrosive substrates by coating or other permanent separation as recommended by manufacturer/fabricator.

## PART 3 - EXECUTION

### 3.1 INSTALLATION REQUIREMENTS

- A. General: Except as otherwise indicated, comply with manufacturer's installation instructions and recommendations, and with SMACNA "Architectural Sheet Metal Manual". Anchor units of work securely in place by methods indicated. Provide for thermal expansion of metal units. Conceal fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints and seams which will be permanently watertight and weatherproof.
- B. Where required for waterproof performance and to guard against wind driven rain intrusion, bed flanges of work in a thick coat of bituminous roofing cement or other bituminous material.

- C. Set flashing to shed water to the exterior of the building envelope. Flashing shall extend a minimum of 8" up under water shed material above it.
- D. Provide copper head flashing over all door and window openings.
- E. Provide copper sill thru-wall flashing at all louvers, doors, and wall penetrations.

### 3.2 CLEANING AND PROTECTION

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

END OF SECTION 07620

**SECTION 07920  
JOINT SEALANTS**

**PART 1 - GENERAL**

**1.1 SECTION REQUIREMENTS**

- A. Submit product data and color samples.

**PART 2 - PRODUCTS**

**2.1 JOINT SEALANTS**

- A. Provide the following materials manufactured by Sonneborn Building Products, where indicated or otherwise required for a complete and proper installation.
  - 1. All surfaces: Sonneborn NP-1
  - 2. Primers as required by the manufacturer.
  - 3. Polyethylene backer-rod where required to prevent 3 point adhesion.
  - 4. Colors:
    - 1. Concealed Installation: Standard Gray
    - 2. Exposed Installation: As selected by the Architect from manufacturer's standard color selections.

**PART 3 - EXECUTION**

**3.1 INSTALLATION**

- A. Comply with ASTM C 1193.

END OF SECTION 07920

**SECTION 08213**  
**FIBERGLASS REINFORCED (FRP) DOORS AND FRAMES**

**PART 1 - GENERAL**

**1.1 SECTION INCLUDES**

- A. Fiberglass Reinforced Plastic (FRP) Doors and Frames.

**1.2 RELATED SECTIONS**

- A. Section 08710-Door Hardware.

**1.3 WIND RATING REQUIREMENTS**

- A. Doors shall meet the North Carolina wind load requirements in Carteret County for the Morehead City area (135 mph). Provide certification of compliance.

**1.4 SUBMITTALS**

- A. Submit under provisions of Section 01340.
- B. Product Data: Manufacturer's printed product data indicating characteristics of products specified in this Section.
- C. Shop drawings:
  - Plans: Indicate location of each door opening assembly in project.
  - Elevations: Dimensioned elevation of each type door opening assembly in project; indicate sizes and locations of door hardware, and lites and louvers, if specified.
  - Details: Installation details of each type installation condition in project; indicate installation details of glazing, if specified.
  - Schedule: Indicate each door opening assembly in project; cross-reference to plans, elevations, and details.
- D. Selection Samples: Manufacturer's standard color chips.
- E. Verification Samples: Two (2) samples to verify color match.
- F. Manufacturer's Instructions: Printed installation instructions for door opening assemblies.
- G. Warranty Documents: Manufacturer's standard warranty documents, executed by manufacturer's representative, countersigned by Contractor.

## 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Packing, Shipping, Handling and Unloading: Package door opening assemblies in manufacturer's standard containers.
- B. Store door assemblies in manufacturer's standard containers, on end, to prevent damage to face corners and edges.

## 1.6 WARRANTY

- A. Manufacturer's Warranty: Manufacturer's 10-year warranty against failure due to corrosion from specified environment.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable Manufacturers:
  - 1. Simon Doors by Chem-Pruf
  - 2. Edgewater FRP
  - 3. Corrim Company
  - 4. Approved Equal

### 2.2 MATERIALS

- A. Fiberglass Mat: Minimum 1.5 ounces per square foot
- B. Resins: Manufacturer's formulation for fabricating units to meet specified requirements.
- C. Fasteners: Stainless steel.
- D. Factory installed.

### 2.3 MANUFACTURED UNITS

- A. Fiberglass Reinforced Plastic (FRP) Doors: 45 minute fire rated
  - 1. Gel-coat with molded-in color
  - 2. Thickness: 1-3/4 inches.
  - 3. Thermal Insulating Value: 'R' factor 11.
  - 4. Construction:
    - a. Core: End-grain balsa wood, resin-impregnated.
    - b. Door Plates: Molded in one continuous piece, resin reinforced with hand-laid glass fiber mat, nominal 1/8 inch thick, minimum 15 mil gel-coated surface.
    - c. Door Edges: Minimum three (3) layers resin-reinforced glass fiber mat, nominal 3/8 inch thick, machine tooled.

5. Style: Flush
  6. Sizes: Indicated on drawings.
  - 7.. Finish: Smooth surface, color as selected by Architect.
- B. Frame Anchors: Types recommended by manufacturer for salt air environment, non-corrosive.
- C. Door Hardware: Specified Section 08710.
- D. Door Frames: Fiberglass Reinforced solid, 45 minute fire rated. As recommended by Door Manufacturer.
1. Gel-coat with mounded-in color

## 2.4 FABRICATION

- A. Fiberglass Reinforced Plastic (FRP) Doors and Frames
1. Minimum glass fiber to resin ratio: 30 percent.
  2. Mortise for lockset, and recess for strike plate in lock stile.
  3. Embed stainless steel reinforcement for hinges in fiberglass matrix; provide for hinge leaf recesses in hinge stile.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verification of Conditions:
1. Framed openings are correctly prepared to receive doors.
  2. Framed openings are correct size and depth in accordance with shop drawings.
- B. Installer's Examination:
1. Have installer examine conditions under which construction activities of this section are to be performed and submit written report if conditions are unacceptable.
  2. Transmit two copies of installer's report to Architect within 24 hours of receipt.
  3. Beginning construction activities of this section indicates installer's acceptance of conditions.
- C. Verify that glazing has been factory-installed.

### 3.2 INSTALLATION

- A. Install door opening assemblies in accordance with shop drawings, SDI 100, and manufacturer's printed installation instructions, using installation methods and materials specified in installation instructions.

- B. Installation of door hardware is specified in Section 08710.
- C. Install door hardware in accordance with manufacturer's printed instructions, using through bolts to secure surface applied hardware.
- D. Site Tolerances: Maintain plumb and level tolerances specified in manufacturer's printed installation instructions.
- E. Seal the door frame and wall connection with self-adhesive rubber membrane ice and water shield tape, 3 and 1/2 inches wide minimum, similar to Peel-N-Seal, or approved equal.

### 3.3 ADJUSTING

- A. Adjust doors in accordance with door manufacturer's maintenance instructions to swing open and shut without binding, and to remain in place at any angle without being moved by gravitational influence.
- B. Adjust door hardware to operate correctly in accordance with hardware manufacturer's maintenance instructions.

### 3.4 CLEANING

- A. Clean surfaces of door opening assemblies and sight-exposed door hardware in accordance with manufacturer's maintenance instructions.

### 3.5 PROTECTION OF INSTALLED PRODUCTS

- A. Protect door opening assemblies and door hardware from damage by subsequent construction activities until final inspection.

END OF SECTION 08213

**SECTION 08710  
FINISH HARDWARE**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

- A. Work included:
  - 1. Furnish finish hardware as required to complete the work as shown on the Drawings and as specified herein.
  - 2. Furnish trim attachments and fastenings, specified or otherwise required, for proper and complete installation.
- B. Related work:
  - 1. Section 08213: Fiberglass Reinforced Doors & Frames

**1.2 QUALITY ASSURANCE**

- A. The hardware supplier shall have sufficient experience and organization consisting of members of the American Society of Architectural Hardware Consultants (AHC) to properly handle, detail, and service the hardware in a satisfactory manner.
- B. The hardware supplier shall meet with the owner to verify the owner's existing keying system prior to keying locks and cylinders.
- C. The hardware consultant shall visit the site upon completion of hardware installation, operation and adjustment. He shall check all hardware for proper installation and operation and submit a report of this inspection to the Architect.

**1.3 REFERENCES**

- A. A117.1 and ADA Title-III, Accessibility and Usability for Physically Handicapped Persons.
- B. NFPA-101, Life Safety Code - with latest revisions.
- C. North Carolina State Building Code - with latest revisions.

**1.4 SUBMITTALS**

- A. Comply with pertinent provisions of Section 01340.
- B. Submit the following:
  - 1. Four copies of the completely detailed schedules for approval with a cut of each piece of hardware.
    - a. Approval of this list by the Architect will not relieve the Contractor of the responsibility to provide all finish hardware items required to complete the work.
- C. Templates: In a timely manner to assure orderly progress of the work, deliver templates or physical samples of the approved finish hardware items to pertinent manufacturers of interfacing items such as doors and frames.

## 1.5 PRODUCT HANDLING

- A. Deliver materials to jobsite packaged and marked with respective door numbers. Store hardware in a clean, secure and dry location.
- B. Fasteners:
  - 1. Furnish necessary screws, bolts, and other fasteners of suitable size and type to anchor the hardware in position for long life under hard use.
  - 2. Where necessary, furnish fasteners with toggle bolts, expansion shields, hex bolts, and other anchors approved by the Architect, according to the material to which the hardware is to be applied and according to the recommendations of the hardware manufacturer.
  - 3. Provide fasteners which harmonize with the hardware as to finish and material.
- C. Where butts are required to swing 180 degrees, furnish butts of sufficient throw to clear the trim.
- D. Furnish silencers for door frames at the rate of three for each single door and two for each door of a pair of doors; except weather stripped doors.

## 1.6 OPERATION AND MAINTENANCE DATA

- A. Provide manufacturers parts list and maintenance and instructions upon completion of the project.
- B. The Contractor shall turn over to the owner any necessary wrenches and other tools that are packaged with the hardware for proper maintenance.

## 1.7 HANDICAP AND ADA COMPLIANCE

- A. All hardware shall meet all requirements of the North Carolina Handicap Codes and the ADA. Such requirements shall take precedence over any non-compliant hardware schedule.

## PART 2 – PRODUCTS

### 2.1 MATERIALS

- A. Butt Hinges: Furnish 5-knuckle stainless steel with NRP for exterior doors. Furnish 5-knuckle hinges for interior doors. NOTE: Furnish ball bearing hinges for all doors specified to have door closers.
- B. Locksets: Sargent, Stainless steel
- C. Push, Pulls, Kickplates: Rockwood, Stainless steel
- D. Door Closers: Norton, Aluminum/Stainless steel
- E. Thresholds, Weather stripping: Furnish Pemko, Aluminum
- F. Stops, Silencers: Rockwood

### 2.2 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.

## 2.3 KEYING

Hardware Supplier to comply with Owner's existing keying system. Listed below are the Owner's general requirements.

- A. Factory key, master key, and grand-master key locks and cylinders will be determined, and required.
- B. Furnish three keys for each lock, six master keys for each set, and six grand-master keys.
- C. Construction keying:
  - 1. Furnish a construction master key system with 10 keys total for locks and cylinders.
  - 2. Use only the construction keys during construction.
  - 3. Upon substantial completion of the work, as that date is established by the Architect, void the construction key system and, in the presence of the Architect, demonstrate that the specified keying system is operating properly.
- D. Identification and delivery:
  - 1. Factory stamp permanent keys, "DO NOT DUPLICATE".
  - 2. Identify permanent keys with tags, and send direct to the owner by registered mail or receipted personal delivery.

## 2.4 TOOLS AND MANUALS

- A. With the delivery of permanent keys, deliver to the owner one complete set of adjustment tools and one set of maintenance manuals for locksets, latchsets, closers, and panic devices.

## 2.5 FINISHES

- A. Finishes for this project shall be as indicated on the hardware schedule.

## PART 3 - EXECUTION

### 3.1 DELIVERIES

- A. Stockpile items sufficiently in advance to assure their availability, and make necessary deliveries in a timely manner to assure orderly progress of the total work.

### 3.2 COORDINATION

- A. Coordinate as necessary with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section.
- B. Upon completion of the work, and as a condition of its acceptance, provide the inspection, adjustment, and report described in Article 1.2 above.

### 3.3 FINISH HARDWARE

- A. Furnish the following hardware groups in the amounts indicated on the

drawings.

- B. All miscellaneous hardware required that is not specifically called out, shall be provided by the General Contractor. He shall submit all miscellaneous hardware for approval by the Architect.

### 3.4 HARDWARE ALLOWANCE

- A. Provide an allowance of \$1800.00 for door hardware. Hardware shall include cost of materials and shipping only. Installation shall be included in the Base Bid. See Section 01220 Allowances.

## PART 4 – FINISH HARDWARE SCHEDULE

### 4.1 FINISH HARDWARE SCHEDULE

END OF SECTION 08710

**SECTION 09260  
GYPSUM BOARD ASSEMBLIES**

**PART 1 - GENERAL**

**1.1 SECTION REQUIREMENTS**

- A. Submit Product Data.

**PART 2 - PRODUCTS**

**2.1 GYPSUM BOARD**

- A. Gypsum board products in maximum lengths available to minimize end-to-end butt joints.
  - 1. Gypsum Wallboard: ASTM C 36, 5/8" thick with manufacturer's standard edges. Regular type, unless otherwise indicated. Type X.
  - 2. Glass-Mat, Water-Resistant Gypsum Backing Board: ASTM C 1178, 5/8" thick, regular type, unless otherwise indicated and Type X. "Dens-Shield Tile Backer" manufactured by Georgia-Pacific Corp. or approved equal by other manufacturers. (All bathrooms)

**2.2 ACCESSORIES**

- A. Accessories for Interior Installation: Cornerbead, edge trim, and control joints complying with ASTM C 1047, formed from steel sheet zinc coated by hot-dip process or rolled zinc.
- B. Gypsum Board Joint Treatment Materials: Comply with ASTM C 475. Paper reinforcing tape and setting-type compounds.
- C. Cementitious Backer Units: ANSI A118.9.
- D. Cementitious Backer Unit Joint Treatment Materials: Comply with ASTM C 475.
- E. Acoustical Sealant for Exposed and Concealed Joints: Non-sag, paintable, non-staining latex sealant complying with ASTM C 834.
- F. Sound-Attenuation Blankets: Unfaced mineral-fiber-blanket insulation complying with ASTM C 665 for Type I.
- G. Miscellaneous Materials: Auxiliary materials for gypsum board construction that comply with referenced standards.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Install and finish gypsum panels to comply with ASTM C 840 and GA-216.
  - 1. Isolate the perimeter of non-load-bearing gypsum board partitions where they abut structural elements, except floors, by providing a 1/4- to 1/2-inch- (6.4- to 12.7- mm-) wide space between gypsum board and the structure. Trim edges with Ubead edge trim where edges of gypsum panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
  - 2. Install cementitious backer units to comply with ANSI A108.11.
  - 3. Single-Layer Fastening Methods: Fasten gypsum panels to supports with screws.
  
- B. Install glass mat gypsum board with rough textured side facing interior of room.
  
- C. Finishing Gypsum Board Assemblies: Level 4 finish, unless otherwise indicated, Level 1 finish for concealed areas, unless a higher level of finish is required for fire-resistancerated assemblies.

END OF SECTION 09260

**SECTION 09670**  
**IMPERVIOUS FLOOR AND WALL COATINGS**

**PART 1 - GENERAL**

**1.01 SCOPE**

- A. The work of this section includes the surface preparation and painting of all surfaces related to the painting and high performance coating as indicated in the drawings.

**1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. Section 09900: Painting.

**1.03 REFERENCE SPECIFICATIONS AND STANDARDS**

- A. Without limiting the general aspects of other requirements of these specifications, all surface preparation, coating and painting of surfaces shall conform to NACE, ICRI and the manufacturer's printed instructions.
- B. The Architect's decision shall be final as the interpretation and/or conflict between any of the referenced specifications and standards contained herein.

**1.04 CONTRACTOR**

- A. The Contractor shall have five years practical experience and successful history in the application of specified products in similar projects. He shall substantiate this requirement by furnishing a list of references and job completions.
- B. Applicator must successfully demonstrate to the product manufacturer the ability to apply the material correctly and within the confines of the specifications. The Contractor must provide a letter from the manufacturer stating their acceptance of the Contractor for this project to apply these products.
- C. The Contractor shall possess the applicable license to perform the work as herein described and as specified by local, state and federal laws.
- D. The Contractor must ensure an English speaking job foreman at the jobsite who has the ability to communicate with project team members as needed.
- E. The Contractor shall provide a site mock up as necessary with each coating system as a representative of how the systems shall be installed and their final appearance(to include color, sheen, slip resistance, texture etc), which is to be approved by the Architect before any work is started. For overcoat projects this mock up shall be used to test for adequate adhesion. This approved mock up shall be the quality standard for the rest of the project.

This mock up location, size and other job specifics needs shall be detailed by the Architect.

1. The Contractor shall provide up to five (5) sample variations as requested by the Architect.

#### 1.05 QUALITY ASSURANCE

- A. General: Quality assurance procedures and practices shall be utilized to monitor all phases of surface preparation, application, and inspection throughout the duration of the project. Procedures or practices not specifically defined herein may be utilized provided they meet recognized and accepted professional standards and are approved by the Architect.
- B. Surface Preparation: Surface preparation will be based upon comparison with: “Guideline for Selecting and Specifying Concrete Surface Preparation for Sealers, Coating and and Polymer Overlays” and ICRI CSP Surface Profile Chips.
- C. Application: No coating or paint shall be applied: When the surrounding air temperature or the temperature of the surface to be coated is below the minimum required temperature for the specified product; to wet or damp surfaces or in fog or mist; when the temperature is less than 5 degrees F. above the dewpoint; when the air temperature is expected to drop below 40 degrees F. within six hours after application of coating. Dewpoint shall be measured by use of an instrument such as a Sling Psychrometer in conjunction with U.S. Department of Commerce Weather Bureau Psychrometric Tables. If above conditions are prevalent, coating or painting shall be delayed or postponed until conditions are favorable. The day's coating or painting shall be completed in time to permit the film sufficient drying time prior to damage by atmospheric conditions.
- D. Inspection Devices: The Contractor shall furnish, until final acceptance of coating and painting, inspection devices in good working condition for detection of holidays and measurement of dry-film thickness of coating and paint. The Contractor shall also furnish U.S. Department of Commerce; National Bureau of Standard certified thickness calibration plates to test accuracy of dry film thickness gauges and certified instrumentation to test accuracy of holiday detectors.
- E. All necessary testing equipment shall be made available for the Architect's use at all times until final acceptance of application. Holiday detection devices shall be operated in the presence of the Architect.
- F. Submit manufacturer's standard colors for color selection.
- G. Submit a sample panel for each coating system showing final finish, color, and texture. Sample panel shall be 18" X 18" on ½" thick preservative treated plywood. Submit up to four additional sample panels with variations as required by the Architect.
  1. Floor coating sample panel shall include built-up epoxy base.

## 1. 06 SAFETY AND HEALTH REQUIREMENTS

- A. General: In accordance with requirements set forth by regulatory agencies applicable to the construction industry and manufacturer's printed instructions and appropriate technical bulletins and manuals, the Contractor shall provide and require use of personnel protective lifesaving equipment for persons working on or about the project site.
- B. Head and Face Protection and Respiratory Devices: Equipment shall include protective helmets, which shall be worn by all persons while in the vicinity of the work. In addition, workers engaged in or near the work during sandblasting shall wear eye and face protection devices and air purifying halfmask or mouthpiece respirators with appropriate filters. Barrier creams shall be used on any exposed areas of skin.
- C. Ventilation: Where ventilation is used to control hazardous exposure, all equipment shall be explosion-proof. Ventilation shall reduce the concentration of air contaminant to the degree a hazard does not exist. Air circulation and exhausting of solvent vapors shall be continued until coatings have fully cured.
- D. Sound Levels: Whenever the occupational noise exposure exceeds maximum allowable sound levels, the Contractor shall provide and require the use of approved ear protective devices.
- E. Illumination: Adequate illumination shall be provided while work is in progress, including explosion-proof lights and electrical equipment. Whenever required by the Architect, the Contractor shall provide additional illumination and necessary supports to cover all areas to be inspected. The Architect shall determine the level of illumination for inspection purposes.
- F. Confined Space: When applicable it is mandatory that all work be performed in compliance with OSHA'S rules and regulations for working in confined space. Atmospheres within confined spaces as defined by the Occupational Safety and Health Administration are classified as being either a Class A, Class B or Class C environment.

## PART 2 - PRODUCTS

### 2.01 GENERAL

- A. Materials specified are those that have been evaluated for the specific service. Products of the Tnemec Co. are listed to establish a standard of quality.

Tnemec Company, Incorporated 101 Rice Bent Way Unit #5 Columbia, SC 29229  
(803) 736-1553. Contact is Mr. Joseph Saleeby (919)830-6816 [jsaleeby@tnemec.com](mailto:jsaleeby@tnemec.com) .

1. Products in compliance with specification requirements as provided by the following

- manufacturers will also be accepted.
- a. Sherwin Williams
  - b. Dur-A-Flex
2. Equivalent materials of other manufacturers may be substituted on written approval of the Architect.
- a. Requests for substitution shall include manufacturer's literature for each product giving the name, product number, generic type, descriptive information, solids by volume, recommended dry film thickness, cost savings and certified test reports showing results to equal the performance criteria of the products specified herein. No request for substitution shall be considered that will decrease film thickness, the number of coats or offer a change in the generic type of coatings specified. In addition, a list of five similar projects shall be submitted in which each product has been used and rendered satisfactory service.
  - b. Requests for product substitution shall be made at least ten (10) days prior to bid date.
- B. Manufacturer's color charts shall be submitted to the Architect at least 30 days prior to paint application. General contractor and painting contractor shall coordinate work so as to allow sufficient time (five to ten days) for paint to be delivered to the jobsite.
- C. All materials shall be brought to the jobsite in original, sealed containers. They shall not be used until the Architect has inspected contents and obtained data from information on containers or labels. Materials exceeding storage life recommended by the manufacturer shall be rejected.
- D. All coatings and paints shall be stored in enclosed structures to protect them from weather and excessive heat or cold. Flammable coatings or paint must be stored to conform to City, County, State and Federal safety codes for flammable coating or paint materials. At all times, coating and paints shall be protected from freezing.
- E. A NACE certified technical representative from the paint manufacturer shall visit the job site to support the Contractor's personnel, the Owner and/or the Architect as needed and/or requested. Visits shall be made as needed to help with hold point inspections for the Owner or Architect. Additional visit shall be made as needed and/or requested by Owner, Architect or Contractor. 48 hours' notice is required by the Contractor for each hold point inspection.
- F. All parties, to include the owner or owners representative, architect, general contractor, installer, any subs and the product manufacture, shall meet prior to any work is started to review the spec and discuss job specific expectations, need and requirements
- G. Coating Systems

**1. Interior Wood Floor: Impervious Floor Coating**

Surface Preparation: Sand smooth all surfaces to prevent telegraphing of irregular surfaces. Surface shall be clean and dry prior to coating.

1<sup>st</sup> Coat: 100% Solid Polyamine Epoxy applied at 4.0 – 6.0 mils.  
(performance equal to Tnemec Series 201 Epoxoprime)

Joint Detail: 100% Solids Polyamine Epoxy and 3” inch fiber-mesh tape.  
(performance equal to Tnemec 215 Surfacing Epoxy and 273-0273D Stranlok ML Tape)

2<sup>nd</sup> Coat: 100% Solids Flexible Epoxy applied as single broadcast using 30/50 mesh sand to achieve 1/16” inch. (performance equal to Tnemec Series 206 Sub-Flex EP)

3<sup>rd</sup> Coat: 100% Solids Flexible Epoxy applied as a grout coat to achieve desired slip resistance. (performance equal to Tnemec Series 206 Sub-flex EP)

4<sup>th</sup> Coat: Aliphatic Polyester Polyurethane applied at 2.0 – 3.0 dry mils.  
(performance equal to Tnemec Series 290 CRU) - Semi-Gloss

Cove Base: 4” Height using 100% Solids Polyamine Epoxy Mortar Mix to be installed prior to application of the 100% Solids Flexible Epoxy.  
(performance equal to Tnemec Series 237 Power-Tread) Base shall be coated same as floor surface except without the non-slip finish.

**2. Interior Wood Walls and Trim: Impervious Wall Coating**

Surface Preparation: Sand smooth all surfaces to prevent telegraphing of irregular surfaces. Surface shall be clean and dry prior to coating.

1<sup>st</sup> Coat: 100% Solid Polyamine Epoxy applied at 250-200 mils.  
(performance equal to Tnemec Series 201 Epoxoprime)

Joint Detail: 100% Solids Polyamine Epoxy and 3” inch fiber-mesh tape.  
(performance equal to Tnemec 215 Surfacing Epoxy and 273-0273D Stranlok ML Tape)

2<sup>nd</sup> Coat/Base: 100% Solids Polyamine Epoxy applied at 150-100 sq ft/ gal.  
(performance equal to Tnemec Series 273 Stranlok ML)

Fiberglass Mat: Embed Fiberglass Mat into wet 100% Solids Polyamine Epoxy.  
(performance equal to Tnemec Series 273-0273C Fiberglass Reinforcing Mat)

3<sup>rd</sup> Coat/Saturant: 100% Solids Polyamine Epoxy applied at 100-75 sq ft/ gal.  
(performance equal to Tnemec Series 273 Stranlok ML)

4<sup>th</sup> Coat: 100% Solids Polyamide Epoxy applied at 200-150 sq ft/gal.  
(performance equal to Tnemec Series 280 Tneme-Glaze)

5<sup>th</sup> Coat: Aliphatic Polyester Polyurethane applied at 325-300 sq ft/gal dry mils.  
(performance equal to Tnemec Series 290 CRU) - Semi-gloss.

3. Topcoat and base coat layers shall be same color. Typical at floor and walls.

## PART 3 – EXECUTION

### 3.01 GENERAL

- A. All surface preparation, coating and painting shall conform to applicable standards of NACE, ICRI and the manufacturer's printed instructions. Material applied prior to approval of the surface by the Architect shall be removed and reapplied to the satisfaction of the Architect at the expense of the Contractor.
- B. All work shall be performed by skilled craftsmen qualified to perform the required work in a manner comparable with the best standards of practice. Continuity of personnel shall be maintained and transfers of key personnel shall be coordinated with the Architect.
- C. The Contractor shall provide an English speaking supervisor at the work site during cleaning and application operations. The supervisor shall have the authority to coordinate the work, and make decisions pertaining to the fulfillment of the contract.
- D. Dust, dirt, oil, grease or any foreign matter that will affect the adhesion or durability of the finish must be removed by washing with clean rags dipped in an approved cleaning solvent and wiped dry with clean rags.
- E. The Contractor's coating and painting equipment shall be designed for application of materials specified and shall be maintained in first class working condition. Compressors shall have suitable traps and filters to remove water and oils from the air. Contractor's equipment shall be subject to approval of the Architect.
- F. Application of the first coat shall follow immediately after surface preparation and cleaning. Any cleaned areas not receiving first coat within this period shall be re-cleaned prior to application of first coat.

### 3.02 SURFACE PREPARATION

- A. The latest revision of the following surface preparation specifications for NACE shall form a part of this specification:

1. Solvent Cleaning (SSPC-SP1): Removal of oil, grease, soil and other contaminants by use of solvents, emulsions, cleaning compounds, steam cleaning or similar materials and methods which involve a solvent or cleaning action.
  2. Surface Preparation of Concrete (SSPC-SP13/NACE 6): This standard gives requirements for surface preparation of concrete by mechanical, chemical, or thermal methods prior to the application of bonded protective coating or lining systems.
- B. The Contractor shall keep the area of his work and the surrounding environment in a clean condition. He shall not permit materials to accumulate as to constitute a nuisance or hazard to the accomplishment of the work, the operation of the existing facilities, or nuisance to the surrounding environment.
- C. Specific Surface Preparation: Surface preparation for the specific system shall be as noted in Section 2.01 Paragraphs G.

### 3.03 APPLICATION, GENERAL

- A. Coating and paint application shall conform to the requirements of the manufacturer of the coating and paint materials.
- B. Thinning shall be permitted only as recommended by the manufacturer approved by the Architect.
- C. Each application of coating or paint shall be applied evenly, free of brush marks, sags, runs, with no evidence of poor workmanship. Care shall be exercised to avoid lapping on glass or hardware. Coatings and paints shall be sharply cut to lines. Finished surfaces shall be free from defects or blemishes.
- D. Protective coverings or drop cloths shall be used to protect floors, fixtures, and equipment. Care shall be exercised to prevent coatings or paint from being spattered onto surfaces that are not to be coated or painted. Surfaces from which materials cannot be removed satisfactorily shall be recoated or repainted as required to produce a finish satisfactory to the Architect.
- E. When two coats of coating or paint are specified, where possible, the first coat shall contain sufficient approved color additive to act as an indicator of coverage or the two coats must be of contrasting color.
- F. Film thickness per coat specified in Section 2.01 Paragraphs G are minimum required. If roller application is deemed necessary, the Contractor shall apply additional coats as to achieve the specified thickness.
- G. All material shall be applied as specified.

- H. All edges and other irregular surfaces shall receive a brush coat of the specified product prior to application of the first complete coat.

### 3.04 COATING SYSTEMS APPLICATION

- A. After completion of surface preparation as specified for the specific system, materials shall be applied as noted in Section 2.01 Paragraphs G.

### 3.05 COLOR SCHEME

- A. Colors: Submittals will be made to the Architect for approval prior to application.

### 3.06 SOLVENT VAPOR REMOVAL

- A. Where appropriate all solvent vapors shall be completely removed by suction-type exhaust fans and blowers before placing in operating service.

### 3.07 CLEAN UP

- A. Upon completion of the work, all staging, scaffolding, and containers shall be removed from the site or destroyed in a manner approved by the Architect. Coating or paint spots and oil or stains upon adjacent surfaces shall be removed and the jobsite cleaned. All damage to surfaces resulting from the work of this section shall be cleaned, repaired, or refinished to the satisfaction of the Architect at no cost to the Owner.

### 3.8 WARRANTY

- A. The Contractor will warrant the work free of defects in material and workmanship for a period of one year from the acceptance of the work. At the end of one year, the Contractor will return for a one-year anniversary inspection of the work. The Contractor will correct any deficiencies found with no cost to the owner. Inspections shall be conducted to conform to owners spec.

## SECTION 09900 PAINTING

### PART 1 - GENERAL

#### 1.1 DESCRIPTION

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

#### 1.2 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.
- B. Paint coordination:
  - 1. Provide finish coats which are compatible with the prime coats actually used.
  - 2. Review other Sections of these specifications as required, verifying the prime coats to be used and assuring compatibility of the total coating system for the various substrate.

3. Upon request, furnish information on the characteristics of the specific finish materials to assure that compatible prime coats are used.
4. Provide barrier coats over non-compatible primers, or remove the primer and reprime as required.
5. Notify the Architect in writing of anticipated problems in using the specified coating systems over prime-coatings supplied under other Sections.

### 1.3 SUBMITTALS

- A. Comply with pertinent provisions of Section 01340.
- B. Product data: Within 21 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
  1. Materials list of items proposed to be provided under this Section;
  2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
  3. Manufacturers full line of colors and finishes.

#### Samples:

1. Following the selection of colors and glosses by the Architect, submit samples for the Architect's review.
  - a. Provide samples of each color and each gloss for each material on which the finish is specified to be applied.
  - b. Except as otherwise directed by the Architect, make samples approximately 8" x 10" in size.
  - c. If so directed by the Architect, submit samples during progress of the work in the form of actual application of the approved materials on actual surfaces to be painted.
2. Do not commence finish painting until approved samples are on file at the job site.

### 1.4 PRODUCT HANDLING

- A. Comply with pertinent provisions of Section 01620.

### 1.5 JOB CONDITIONS

- A. Do not apply solvent-thinned paints when the temperature of surfaces to be painted and the surrounding air temperatures are below 45°F, unless otherwise permitted by the manufacturers' printed instructions as approved by the Architect.
- B. Weather conditions:
  1. Do not apply paint in snow, rain, fog, or mist; or when the relative humidity exceeds 85%; or to damp or wet surfaces, unless otherwise

permitted by the manufacturers' printed instructions as approved by the Architect.

2. Applications may be continued during inclement weather only within the temperature and humidity limits specified by the paint manufacturer as being suitable for use during application and drying periods.

## 1.6 EXTRA STOCK

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

## PART 2 - PRODUCTS

### 2.1 PAINT MATERIALS

- A. Acceptable materials:
  1. The Painting Schedule in Part 3 of this Section is based, in general, on products of the Sherwin Williams Paint Company.
  2. Equal products by Pittsburgh Paints, Benjamin Moore, Devoe, Glidden, TNEMEC, and Pratt and Lambert. may be substituted in accordance with provision of the Contract.
  3. Where products are proposed other than those specified by name and number in the Painting Schedule, provide under the product data submittal required by Article 1.3 of this Section a new painting schedule compiled in the same format used for the Painting Schedule included in this Section.
- B. Undercoats and thinners:
  1. Provide undercoat paint produced by the same manufacturer as the finish coat.
  2. Use only the thinners recommended by the paint manufacturer, and use only to the recommended limits.
  3. Insofar as practicable, use undercoat, finish coat, and thinner material as parts of a unified system of paint finish.

### 2.2 APPLICATION EQUIPMENT

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

## 2.3 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 GENERAL

- A. General:
  - 1. Mix and prepare paint materials in strict accordance with the manufacturers' recommendations as approved by the Architect.
  - 2. When materials are not in use, store in tightly covered containers.
  - 3. Maintain containers used in storage, mixing, and application of paint in a clean condition, free from foreign materials and residue.
  - 4. Stir materials before application, producing a mixture of uniform density.
  - 5. Do not stir into the material any film which may form on the surface, but remove the film and, if necessary, strain, the material before using.
  - 6. Remove removable items which are in place and are not scheduled to receive paint finish; or provide surface-applied protection prior to surface preparation and painting operations.
  - 7. Following completion of painting in each space or area, reinstall the removed items by using workmen who are skilled in the necessary trades.

### 3.2 SURFACE CONDITIONS

- A. General
  - 1. Surfaces shall be dry, clean, and smooth.
  - 2. Clean each surface to be painted prior to applying paint.
  - 3. Remove oil and grease with clean cloths and cleaning solvent of low toxicity and flash point in excess of 200 degrees F prior to start of mechanical cleaning.
  - 4. Schedule the cleaning and painting so that dust and other contaminants from the cleaning process will not fall onto wet newly painted surfaces.
  - 5. Perform preparation and cleaning procedures in strict accordance with the paint manufacturers' recommendations.
  - 6. Check moisture content of wood to ensure compliance with paint manufacture recommendations. Wood moisture content in excess of 15% shall be reported to the Architect prior to beginning paint work.
- B. Preparation of existing wood surfaces
  - 1. Thoroughly clean and remove existing loose paint, scale, or other loose or unstable surface materials.
  - 2. Repair gouges, nicks, or deteriorated materials, and sand smooth with adjacent surfaces.

- C. Preparation of wood surfaces:
  - 1. Clean surfaces until free from dirt, oil, mildew and other foreign substance.
  - 2. Smooth finish surfaces exposed to view, using the proper sandpaper. Where so required, use varying degrees of coarseness in sandpaper to produce a uniformly smooth and unmarred surface in preparation for the application of paint.

### 3.3 PAINT APPLICATION

- A. General:
  - 1. Touch-up shop-applied prime coats which have been damaged, and touch-up bare areas prior to start of finish coats application.
  - 2. Slightly vary the color of succeeding coats.
    - a. Do not apply additional coats until the completed coat has been inspected and approved.
    - b. Only the inspected and approved coats of paint will be considered in determining the number of coats applied.
  - 3. Sand and dust between coats to remove defects visible to the unaided eye from a distance of five feet.
  - 4. Back prime all exterior trim.
- B. Drying:
  - 1. Allow sufficient drying time between coats, modifying the period as recommended by the material manufacturer to suit adverse weather conditions.
  - 2. Consider oil-base and oleoresinous solvent-type paint as dry for recoating when the paint feels firm, does not deform or feel sticky under moderate pressure of the thumb, and when the application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.
- C. Brush applications:
  - 1. Brush out and work the brush coats onto the surface in an even film.
  - 2. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, and other surface imperfections will be not acceptable.
- D. Spray application:
  - 1. Except as specifically otherwise approved by the Architect, confine spray application to concrete masonry surfaces, metal framework and similar surfaces where hand brush work would be inferior.
  - 2. Where spray application is used, apply each coat to provide the hiding equivalent of brush coats.
  - 3. Do not double back with spray equipment to build up firm thickness or two coats in one pass.

- E. For completed work, match the approved samples as to texture, color, and coverage. Remove, refinish, or repaint work not in compliance with the specified requirements.
- F. Miscellaneous surfaces and procedures:
  - 1. Exposed mechanical items:
    - a. Finish electric panels, access doors, conduits, pipes, ducts, grilles, registers, vents, and items of similar nature to match the adjacent wall or ceiling surfaces, or as directed.
  - 2. Provide fungicide and mildewcide additives in the maximum amount allowable by the paint manufacturer.

### 3.4 PAINTING SCHEDULE

Provide the following paint finishes.

- A. Exterior Siding:
  - 1. Factory primed and stained
- B. Interior Preservative Treated Plywood: (Indicated to receive impervious wall coating)
  - 1. See specification Section 09670 Impervious Floor and Wall Coatings
- C. Interior Gypsum Board
  - 1. First coat: TNEMEC Elasto-Grip FC 151-1051
  - 2. Second coat: TNEMEC H.B. TNEME-TUF Coat Series 114
  - 3. Third coat: TNEMEC H.B. TNEME-TUF Coat Series 114

### 3.6 Surface treatments shall be as followed unless designated otherwise in Drawings.

- A. Semi-gloss surfaces:
  - 1. Interior walls.
  - 2. Interior exposed metals. (Not including stainless steel.)

END OF SECTION 09900

**SECTION 10161**  
**SOLID PLASTIC TOILET PARTITIONS**

**PART 1 GENERAL**

1.1 SUMMARY

- A. Section Includes:
  - 1. Solid plastic toilet compartments, urinal screens, privacy screens, and entry partitions.
- B. Related Sections:
  - 1. Division 01: Administrative, procedural, and temporary work requirements.

1.2 REFERENCES

- A. ASTM International (ASTM):
  - 1. A167 - Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
  - 2. B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
  - 3. E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- B. National Fire Protection Association (NFPA) 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth.

1.3 SYSTEM DESCRIPTION

- A. Compartment Configurations:
  - 1. Toilet partitions, privacy screens, and entry partitions: Floor mounted, overhead braced; Floor-to-ceiling.
  - 2. Urinal screens: Floor mounted.

1.4 SUBMITTALS

- A. Submittals for Review:
  - 1. Shop Drawings: Include dimensioned layout, elevations, trim, closures, and accessories.
  - 2. Product Data: Manufacturer's descriptive data for panels, hardware, and accessories.
  - 3. Samples: 2 x 3 inch samples showing available colors.

## 1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum five [5] years' experience in manufacture of solid plastic toilet compartments with products in satisfactory use under similar service conditions.
- B. Installer Qualifications: Minimum five [5] years' experience in work of this Section.

## 1.6 WARRANTIES

- A. Provide manufacturer's 25 year warranty against breakage, corrosion, and delamination under normal conditions.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Contract Documents are based on products by Scranton Products.  
([www.scrantonproducts.com](http://www.scrantonproducts.com))
- B. Products meeting the specification requirements will be accepted from the following manufacturers:
  - 1. General Partitions MPG. Corp.
  - 2. Bodrick
  - 3. Knockerbocker Partition Co.
  - 4. Ampco Products Inc.
  - 5. Metpar Corp.
  - 6. Scranton Products

### 2.2 MATERIALS

- A. Doors, Panels and Pilasters:
  - 1. High density polyethylene (HDPE), fabricated from polymer resins compounded under high pressure, forming single thickness panel.
  - 2. Waterproof and nonabsorbent, with self-lubricating surface, resistant to marks by pens, pencils, markers, and other writing instruments.
  - 3. 1 inch thick with edges rounded to 1/4 inch radius.
  - 4. Fire hazard classification: Class A flame spread/smoke developed rating, tested to ASTM E84.
  - 5. Color: To be selected from manufacturer's full color range.
  - 6. Finish: Textured Orange peel or Pebble grain.
- B. Aluminum Extrusions: ASTM B221, 6463-T5 alloy and temper.
- C. Stainless Steel: ASTM A167, Type 304.

## 2.3 HARDWARE

- A. Hinges:
  - 1. 8 inches long, fabricated from heavy-duty extruded aluminum with bright dip anodized finish, wrap-around flanges, adjustable on 30-degree increments, through bolted to doors and pilasters with stainless steel, Torx head sex bolts.
  - 2. Hinges operate on field-adjustable nylon cams, field adjustable in 30 degree increments.
- B. Door Strike and Keeper:
  - 1. 6 inches long, fabricate from heavy-duty extruded aluminum with bright dip anodized finish, with wrap-around flanges secured to pilasters with stainless steel tamper resistant Torx head sex bolts.
  - 2. Bumper: Extruded black vinyl.
- C. Latch and Housing:
  - 1. Heavy-duty extruded aluminum.
  - 2. Latch housing: Bright dip anodized finish.
  - 3. Slide bolt and button: Black anodized finish.
  - 4. Latch and unlatch operation must be ADA approved..
- D. Coat Hook/Bumper:
  - 1. Combination type, stainless steel.
  - 2. Equip outswing handicapped doors with second door pull and door stop.
- E. Door Pulls: stainless steel.

## 2.4 COMPONENTS: Floor mounted, overhead braced

- A. Doors and Dividing Panels: 55 inches high, mounted 14 inches above finished floor.
- B. Pilasters: 82 inches high, fastened to pilaster sleeves with stainless steel tamper resistant Torx head sex bolt.
- C. Pilaster Sleeves: 3 inches high, [one-piece molded HDPE, secured to pilaster with stainless steel tamper resistant Torx head sex bolt.
- D. Wall Brackets: 54 inches long, Extruded PVC, fastened to pilasters and panels with stainless steel tamper resistant Torx head sex bolts.
- E. Headrail: Heavy-duty extruded aluminum, anti-grip design, clear anodized finish, fastened to headrail bracket with stainless steel tamper resistant Torx head sex bolt and at top of pilaster with stainless steel tamper resistant Torx head screws.

- F. Headrail Brackets: 20 gage stainless steel, satin finish, secured to wall with stainless steel tamper resistant Torx head screws.

### **PART 3 EXECUTION**

#### **3.1 INSTALLATION Floor mounted, overhead braced**

- A. Install compartments in accordance with manufacturer's instructions and approved Shop Drawings.
- B. Install rigid, straight, plumb, and level.
- C. Locate bottom edge of doors and panels 14 inches above finished floor.
- D. Provide uniform, maximum 3/8 inch vertical clearance at doors.
- E. Not Acceptable: Evidence of cutting, drilling, or patching.

#### **3.2 ADJUSTING**

- A. Adjust doors and latches to operate correctly.

#### **3.3 INSTALLATION**

- A. Install compartments in accordance with manufacturer's instructions and approved Shop Drawings.
- B. Install rigid, straight, plumb, and level.
- C. Locate bottom edge of doors and panels 14 inches above finished floor.
- D. Provide uniform, maximum 3/8 inch vertical clearance at doors.
- E. Not Acceptable: Evidence of cutting, drilling, or patching.

#### **3.4 ADJUSTING**

- A. Adjust doors and latches to operate correctly.

END OF SECTION 10161

## SECTION 10426 SIGNAGE AND GRAPHICS

### PART 1 – GENERAL

#### 1.1 DESCRIPTION OF THE WORK:

This section includes the following types of signs:

Type A: Permanent room identification plaque

Type B: Restroom identification Plaque

#### 1.2 SUBMITTALS

1. Product Data: Include manufacturer's construction details relative to materials, dimensions of individual components, profiles, and finishes for each type of sign required.
2. Shop Drawings: Provide shop drawings for fabrication and erection of signs. Include plans, elevations, and large-scale sections of typical members and other components. Show anchors, grounds, and reinforcement, accessories, layout, and installation details.
3. Samples: Provide actual color samples and sample of sign Type B.
4. Quality Assurance: Obtain signs from one single source manufacturer.

### PART 2 - PRODUCTS

#### 2.1 ROOM IDENTIFICATION SIGNS, INFORMATIONAL SIGNS.

A. Signage shall be as manufactured by Mohawk Sign Systems, Schenectady, NY, Series 200A, Format D, in colors to be selected by the Architect. Additional acceptable manufacturers are as follows:

1. Advance Corporation
2. ASI Sign Systems, Inc.

#### 2.2 SIGN TYPES:

A. Type A: Restroom Identification Plaque  
Material 8"x 8" photopolymer laminated to 1/4" thick acrylic back, with 1/32" high raised letters, symbols and Braille with edges painted to match face. Individually applied letters are not acceptable.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. In accordance with manufacturer's directions for type of mounting required at height and location indicated, and/or to comply with applicable regulations of governing authorities.
- B. Install signs level, plumb, and at the height indicated, with sign surfaces free from distortion or other defects in appearance.
- C. Wall Mounted Signs: Attach signs using liquid silicone adhesive recommended by the sign manufacturer to attach sign units to irregular or porous surfaces. Use double-sided vinyl tape where recommended by the sign manufacturer to hold the sign in place until

the adhesive has fully cured.

- D. Cleaning and Protection: At completion of the installation operation, clean soiled sign surfaces in accordance with the manufacturer's instructions. Protect units from damage until acceptance by the Owner.

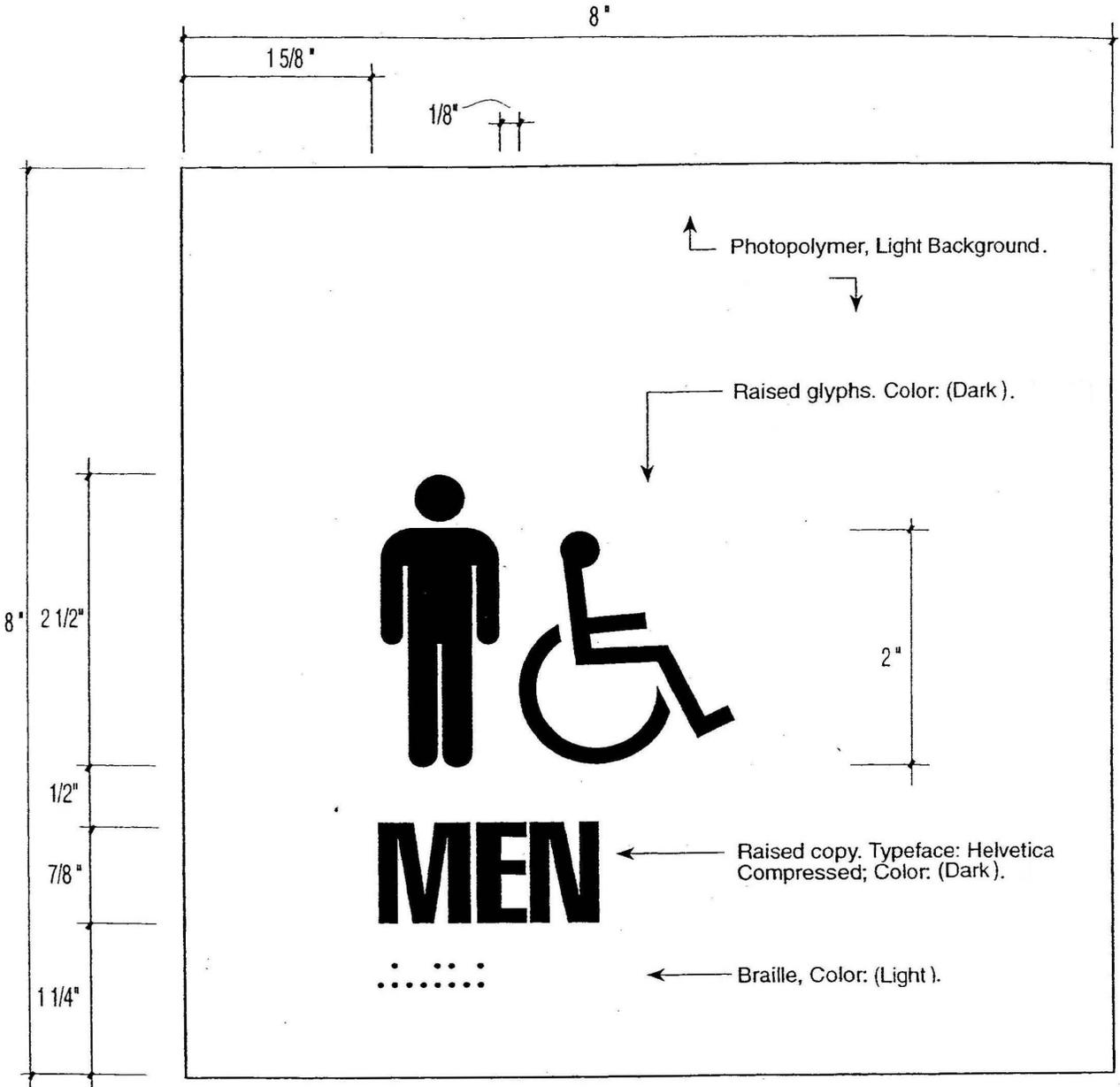
### 3.2 SIGNAGE SCHEDULE

<u>Sign Type:</u>	<u>Copy:</u>	<u>Remarks:</u>
A	WOMEN (Braille for WOMEN)	Mount at 5' – 0" AFF to center line adjacent to jamb
A	MEN (Braille for MEN)	Mount at 5' – 0" AFF to center line adjacent to jamb

### 3.3 SIGNAGE DETAILS

Details of Sign Type A appear on the following pages.

END OF SECTION 10426



SCALE: 3/4" = 1"

Sign Type A Restroom Identification Plaque

**SECTION 10520**  
**FIRE EXTINGUISHERS, CABINETS AND ACCESSORIES**

**PART 1 - GENERAL**

**1.1 MANUFACTURER**

- A. Subject to compliance with requirements, provide products by one of the following or approved equal:
  - 1. Larsen's Manufacturing Company
  - 2. J.L Industries
  - 3. Muckle Manufacturing, Div. of Technico, Inc.
- B. For purposes of establishing levels of quality, Larsen Products are named herein below. Products of equal quality by manufacturers listed above will be acceptable.

**1.2 UL LISTED PRODUCTS**

- A. Provide new UL listed fire extinguisher bearing UL "Listing Mark" for type, rating, and classification of extinguisher indicated.

**1.3 SUBMITTALS**

- A. Submit product data, finish samples and installation instructions.

**PART 2 – PRODUCTS**

**2.1 FIRE EXTINGUISHER (FE)**

- A. Fire extinguishers shall be 10 pound ABC (MP-10). Furnish with nozzles.

**2.2 FIRE EXTINGUISHER BRACKETS**

- A. Provide brackets where cabinets are not required. Model Number 846. Brackets and fasteners shall be non-corrosive.

**PART 3 - EXECUTION**

**3.1 INSTALLATION**

- A. In accordance with manufacturer's directions for type of mounting required at height and location indicated, or if not indicated, to comply with applicable regulations of governing authorities.
- B. It will be the responsibility of the Contractor to have all fire extinguishers inspected and tagged after installation.

END OF SECTION 10520

**SECTION 10800  
TOILET ROOM ACCESSORIES**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

- A. Work included: Provide toilet room accessories where indicated on the drawings, as specified herein, and as needed for a complete and proper installation.

**1.2 PRODUCT HANDLING**

- A. Comply with pertinent provisions of Section 01620.

**PART 2 - PRODUCTS**

**2.1 TOILET ROOM ACCESSORIES**

- A. Provide products of Bobrick Washroom Equipment Company, or approved equal, at each toilet room. See drawings for Toilet Accessories Schedule.
- B. Products by the following manufacturers are approved to the extent they meet the performance and quality standards of the products specified:
  - 1. Bobrick Washroom Equipment Co.
  - 2. Bradley Corporation
  - 3. American Specialties Inc.
  - 4. General Accessory Manuf. Co.
  - 5. Koala
  - 6. Xlerator
  - 7. San Jamar
  - 8. Scranton Products
- B. All brackets, clips, screws, fasteners, or other materials shall be stainless steel (Type 316 if available) or aluminum.

**2.2 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. See note 2.1.C above.

## 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 INSTALLATION

- A. Coordinate as required with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section.
- B. Install each item in its proper location, firmly anchored into position, level and plumb, and in accordance with the manufacturer's recommendations.

END OF SECTION

**SECTION 15082**  
**PIPING INSULATION**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Piping insulation.

**1.02 REFERENCE STANDARDS**

- A. ASTM C534/C534M - Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form; 2013.
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2013a.
- C. NFPA 255 - Standard Method of Test of Surface Burning Characteristics of Building Materials; National Fire Protection Association; 2006.
- D. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials; Underwriters Laboratories Inc.; Current Edition, Including All Revisions.

**1.03 SUBMITTALS**

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.

**PART 2 PRODUCTS**

**2.01 REQUIREMENTS FOR ALL PRODUCTS OF THIS SECTION**

- A. Surface Burning Characteristics: Flame spread/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84, NFPA 255, or UL 723.

**2.02 FLEXIBLE ELASTOMERIC CELLULAR INSULATION**

- A. Manufacturer:
  - 1. Armacell LLC; [AP Armaflex w/ ArmaTuff Plus II]: [www.armacell.us](http://www.armacell.us).
  - 2. K-Flex USA LLC: [www.kflexusa.com](http://www.kflexusa.com).
  - 3. Approved Equal.
- B. Insulation: Preformed flexible elastomeric cellular rubber insulation complying with ASTM C534/C534M Grade 1; use molded tubular material wherever possible.
  - 1. Minimum Service Temperature: -40 degrees F.
  - 2. Maximum Service Temperature: 220 degrees F.
  - 3. Connection: Waterproof vapor barrier adhesive.
- C. Covering:
  - 1. Shall be a 16 mil laminate polymeric film, coated with pressure sensitive acrylic adhesive and kraft release liner.
  - 2. Laminate composites shall be UV resistant, highly puncture and tear resistant.
  - 3. Water Vapor Permiability: 0 perm.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify that piping has been tested before applying insulation materials.
- B. Verify that surfaces are clean and dry, with foreign material removed.

**3.02 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.

**3.03 SCHEDULES**

- A. Plumbing Systems:

1. Domestic Cold Water (All above grade piping):
  - a. Flexible Elastomeric Cellular Insulation:
    - 1) Pipe Size Range: All sizes.
    - 2) Thickness: 1 inch.

**END OF SECTION**

**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 REFERENCE STANDARDS**

- A. ASTM D1785 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120; 2012.
- B. ASTM D2241 - Standard Specification for Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series); 2009.
- C. ASTM D2564 - Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems; 2012.
- D. ASTM D2665 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings; 2012.
- E. ASTM D2846/D2846M - Standard Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Hot- and Cold-Water Distribution Systems; 2009b.
- F. ASTM D2855 - Standard Practice for Making Solvent-Cemented Joints with Poly(Vinyl Chloride) (PVC) Pipe and Fittings; 1996 (Reapproved 2010).
- G. ASTM D3034 - Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings; 2008.
- H. ASTM F493 - Standard Specification for Solvent Cements for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe and Fittings; 2010.
- I. ASTM F876 - Standard Specification for Crosslinked Polyethylene (PEX) Tubing; 2013a.
- J. ASTM F877 - Standard Specification for Crosslinked Polyethylene (PEX) Plastic Hot- and Cold-Water Distribution Systems; 2011.
- K. AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe, 4 In. Through 12 In. (100 mm Through 300 mm), for Water Transmission and Distribution; American Water Works Association; 2007 (ANSI/AWWA C900).
- L. PPI TR-4 - PPI Listing of Hydrostatic Design Basis (HDB), Hydrostatic Design Stress (HDS), Strength Design Basis (SDB), Pressure Design Basis (PDB), and Minimum Required Strength (MRS) Ratings For Thermoplastic Piping Materials or Pipe; Plastics Pipe Institute; 2013.

**1.03 SUBMITTALS**

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on pipe materials, pipe fittings, valves, and accessories. Provide manufacturers catalog information. Indicate valve data and ratings.

**PART 2 PRODUCTS**

**2.01 SANITARY SEWER PIPING, BURIED BEYOND 5 FEET OF BUILDING**

- A. PVC Pipe: ASTM D2665 or ASTM D3034.
  - 1. Fittings: PVC.
  - 2. Joints: Solvent welded, with ASTM D2564 solvent cement.

**2.02 SANITARY SEWER PIPING, BURIED WITHIN 5 FEET OF BUILDING**

- A. PVC Pipe: ASTM D2665 or ASTM D3034.
  - 1. Fittings: PVC.
  - 2. Joints: Solvent welded, with ASTM D2564 solvent cement.

### **2.03 SANITARY SEWER PIPING, ABOVE GRADE**

- A. PVC Pipe: ASTM D2665.
  - 1. Fittings: PVC.
  - 2. Joints: Solvent welded, with ASTM D2564 solvent cement.

### **2.04 WATER PIPING, BURIED BEYOND 5 FEET OF BUILDING**

- A. PVC Pipe: AWWA C900.

### **2.05 WATER PIPING, BURIED WITHIN 5 FEET OF BUILDING**

- A. PVC Pipe: ASTM D1785 or ASTM D2241.
  - 1. Fittings: ASTM D2665, PVC.
  - 2. Joints: ASTM D2846/D2846M, solvent weld with ASTM F493 solvent cement.

### **2.06 WATER PIPING, ABOVE GRADE**

- A. Cross-Linked Polyethylene Pipe: ASTM F876 or ASTM F877.
  - 1. PPI TR-4 Pressure Design Basis:
    - a. 100 psig at maximum 180 degrees F.
  - 2. Fittings: Brass and copper.
  - 3. Joints: Mechanical compression fittings.

### **2.07 PIPE HANGERS AND SUPPORTS**

- A. All hangers and supports shall be fiberglass or 316 stainless steel.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings. Refer to Section 22 0719.
- C. PVC Pipe: Make solvent-welded joints in accordance with ASTM D2855.

**END OF SECTION**

**SECTION 15146**  
**PLUMBING SPECIALTIES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Floor drains (FD).
- B. Cleanouts (CO).
- C. Wall Hydrants (HY).
- D. Heating Cable.

**1.02 REFERENCE STANDARDS**

- A. ASSE 1019 - Vacuum Breaker Wall Hydrants, Freeze Resistant Automatic Draining Type; American Society of Sanitary Engineering; 2011 (ANSI/ASSE 1019).

**1.03 SUBMITTALS**

- A. See Section 01340 - Submittals & Substitutions, for submittal procedures.
- B. Product Data: Provide component sizes, rough-in requirements, service sizes, and finishes.
- C. Shop Drawings: Indicate dimensions, weights, and placement of openings and holes.

**PART 2 PRODUCTS**

**2.01 FLOOR DRAIN (FD):**

- A. Manufacturers:
  - 1. Plastic Oddities; Model PHD840R: [www.plasticoddities.com](http://www.plasticoddities.com).
  - 2. Jay R. Smith Manufacturing Co.: [www.jrsproducts.com](http://www.jrsproducts.com)
  - 3. Josam Co.: [www.josam.com](http://www.josam.com).
  - 4. Approved Equal.
- B. PVC heavy-duty floor drain.
- C. Polished brass strainer and round ring.

**2.02 CLEANOUTS (CO)**

- A. Cleanouts at Interior Finished Floor Areas (CO):
  - 1. Lacquered cast iron body with anchor flange, threaded top assembly, and round gasketed scored cover in service areas and round gasketed depressed cover to accept floor finish in finished floor areas.

**2.03 WALL HYDRANTS (HY)**

- A. Manufacturers:
  - 1. Woodford Mfg.; Model 65: [www.woodfordmfg.com](http://www.woodfordmfg.com).
  - 2. Approved Equal.
- B. Wall Hydrants:
  - 1. ASSE 1019-B; freeze resistant, self-draining type with chrome plated wall plate hose thread spout, lockshield and removable key, and integral vacuum breaker.

**2.04 HEATING CABLE**

- A. Manufacturers:
  - 1. Chromalox Precision Heat and Control; SRF3-1C: [www.chromalox.com](http://www.chromalox.com).
  - 2. Approved Equal.
- B. Wattage: Three (3) watts per linear foot.
- C. Options/Accessories:
  - 1. TPR Overjacket.
  - 2. RTAS Thermostat.

**PART 3 EXECUTION**

**3.01 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.

**END OF SECTION**

**SECTION 15410**  
**PLUMBING FIXTURES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Water closets (WC).
- B. Urinals (UR).
- C. Lavatories (LV).
- D. Drinking fountains (DF).

**1.02 REFERENCE STANDARDS**

- A. ANSI A117.1 - Accessible and Usable Buildings and Facilities; 2009.
- B. NSF/ANSI 61/372 - Drinking water system components - Lead content; 2010.
- C. ASME A112.18.1 - Plumbing Supply Fittings; The American Society of Mechanical Engineers; 2012.
- D. ASME A112.19.2 - Ceramic Plumbing Fixtures; The American Society of Mechanical Engineers; 2013.

**1.03 SUBMITTALS**

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide catalog illustrations of fixtures, sizes, rough-in dimensions, utility sizes, trim, and finishes.

**PART 2 PRODUCTS**

**2.01 FLUSH VALVE WATER CLOSETS (WC)**

- A. Water Closets: Vitreous china, ASME A112.19.2, wall hung, siphon jet flush action, china bolt caps.
  - 1. Flush Valve: Exposed (top spud).
  - 2. Flush Operation: Manual, oscillating handle.
  - 3. Handle Height: 44 inches or less.
  - 4. Color: White.
  - 5. Manufacturers:
    - a. Mansfield Plumbing Products LLC; Model 1301: [www.mansfieldplumbing.com](http://www.mansfieldplumbing.com).
    - b. Approved Equal.
- B. Flush Valves: ASME A112.18.1, diaphragm type, complete with vacuum breaker stops and accessories.
  - 1. Exposed Type: Chrome plated, escutcheon, integral screwdriver stop.
  - 2. Manufacturers:
    - a. Mansfield Plumbing Products LLC; Model FM-T2: [www.mansfieldplumbing.com](http://www.mansfieldplumbing.com)
    - b. Approved Equal.
- C. Seats:
  - 1. Manufacturers:
    - a. Church Seat Company: [www.churchseats.com](http://www.churchseats.com).
    - b. Olsonite: [www.olsonite.com](http://www.olsonite.com).
    - c. Approved Equal
  - 2. Solid white plastic, open front, extra heavy duty, self-sustaining hinge, brass bolts, without cover.
- D. Water Closet Carriers:
  - 1. Manufacturers:
    - a. JOSAM Company: [www.josam.com](http://www.josam.com).
    - b. Zurn Industries, Inc; Model Z1280: [www.zurn.com](http://www.zurn.com).

## 2.02 WALL HUNG URINALS (UR)

- A. Wall Hung Urinal Manufacturers:
  - 1. Mansfield Plumbing Products LLC; Model 410HE: [www.mansfieldplumbing.com](http://www.mansfieldplumbing.com).
  - 2. Approved Equal.
- B. Urinals: Vitreous china, ASME A112.19.2, wall hung with side shields and concealed carrier.
  - 1. Flush Volume: 0.5 gallon, maximum.
  - 2. Flush Valve: Exposed (top spud).
  - 3. Flush Operation: Sensor operated.
  - 4. Trap: Integral.
- C. Flush Valves: ASME A112.18.1, diaphragm type, complete with vacuum breaker stops and accessories.
  - 1. Sensor-Operated Type: Solenoid operator, low voltage hard-wired, infrared sensor and over-ride push button.
  - 2. Exposed Type: Chrome plated, escutcheon, integral screwdriver stop.
  - 3. Manufacturers:
    - a. Mansfield Plumbing Products LLC; Model FM-U5: [www.mansfieldplumbing.com](http://www.mansfieldplumbing.com)
    - b. Approved Equal.
- D. Carriers:
  - 1. Manufacturers:
    - a. JOSAM Company: [www.josam.com](http://www.josam.com).
    - b. Zurn Industries, Inc: [www.zurn.com](http://www.zurn.com).
    - c. Approved Equal.

## 2.03 LAVATORIES (LV)

- A. Lavatory Manufacturers:
  - 1. Mansfield Plumbing Products LLC; Model 2018HBNS-4: [www.mansfieldplumbing.com](http://www.mansfieldplumbing.com)
  - 2. Approved Equal.
- B. Vitreous China Wall Hung Basin: ASME A112.19.2; vitreous china wall hung lavatory, 22 by 10 inch minimum, with 4 inch high back, rectangular basin with splash lip, front overflow, and soap depression.
  - 1. Drilling Centers: 4 inch.
- C. Metered Faucet: ASME A112.18.1; chrome plated metered mixing faucet with battery operated solenoid operator and infrared sensor, aerator and cover plate, open grid strainer.

## 2.04 DRINKING FOUNTAINS (DF)

- A. Drinking Fountain Manufacturers:
  - 1. Elkay Manufacturing Company; Model LK4593FR: [www.elkay.com](http://www.elkay.com).
  - 2. Halsey Taylor: [www.halseytaylor.com](http://www.halseytaylor.com).
  - 3. Haws Corporation: [www.hawsc.com](http://www.hawsc.com).
  - 4. Approved Equal.
- B. Fountain:
  - 1. Face-mounted, weather-resistant exposed stone aggregate fountain.
  - 2. Freeze-resistant valve system.
  - 3. Shall have a pushbutton on the front.
  - 4. Shall include contoured-formed basin to eliminate splashing and standing water and shall have rounded corners and edges.
  - 5. Projector shall be chrome-plated vandal-resistant type with integral hood guard and anti-squirt feature.
  - 6. Fountain shall comply with ANSI 117.1 and ADA for visual and motion disabilities.
  - 7. Manufacturer shall certify the unit to meet the requirements of NSF/ANSI 61/372, and the Safe Drinking Water Act.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that walls and floor finishes are prepared and ready for installation of fixtures.

#### **3.02 PREPARATION**

- A. Rough-in fixture piping connections in accordance with minimum sizes indicated in fixture rough-in schedule for particular fixtures.

#### **3.03 INSTALLATION**

- A. Provide chrome plated rigid or flexible supplies to fixtures with loose key stops, reducers, and escutcheons.
- B. Install components level and plumb.
- C. Install and secure fixtures in place with wall supports and bolts.

**END OF SECTION**

**SECTION 15430**  
**PLUMBING EQUIPMENT**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Pumps.
  - 1. Circulators.

**1.02 SUBMITTALS**

- A. See Section 01340 - Submittals & Substitutions, for submittal procedures.
- B. Product Data:
  - 1. Provide dimension drawings of water heaters indicating components and connections to other equipment and piping.
  - 2. Indicate pump type, capacity, power requirements.
  - 3. Provide certified pump curves showing pump performance characteristics with pump and system operating point plotted. Include NPSH curve when applicable.
  - 4. Provide electrical characteristics and connection requirements.

**1.03 CERTIFICATIONS**

**PART 2 PRODUCTS**

**2.01 IN-LINE CIRCULATOR PUMPS**

- A. Manufacturers:
  - 1. Grundfos Model UP10-16BU ATLC: [www.grundfos.com](http://www.grundfos.com).
  - 2. Armstrong Pumps Inc: [www.armstrongpumps.com](http://www.armstrongpumps.com).
  - 3. ITT Bell & Gossett: [www.bellgossett.com](http://www.bellgossett.com).
  - 4. Taco Inc.: [www.taco-hvac.com](http://www.taco-hvac.com).
  - 5. Approved Equal.
- B. Casing: Bronze, rated for 125 psig working pressure, with stainless steel rotor assembly.
- C. Impeller: Bronze.
- D. Shaft: Alloy steel with integral thrust collar and two oil lubricated bronze sleeve bearings.
- E. Seal: Carbon rotating against a stationary ceramic seat.
- F. Drive: Flexible coupling.
- G. Performance:
  - 1. Flow: 30 gpm, at 10 feet head.
  - 2. Electrical Characteristics:
    - a. \_\_\_\_\_ hp.
    - b. \_\_\_\_\_ volts, single phase, 60 Hz, \_\_\_\_\_ minimum circuit ampacity.

**PART 3 EXECUTION**

**3.01 INSTALLATION**

- A. Install plumbing equipment in accordance with manufacturer's instructions, as required by code, and complying with conditions of certification, if any.
- B. Coordinate with plumbing piping and related electrical work to achieve operating system.
- C. Pumps:
  - 1. Ensure pumps operate at specified system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation, and operate within 25 percent of midpoint of published maximum efficiency curve.

**END OF SECTION**

**SECTION 15810**  
**DUCTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Metal ductwork.
- B. Duct cleaning.

**1.02 REFERENCE STANDARDS**

- A. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2010.
- B. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate [Metric]; 2010.
- C. SMACNA (DCS) - HVAC Duct Construction Standards; 2005.

**1.03 SUBMITTALS**

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data for duct materials.

**PART 2 PRODUCTS**

**2.01 DUCT ASSEMBLIES**

- A. General Exhaust: 1/2 inch w.g. pressure class, aluminum.

**2.02 MATERIALS**

- A. Aluminum for Ducts: ASTM B209 (ASTM B209M); aluminum sheet, alloy 3003-H14. Aluminum Connectors and Bar Stock: Alloy 6061-T651 or of equivalent strength.

**2.03 DUCTWORK FABRICATION**

- A. Fabricate and support in accordance with SMACNA HVAC Duct Construction Standards and as indicated.
- B. Provide duct material, thicknesses, reinforcing, and sealing for operating pressures indicated.
- C. Construct T's, bends, and elbows with radius of not less than 1-1/2 times width of duct on centerline unless otherwise shown on plans or not possible.
- D. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.

**2.04 MANUFACTURED DUCTWORK AND FITTINGS**

- A. Flexible Ducts: UL 181, Class 1, aluminum laminate and polyester film with latex adhesive supported by helically wound spring steel wire.
  - 1. Pressure Rating: 10 inches WG positive and 1.0 inches WG negative.
  - 2. Maximum Velocity: 4000 fpm.
  - 3. Temperature Range: -20 degrees F to 210 degrees F.

**PART 3 EXECUTION**

**3.01 INSTALLATION**

- A. Install, support, and seal ducts in accordance with SMACNA HVAC Duct Construction Standards.
- B. Install in accordance with manufacturer's instructions.
- C. Duct sizes indicated are inside clear dimensions.
- D. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.

**3.02 CLEANING**

- A. Clean duct system and force air at high velocity through duct to remove accumulated dust. To obtain sufficient air, clean half the system at a time. Protect equipment that could be harmed by excessive dirt with temporary filters, or bypass during cleaning.

**END OF SECTION**

**SECTION 15820**  
**DUCT ACCESSORIES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Wallcaps.
- B. Fire dampers.

**1.02 RELATED REQUIREMENTS**

- A. Section 15810 - Ducts.

**1.03 REFERENCE STANDARDS**

- A. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems; National Fire Protection Association; 2012.
- B. SMACNA (DCS) - HVAC Duct Construction Standards; 2005.
- C. UL 33 - Heat Responsive Links for Fire-Protection Service; Underwriters Laboratories Inc.; Current Edition, Including All Revisions.
- D. UL 555 - Standard for Fire Dampers; Underwriters Laboratories Inc.; Current Edition, Including All Revisions.

**1.04 SUBMITTALS**

- A. Comply with pertinent provisions of Section 01340.
- B. Provide product data including dimensions, materials and installation instructions.

**PART 2 PRODUCTS**

**2.01 BACKDRAFT DAMPERS - PVC**

- A. Manufacturers:
  - 1. Plastec Ventilation, Inc.: [www.plastecvent.net](http://www.plastecvent.net).
  - 2. Greenheck Fan Corporation: [www.greenheck.com](http://www.greenheck.com).
  - 3. Chemical Systems Services, Inc.: [www.chemicalsystems.net](http://www.chemicalsystems.net).
- B. Shall fit round schedule 40 PVC duct, sizes as shown on drawings.
- C. Shall be UV treated.
- D. All internal parts shall be plastic.

**2.02 FIRE DAMPERS**

- A. Manufacturers:
  - 1. Louvers & Dampers, Inc: [www.louvers-dampers.com](http://www.louvers-dampers.com).
  - 2. Nailor Industries Inc: [www.nailor.com](http://www.nailor.com).
  - 3. Ruskin Company: [www.ruskin.com](http://www.ruskin.com).
- B. Fabricate in accordance with NFPA 90A and UL 555, and as indicated.
- C. Horizontal Dampers: Stainless steel, 22 gage frame, stainless steel closure spring, and lightweight, heat retardant non-asbestos fabric blanket.
- D. Fusible Links: UL 33, separate at 160 degrees F with adjustable link straps for combination fire/balancing dampers.

**PART 3 EXECUTION**

**3.01 INSTALLATION**

- A. Install accessories in accordance with manufacturer's instructions, NFPA 90A, and follow SMACNA HVAC Duct Construction Standards. Refer to Section 15810 for duct construction and pressure class.

- B. Provide backdraft dampers on exhaust fans or exhaust ducts nearest to outside and where indicated.
- C. Provide fire dampers at locations indicated, where ducts and outlets pass through fire rated components, and where required by authorities having jurisdiction. Install with required perimeter mounting angles, sleeves, breakaway duct connections, corrosion resistant springs, bearings, bushings and hinges.
- D. Demonstrate re-setting of fire dampers to Owner's representative.

**END OF SECTION**

**SECTION 15833**  
**CENTRIFUGAL FANS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Inline centrifugal fans.

**1.02 SUBMITTALS**

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on centrifugal fans and accessories including fan curves with specified operating point clearly plotted, power, RPM, sound power levels for both fan inlet and outlet at rated capacity, and electrical characteristics and connection requirements.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Fantech; FR Series: [www.fantech.net](http://www.fantech.net).
- B. Spruce Environmental Technologies: [www.spruce.com](http://www.spruce.com).
- C. Greenheck Fan Corporation: [www.greenheck.com](http://www.greenheck.com).Greenheck

**2.02 MOTOR**

- A. External rotor motor.

**2.03 HOUSING**

- A. Shall be a fully sealed plastic housing constructed of UV protected thermoplastic resin.

**2.04 ENVIRONMENTAL**

- A. Shall be listed for outdoor wet locations.

**PART 3 EXECUTION**

**3.01 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.

**END OF SECTION**

**SECTION 15850**  
**AIR OUTLETS AND INLETS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Registers/grilles.

**1.02 SUBMITTALS**

- A. See Section 01300 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data for equipment required for this project. Review outlets and inlets as to size, finish, and type of mounting prior to submission. Submit schedule of outlets and inlets showing type, size, location, application, and noise level.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Nailor; [www.nailor.com](http://www.nailor.com).
- B. Carnes Company HVAC: [www.carnes.com](http://www.carnes.com).
- C. Hart & Cooley, Inc: [www.hartandcooley.com](http://www.hartandcooley.com).
- D. Krueger: [www.krueger-hvac.com](http://www.krueger-hvac.com).
- E. Price Industries: [www.price-hvac.com](http://www.price-hvac.com).
- F. Titus: [www.titus-hvac.com](http://www.titus-hvac.com).

**2.02 WALL EXHAUST REGISTERS/GRILLES**

- A. Type: Streamlined blades, 3/4 inch minimum depth, 3/4 inch maximum spacing, with spring or other device to set blades, vertical face.
- B. Fabrication: 316 stainless steel frame and blades with factory baked enamel finish.
- C. Color: To be selected by Burnette Architecture from manufacturer's standard range.
- D. Damper: Integral, gang-operated, opposed blade type with removable key operator, operable from face.

**PART 3 EXECUTION**

**3.01 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.

**END OF SECTION**

**SECTION 15928**  
**INSTRUMENTS AND CONTROL ELEMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Thermostats.

**1.02 SUBMITTALS**

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide description and engineering data for each control system component.

**PART 2 PRODUCTS**

**2.01 EQUIPMENT - GENERAL**

- A. Products Requiring Electrical Connection: Listed and classified by testing firm acceptable to the authority having jurisdiction as suitable for the purpose specified and indicated.

**2.02 THERMOSTATS**

- A. Line Voltage Thermostats:
  - 1. Manufacturer:
    - a. White-Rogers; Model 176-6: [www.white-rogers.com](http://www.white-rogers.com).
    - b. Approved Equal
  - 2. Hydraulic action element, unaffected by motion and no leveling required.
  - 3. Range: 40 to 80 degrees F.
  - 4. Differential: 3 degrees F.
  - 5. Motor Rating: 14.0A.

**PART 3 EXECUTION**

**3.01 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Check and verify location of thermostats with plans and room details before installation. Locate 60 inches above floor. Align with lighting switches and humidistats. Refer to Section 16140.
- C. Provide conduit and electrical wiring in accordance with Section 16155. Electrical material and installation shall be in accordance with appropriate requirements of Division 16.

**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.
- B. Section 16075 - Electrical Identification: Identification products and requirements.

**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. See Section 01300 - Administrative Requirements for submittals procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for grounding and bonding system components.

**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 Architect. Precipitation within the previous 48 hours does not constitute normally dry conditions.
  - 2. Grounding Electrode System: Not greater than 5 ohms to ground, when tested according to IEEE 81 using "fall-of-potential" method.
- E. Grounding Electrode System:

1. Provide connection to required and supplemental grounding electrodes indicated to form grounding electrode system.
    - a. Provide continuous grounding electrode conductors without splice or joint.
    - b. Install grounding electrode conductors in raceway where exposed to physical damage. Bond grounding electrode conductor to metallic raceways at each end with bonding jumper.
  2. Ground Rod Electrode(s):
    - a. Provide two electrodes unless otherwise indicated or required.
    - b. Space electrodes not less than 10 feet from each other and any other ground electrode.
    - c. Where location is not indicated, locate electrode(s) at least 5 feet outside building perimeter foundation as near as possible to electrical service entrance; where possible, locate in softscape (uncovered) area.
  3. Provide additional ground electrode(s) as required to achieve specified grounding electrode system resistance.
- F. Bonding and Equipment Grounding:
1. Provide bonding for equipment grounding conductors, equipment ground busses, metallic equipment enclosures, metallic raceways and boxes, device grounding terminals, and other normally non-current-carrying conductive materials enclosing electrical conductors/equipment or likely to become energized as indicated and in accordance with NFPA 70.
  2. Provide insulated equipment grounding conductor in each feeder and branch circuit raceway. Do not use raceways as sole equipment grounding conductor.
  3. Where circuit conductor sizes are increased for voltage drop, increase size of equipment grounding conductor proportionally in accordance with NFPA 70.
  4. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
  5. Terminate branch circuit equipment grounding conductors on solidly bonded equipment ground bus only. Do not terminate on neutral (grounded) or isolated/insulated ground bus.
  6. Provide bonding jumper across expansion or expansion/deflection fittings provided to accommodate conduit movement.
  7. Provide bonding for interior metal piping systems in accordance with NFPA 70. This includes, but is not limited to:
    - a. Metal water piping where not already effectively bonded to metal underground water pipe used as grounding electrode.
    - b. Metal gas piping.
  8. Boxes with concentric, eccentric or over-sized knockouts shall be provided with bonding bushings and jumpers. The jumper shall be sized per NFPA 70, Table 250-122 and lugged to the box.

## 2.02 GROUNDING AND BONDING COMPONENTS

- A. General Requirements:
1. Provide products listed, classified, and labeled by 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: 3/4 inch diameter by 10 feet length, unless otherwise indicated.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that work likely to damage grounding and bonding system components has been completed.
- B. Verify that field measurements are as shown on the drawings.
- 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 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.
- E. Identify grounding and bonding system components in accordance with Section 16075.

### **3.03 FIELD QUALITY CONTROL**

- A. Perform ground electrode resistance tests under normally dry conditions. Precipitation within the previous 48 hours does not constitute normally dry conditions.
- B. Investigate and correct deficiencies where measured ground resistances do not comply with specified requirements.

**END OF SECTION**

**SECTION 16070**  
**HANGERS AND SUPPORTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Support and attachment components for equipment, conduit, cable, boxes, and other electrical work.

**1.02 REFERENCE STANDARDS**

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- B. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

**1.03 SUBMITTALS**

- A. See Section 01340 - Submittals & Substitutions, for submittal procedures.
- B. Product Data: Provide manufacturer's catalog data for fastening systems.

**1.04 QUALITY ASSURANCE**

- A. Comply with NFPA 70.
- B. Comply with applicable building code.
- C. Products: Listed and classified by testing firm acceptable to the authority having jurisdiction as suitable for the purpose specified and indicated.

**PART 2 PRODUCTS**

**2.01 SUPPORT AND ATTACHMENT COMPONENTS**

- A. General Requirements:
  - 1. Provide all required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for the complete installation of electrical work.
  - 2. 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, where applicable.
  - 3. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for the load to be supported. Include consideration for vibration, equipment operation, and shock loads where applicable.
  - 4. Do not use products for applications other than as permitted by NFPA 70 and product listing.
  - 5. Components: Use corrosion resistant materials suitable for the environment where installed.
    - a. Indoor Dry Locations: Use PVC, fiberglass, 316 stainless steel or approved equal unless otherwise indicated.
    - b. Outdoor and Damp or Wet Indoor Locations: Use PVC, fiberglass, 316 stainless steel or approved equal unless otherwise indicated.

**PART 3 EXECUTION**

**3.01 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
- B. Install support and attachment components in a neat and workmanlike manner in accordance with NECA 1.
- C. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.

- D. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.
- E. Secure fasteners according to manufacturer's recommended torque settings.
- F. Remove temporary supports.
- G. Install hangers and supports as required to adequately and securely support electrical system components, in a neat and workmanlike manner, as specified in NECA 1.
  - 1. Do not fasten supports to pipes, ducts, mechanical equipment, or conduit.
  - 2. Do not drill or cut structural members.
- H. Install surface-mounted cabinets and panelboards with minimum of four anchors.

**END OF SECTION**

## **SECTION 16075**

### **ELECTRICAL IDENTIFICATION**

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Electrical identification requirements.
- B. Identification nameplates and labels.
- C. Wire and cable markers.
- D. Warning signs and labels.

##### **1.02 RELATED REQUIREMENTS**

- A. Section 16123 - Building Wire and Cable: Color coding for power conductors and cables 600 V and less; vinyl color coding electrical tape.

##### **1.03 REFERENCE STANDARDS**

- A. ANSI Z535.2 - American National Standard for Environmental and Facility Safety Signs; 2011.
- B. ANSI Z535.4 - American National Standard for Product Safety Signs and Labels; 2011.
- C. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- D. UL 969 - Marking and Labeling Systems; Current Edition, Including All Revisions.

##### **1.04 SUBMITTALS**

- A. See Section 01340 - Submittals & Substitutions, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for each product.
- C. Shop Drawings: Provide schedule of items to be identified indicating proposed designations, materials, legends, and formats.

##### **1.05 QUALITY ASSURANCE**

- A. Conform to requirements of NFPA 70.

#### **PART 2 PRODUCTS**

##### **2.01 IDENTIFICATION REQUIREMENTS**

- A. Identification for Equipment:
  - 1. Use identification nameplate to identify each piece of electrical distribution and control equipment and associated sections, compartments, and components.
    - a. Panelboards:
      - 1) See Sheet E2 for detail of nameplates for panelboards.
      - 2) Use typewritten or neatly handwritten circuit directory to identify load(s) served for panelboards with a door. Identify spares and spaces using pencil.
  - 2. Arc Flash Hazard Warning Labels: Use warning labels to identify arc flash hazards for electrical equipment such as panelboards and industrial control panels.
    - a. Minimum Size: 3.5 by 5 inches.
    - b. Legend: Include orange header that reads "WARNING", followed by the word message "Arc Flash and Shock Hazard; Appropriate PPE Required; Do not operate controls or open covers without appropriate personal protection equipment; Failure to comply may result in injury or death; Refer to NFPA 70E for minimum PPE requirements" or approved equivalent.
- B. Identification for Conductors and Cables:
  - 1. Color Coding for Power Conductors 600 V and Less: Comply with Section 16123.

2. Use wire and cable markers to identify circuit number or other designation indicated for power, control, and instrumentation conductors and cables at the following locations:
  - a. At each source and load connection.
  - b. Within boxes.
  - c. Within equipment enclosures.
- C. Identification for Boxes:
  1. Use identification labels or handwritten text using indelible marker to identify circuits enclosed.
- D. Identification for Devices:
  1. Use identification label to identify serving branch circuit loads.

## 2.02 IDENTIFICATION NAMEPLATES AND LABELS

- A. Identification Nameplates:
  1. Materials:
    - a. Indoor Clean, Dry Locations: Use plastic nameplates.
    - b. Outdoor Locations: Use plastic nameplates suitable for exterior use.
  2. Plastic Nameplates: Two-layer or three-layer laminated acrylic or electrically non-conductive phenolic with beveled edges; minimum thickness of 1/16 inch; engraved text.
  3. Mounting Holes for Mechanical Fasteners: Two, centered on sides for sizes up to 1 inch high; Four, located at corners for larger sizes.
- B. Identification Labels:
  1. Materials: Use self-adhesive laminated plastic labels; UV, chemical, water, heat, and abrasion resistant.
  2. Text: Use factory pre-printed or machine-printed text. Do not use handwritten text unless otherwise indicated.
- C. Format for Equipment Identification:
  1. Minimum Size: 1 inch by 2.5 inches.
  2. Text: All capitalized unless otherwise indicated.
  3. Minimum Text Height:
    - a. Equipment Designation: 5/8 inch.
    - b. Other Information: 1/2 inch.
  4. Color:
    - a. Normal Power System:
      - 1) 120/240 V, 1 Phase Equipment: White text on [black] background.
- D. Format for Caution and Warning Messages:
  1. Minimum Size: 2 inches by 4 inches.
  2. Legend: Include information or instructions indicated or as required for proper and safe operation and maintenance.
  3. Text: All capitalized unless otherwise indicated.
  4. Minimum Text Height: 1/2 inch.
  5. Color: Black text on yellow background unless otherwise indicated.

## 2.03 WIRE AND CABLE MARKERS

- A. Markers for Conductors and Cables: Use wrap-around self-adhesive vinyl cloth, wrap-around self-adhesive vinyl self-laminating, heat-shrink sleeve, plastic sleeve, plastic clip-on, or vinyl split sleeve type markers suitable for the conductor or cable to be identified.
- B. Markers for Conductor and Cable Bundles: Use plastic marker tags secured by nylon cable ties.
- C. Legend: Power source and circuit number or other designation indicated.
- D. Text: Use factory pre-printed or machine-printed text, all capitalized unless otherwise indicated.
- E. Minimum Text Height: 1/8 inch.

- F. Color: Black text on white background unless otherwise indicated.

## **2.04 WARNING SIGNS AND LABELS**

- A. Comply with ANSI Z535.2 or ANSI Z535.4 as applicable.
- B. Warning Signs:
  - 1. Materials:
  - 2. Minimum Size: 7 by 10 inches unless otherwise indicated.
- C. Warning Labels:
  - 1. Materials: Use factory pre-printed or machine-printed self-adhesive polyester or self-adhesive vinyl labels; UV, chemical, water, heat, and abrasion resistant; produced using materials recognized to UL 969.
  - 2. Machine-Printed Labels: Use thermal transfer process printing machines and accessories recommended by label manufacturer.
  - 3. Minimum Size: 2 by 4 inches unless otherwise indicated.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
- B. Install identification products to be plainly visible for examination, adjustment, servicing, and maintenance. Unless otherwise indicated, locate products as follows:
  - 1. Surface-Mounted Equipment: Enclosure front.
  - 2. Flush-Mounted Equipment: Inside of equipment door.
  - 3. Interior Components: Legible from the point of access.
  - 4. Boxes: Outside face of cover.
  - 5. Conductors and Cables: Legible from the point of access.
  - 6. Devices: Outside face of cover.
- C. Install identification products centered, level, and parallel with lines of item being identified.
- D. Secure nameplates to exterior surfaces of enclosures using stainless steel screws and to interior surfaces using self-adhesive backing or epoxy cement.
- E. Install self-adhesive labels and markers to achieve maximum adhesion, with no bubbles or wrinkles and edges properly sealed.
- F. Mark all handwritten text, where permitted, to be neat and legible.

**END OF SECTION**

**SECTION 16123**  
**BUILDING WIRE AND CABLE**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Single conductor building wire.
- B. Wire and cable for 600 volts and less.
- C. Wiring connectors.
- D. Electrical tape.
- E. Wire pulling lubricant.

**1.02 REFERENCE STANDARDS**

- A. ASTM B3 - Standard Specification for Soft or Annealed Copper Wire; 2013.
- 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. ASTM D3005 - Standard Specification for Low-Temperature Resistant Vinyl Chloride Plastic Pressure-Sensitive Electrical Insulating Tape; 2010.
- F. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- G. 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).
- H. NFPA 70 - National Electrical Code; National Fire Protection Association; 2011.
- I. UL 44 - Thermoset-Insulated Wires and Cables; Current Edition, Including All Revisions.
- J. UL 83 - Thermoplastic-Insulated Wires and Cables; Current Edition, Including All Revisions.
- K. UL 486A-486B - Wire Connectors; Current Edition, Including All Revisions.
- L. UL 486C - Splicing Wire Connectors; Current Edition, Including All Revisions.
- M. UL 486D - Sealed Wire Connector Systems; Current Edition, Including All Revisions.
- N. UL 510 - Polyvinyl Chloride, Polyethylene, and Rubber Insulating Tape; Current Edition, Including All Revisions.

**1.03 SUBMITTALS**

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for conductors and cables, including detailed information on materials, construction, ratings, listings, and available sizes, configurations, and stranding.

**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.
- C. Shore Installations: Use only building wire in raceway.
- D. Feeders to Floating Docks:

1. Underground Installations: Use only industrial power cable in schedule 80 PVC conduit.
2. Exterior (under dock) Installations: Use only industrial power cable.

## **2.02 CONDUCTOR AND CABLE GENERAL REQUIREMENTS**

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products listed and classified by Underwriters Laboratories Inc. or testing firm acceptable to the authority having jurisdiction 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. Provide copper conductors only. Aluminum conductors are not acceptable for this project. Conductor sizes indicated are based on copper.
  2. Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B 787M unless otherwise indicated.
  3. Tinned Copper Conductors: Comply with ASTM B33.
- H. Minimum Conductor Size:
  1. Branch Circuits: 12 AWG.
    - a. Exceptions:
      - 1) 20 A, 120 V circuits longer than 75 feet: 10 AWG, for voltage drop.
      - 2) 20 A, 120 V circuits longer than 150 feet: 8 AWG, for voltage drop.
- I. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
- J. 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.
    - a. Conductors size 4 AWG and larger may have black insulation color coded using vinyl color coding electrical tape.
  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 INDUSTRIAL PORTABLE POWER CABLE**

- A. Manufacturers:
  1. Southwire Company: [www.southwire.com](http://www.southwire.com).
  2. Allied Wire & Cable: [www.awcwire.com](http://www.awcwire.com).
  3. Approved Equal.
- B. Description: NFPA 70, Type W.
  1. Type SOOW cable is not acceptable.
- C. Conductor: Copper.
- D. Insulation Voltage Rating: 2000 volts.
- E. Cable shall be listed for extra-hard usage, wet locations and sunlight resistance.

## 2.04 BUILDING WIRE

- A. Manufacturers:
  - 1. Copper Building Wire:
    - a. Cerro Wire LLC: [www.cerrowire.com](http://www.cerrowire.com).
    - b. Encore Wire Corporation: [www.encorewire.com](http://www.encorewire.com).
    - c. Southwire Company: [www.southwire.com](http://www.southwire.com).
    - d. Approved Equal.
- B. Description: Single conductor insulated wire.
- C. Conductor Stranding:
  - 1. Feeders and Branch Circuits:
    - a. Size 10 AWG and Smaller: Solid.
    - b. Size 8 AWG and Larger: Stranded.
  - 2. Control Circuits: Stranded.
- D. Insulation Voltage Rating: 600 V.
- E. Insulation:
  - 1. Copper Building Wire: Type THHN/THWN or THHN/THWN-2, except as indicated below.
    - a. Size 4 AWG and Larger: Type XHHW-2.
- F. Conductor: Copper.

## 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.
- B. Wiring Connectors for Splices and Taps:
  - 1. Copper Conductors Size 8 AWG and Smaller: Use twist-on insulated spring connectors.
- C. Twist-on Insulated Spring Connectors: Rated 600 V, 221 degrees F for standard applications and 302 degrees F for high temperature applications; pre-filled with sealant and listed as complying with UL 486D for damp and wet locations.
  - 1. Manufacturers:
    - a. 3M: [www.3m.com](http://www.3m.com).
    - b. Ideal Industries, Inc: [www.idealindustries.com](http://www.idealindustries.com).
    - c. NSI Industries LLC: [www.nsiindustries.com](http://www.nsiindustries.com).
    - d. Approved Equal.

## 2.06 WIRING ACCESSORIES

- A. Electrical Tape:
  - 1. Manufacturers:
    - a. 3M: [www.3m.com](http://www.3m.com).
    - b. Plymouth Rubber Europa: [www.plymouthrubber.com](http://www.plymouthrubber.com).
    - c. Appoved Equal.
  - 2. Vinyl Color Coding Electrical Tape: Integrally colored to match color code indicated; listed as complying with UL 510; minimum thickness of 7 mil; resistant to abrasion, corrosion, and sunlight; suitable for continuous temperature environment up to 221 degrees F.
  - 3. Vinyl Insulating Electrical Tape: Complying with ASTM D3005 and listed as complying with UL 510; minimum thickness of 7 mil; resistant to abrasion, corrosion, and sunlight; conformable for application down to 0 degrees F and suitable for continuous temperature environment up to 221 degrees F.
- B. Wire Pulling Lubricant: Listed; suitable for use with the conductors or cables to be installed and suitable for use at the installation temperature.

## **PART 3 EXECUTION**

### **3.01 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. Paralleled Conductors: Install conductors of the same length and terminate in the same manner.
- E. 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.
- F. Install conductors with a minimum of 12 inches of slack at each outlet.
- G. Neatly train and bundle conductors inside boxes, wireways, panelboards and other equipment enclosures.
- H. Group or otherwise identify neutral/grounded conductors with associated ungrounded conductors inside enclosures in accordance with NFPA 70.
- I. 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 contaminates. Do not use wire brush on plated connector surfaces.
- J. 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.
- K. Insulate ends of spare conductors using vinyl insulating electrical tape.
- L. Field-Applied Color Coding: Where vinyl color coding electrical tape is used in lieu of integrally colored insulation as permitted in Part 2 under "Color Coding", apply half overlapping turns of tape at each termination and at each location conductors are accessible.
- M. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07840.
- N. 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.
- O. Pull all conductors into raceway at same time.
- P. Use suitable wire pulling lubricant for building wire 4 AWG and larger.
- Q. Clean conductor surfaces before installing lugs and connectors.
- R. Make terminations to carry full ampacity of conductors with no perceptible temperature rise.
- S. Identify and color code wire and cable under provisions of Section 26 0553. Identify each conductor with its circuit number.

**END OF SECTION**

**SECTION 16131**  
**CONDUIT**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Rigid polyvinyl chloride (PVC) conduit.
- B. Liquidtight flexible nonmetallic conduit (LFNC).
- C. Conduit fittings.
- D. Accessories.

**1.02 RELATED REQUIREMENTS**

- A. Section 16070 - Hangers and Supports.

**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 FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; National Electrical Manufacturers Association; 2012 (ANSI/NEMA FB 1).
- 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 514B - Conduit, Tubing, and Cable Fittings; Current Edition, Including All Revisions.
- H. UL 651 - Schedule 40 and 80 Rigid PVC Conduit and Fittings; Current Edition, Including All Revisions.
- I. UL 1660 - Liquid-Tight Flexible Nonmetallic Conduit; Current Edition, Including All Revisions.

**1.04 SUBMITTALS**

- A. See Section 01300 - Administrative Requirements for submittals procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for conduits and fittings.

**1.05 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. All Locations: Use rigid PVC conduit.
- C. Connections to Vibrating Equipment: Use liquidtight flexible nonmetallic conduit.
  - 1. Maximum Length: 6 feet unless otherwise indicated.
  - 2. Vibrating equipment includes, but is not limited to:
    - a. Motors.
    - b. HVAC Equipment.

## 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 testing firm acceptable to authority having jurisdiction as suitable for the purpose indicated.
- C. Minimum Conduit Size, Unless Otherwise Indicated:
  - 1. 1/2 inch..
- D. Where conduit size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
- E. Where conduits of any type pass over a building expansion joint, a standard "expansion joint fitting," compatible with the type raceway being used, shall be provided.

## 2.03 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. Approve 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. Shall be UV resistant.
- D. 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.

## 2.04 LIQUIDTIGHT FLEXIBLE NONMETALLIC CONDUIT (LFNC)

- A. Manufacturers:
  - 1. AFC Cable Systems, Inc: [www.afcweb.com](http://www.afcweb.com).
  - 2. Electri-Flex Company: [www.electriflex.com](http://www.electriflex.com).
  - 3. International Metal Hose: [www.metalhose.com](http://www.metalhose.com).
  - 4. Approve Equal.
- B. Description: NFPA 70, Type LFNC liquidtight flexible nonmetallic conduit listed and labeled as complying with UL 1660.
- C. Fittings:
  - 1. Manufacturer: Same as manufacturer of conduit to be connected.
  - 2. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B; suitable for the type of conduit to be connected.

## 2.05 ACCESSORIES

- A. Solvent Cement for PVC Conduit and Fittings: As recommended by manufacturer of conduit and fittings to be installed.

## 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 rigid polyvinyl chloride (PVC) conduit in accordance with NECA 111.
- D. Install liquidtight flexible nonmetallic conduit (LFNC) in accordance with NECA 111.
- E. Conduits, junction boxes, troughs and any enclosure mounted outside on the walls, shall be off the wall by one inch.

- F. Conduit Routing:
1. Unless dimensioned, conduit routing indicated is diagrammatic.
  2. When conduit destination is indicated and routing is not shown, determine exact routing required.
  3. Conceal all conduits unless specifically indicated to be exposed.
  4. Arrange conduit to maintain adequate headroom, clearances, and access.
  5. Arrange conduit to provide no more than the equivalent of four 90 degree bends between pull points.
  6. Route conduits above water and drain piping where possible.
  7. Arrange conduit to prevent moisture traps. Provide drain fittings at low points and at sealing fittings where moisture may collect.
  8. Maintain minimum clearance of 6 inches between conduits and piping for other systems.
  9. Maintain minimum clearance of 12 inches between conduits and hot surfaces. This includes, but is not limited to:
    - a. Heaters.
    - b. Hot water piping.
  10. Conduit provided below roof deck shall be installed 2 inches away from the deck to allow for screws not to penetrate the conduit during reroofing.
- G. Conduit Support:
1. Secure and support conduits in accordance with NFPA 70 and Section 16070 using suitable supports and methods approved by the authority having jurisdiction.
  2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
- H. Connections and Terminations:
1. Provide drip loops for liquidtight flexible conduit connections to prevent drainage of liquid into connectors.
- I. 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 sleeves for penetrations as indicated or as required to facilitate installation. Set sleeves flush with exposed surfaces unless otherwise indicated or required.
  4. Conceal bends for conduit risers emerging above ground.
  5. Seal interior of conduits entering the building from underground at first accessible point to prevent entry of moisture and gases.
- J. 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.

**END OF SECTION**

**SECTION 16138**  
**BOXES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Outlet and device boxes up to 100 cubic inches, including those used as junction and pull boxes.
- B. Cabinets and enclosures, including junction and pull boxes larger than 100 cubic inches.

**1.02 RELATED REQUIREMENTS**

- A. Section 16060 - Grounding and Bonding.
- B. Section 16070 - Hangers and Supports.
- C. Section 16140 - Wiring Devices:
  - 1. Wall plates.

**1.03 REFERENCE STANDARDS**

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- B. NECA 130 - Standard for Installing and Maintaining Wiring Devices; National Electrical Contractors Association; 2010.
- C. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); National Electrical Manufacturers Association; 2008.
- 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 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.
- F. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.
- G. UL 508A - Industrial Control Panels; Current Edition, Including All Revisions.

**1.04 SUBMITTALS**

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for outlet and device boxes and junction and pull boxes.

**PART 2 PRODUCTS**

**2.01 BOXES**

- A. General Requirements:
  - 1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
  - 2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
  - 3. 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.
  - 4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
  - 5. Provide grounding terminals within boxes where equipment grounding conductors terminate.
- B. Outlet and Device Boxes Up to 100 cubic inches:
  - 1. Use PVC device boxes in all locations.

2. Boxes for Supporting Luminaires and Ceiling Fans: Listed as suitable for the type and weight of load to be supported; furnished with fixture stud to accommodate mounting of luminaire where required.
3. Boxes for Ganged Devices: Use multigang boxes of single-piece construction.
4. Wall Plates: Comply with Section 16140.
5. Manufacturers:
  - a. Cantex; Type FSC: [www.cantexinc.com](http://www.cantexinc.com).
  - b. Carlon: [www.carlon.com](http://www.carlon.com).
  - c. Cooper Crouse-Hinds, a division of Cooper Industries: [www.cooperindustries.com](http://www.cooperindustries.com).
- C. Cabinets and Enclosures, Including Junction and Pull Boxes Larger Than 100 cubic inches:
  1. Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E, or UL 508A.
  2. NEMA 250 Environment Type, Unless Otherwise Indicated:
    - a. All Locations: PVC, Type 4X.
  3. Junction and Pull Boxes Larger Than 100 cubic inches:
    - a. Provide screw-cover or hinged-cover enclosures unless otherwise indicated.
  4. Manufacturers:
    - a. Cantex: [www.cantexinc.com](http://www.cantexinc.com).
    - b. Carlon: [www.carlon.com](http://www.carlon.com).
    - c. Cooper Crouse-Hinds, a division of Cooper Industries: [www.cooperindustries.com](http://www.cooperindustries.com).
    - d. Hoffman, a brand of Pentair Technical Products: [www.hoffmanonline.com](http://www.hoffmanonline.com).

### **PART 3 EXECUTION**

#### **3.01 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in a neat and workmanlike manner in accordance with NECA 1 and, where applicable, NECA 130, including mounting heights specified in those standards where mounting heights are not indicated.
- C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- D. Box Supports:
  1. Secure and support boxes in accordance with NFPA 70 and Section 16070 using suitable supports and methods approved by the authority having jurisdiction.
  2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
- E. Install boxes plumb and level.
- F. Install boxes as required to preserve insulation integrity.
- G. Close unused box openings.
- H. Install blank wall plates on junction boxes and on outlet boxes with no devices or equipment installed or designated for future use.
- I. Provide grounding and bonding in accordance with Section 16060.

**END OF SECTION**

**SECTION 16140**  
**WIRING DEVICES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Wall switches.
- B. Receptacles.
- C. Wall plates.

**1.02 RELATED REQUIREMENTS**

- A. Section 16138 - Boxes.

**1.03 REFERENCE STANDARDS**

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- B. NEMA WD 1 - General Color Requirements for Wiring Devices; National Electrical Manufacturers Association; 1999 (R 2010).
- C. NEMA WD 6 - Wiring Device -- Dimensional Specifications; National Electrical Manufacturers Association; 2002 (R2008).
- 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 20 - General-Use Snap Switches; Current Edition, Including All Revisions.
- F. UL 498 - Attachment Plugs and Receptacles; Current Edition, Including All Revisions.

**1.04 SUBMITTALS**

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's catalog information showing dimensions, colors, and configurations.

**1.05 QUALITY ASSURANCE**

- A. Conform to requirements of NFPA 70.
- B. Products: Listed and classified by Underwriters Laboratories Inc. or testing firm acceptable to authorities having jurisdiction as suitable for the purpose specified and indicated.

**PART 2 PRODUCTS**

**2.01 WIRING DEVICE APPLICATIONS**

- A. Provide wiring devices suitable for intended use and with ratings adequate for load served.
- B. For single receptacles installed on an individual branch circuit, provide receptacle with ampere rating not less than that of the branch circuit.
- C. Provide in-use weather-proof covers for all receptacles regardless of location.

**2.02 ALL WIRING DEVICES**

- A. Provide products listed and classified by testing firm acceptable to the authority having jurisdiction as suitable for the purpose specified and indicated.
  - 1. All Wiring Devices: White with specified weatherproof cover unless otherwise indicated.

**2.03 WALL SWITCHES**

- A. All Wall Switches: AC only, quiet operating, general-use snap switches with silver alloy contacts, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 20; types as indicated on the drawings.

1. Wiring Provisions: Terminal screws for side wiring and screw actuated binding clamp for back wiring with separate ground terminal screw.
- B. Standard Wall Switches: Extra Heavy Duty Industrial Grade, 20 A, 120/277 V with standard toggle type switch actuator and maintained contacts; single pole single throw, double pole single throw, three way, or four way as indicated on the drawings.
  1. Products:
    - a. Hubbell Incorporated; Catalog No. HBL122#W: [www.hubbell-wiring.com](http://www.hubbell-wiring.com).
    - b. Leviton Manufacturing Company, Inc: [www.leviton.com](http://www.leviton.com).
    - c. Pass & Seymour, a brand of Legrand North America, Inc.: [www.legrand.us](http://www.legrand.us).
    - d. Approved Equal.

## 2.04 RECEPTACLES

- A. All Receptacles: Self-grounding, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 498; types as indicated on the drawings.
  1. Wiring Provisions: Terminal screws for side wiring or screw actuated binding clamp for back wiring with separate ground terminal screw.
  2. NEMA configurations specified are according to NEMA WD 6.
- B. Convenience Receptacles:
  1. Weather Resistant Convenience Receptacles: Extra Heavy Duty Industrial Grade, 20A, 125V, NEMA 5-20R, , listed and labeled as corrosion resistant, weather resistant type complying with UL 498 Supplement SE suitable for installation in damp or wet locations; duplex as indicated on the drawings.
    - a. Products:
      - 1) Hubbell Incorporated; Catalog No. HBL5362WWR: [www.hubbell-wiring.com](http://www.hubbell-wiring.com).
      - 2) Leviton Manufacturing Company, Inc.: [www.leviton.com](http://www.leviton.com).
      - 3) Pass & Seymour, a brand of Legrand North America, Inc: [www.legrand.us..](http://www.legrand.us..)
  2. NEMA 6-30R Convenience Receptacles: \_\_\_\_\_.
    - a. Products:
      - 1) Hubbell Incorporated; Catalog No. HBL9330: [www.hubbell-wiring.com](http://www.hubbell-wiring.com).
      - 2) Leviton Manufacturing Company, Inc.: [www.leviton.com](http://www.leviton.com).
      - 3) Pass & Seymour, a brand of Legrand North America, Inc: [www.legrand.us](http://www.legrand.us).
      - 4) Approved Equal.

## 2.05 WALL PLATES

- A. Weather Resistant Convenience Receptacle Covers: Gasketed, PVC Nonmetallic, weather-proof listed as suitable for wet locations when closed.
  1. Manufacturers:
    - a. Cantex; Model 5133692: [www.cantexinc.com](http://www.cantexinc.com).
    - b. Carlon: [www.carlon.com](http://www.carlon.com).
    - c. Cooper Crouse-Hinds, a division of Cooper Industries: [www.cooperindustries.com](http://www.cooperindustries.com).
    - d. Approved Equal.
- B. NEMA 6-30R Convenience Receptacle Covers: Gasketed, PVC Nonmetallic, weather-proof listed as suitable for wet locations when closed.
  1. Manufacturers:
    - a. Cantex; Model 513321: [www.cantexinc.com](http://www.cantexinc.com).
    - b. Carlon: [www.carlon.com](http://www.carlon.com).
    - c. Cooper Crouse-Hinds, a division of Cooper Industries: [www.cooperindustries.com](http://www.cooperindustries.com).
    - d. Approved Equal.
- C. Switch Weatherproof Covers: Gasketed, PVC Nonmetallic, weather-proof listed as suitable for wet locations when closed.
  1. Manufacturers:
    - a. Cantex; Model 5133361: [www.cantexinc.com](http://www.cantexinc.com).
    - b. Carlon: [www.carlon.com](http://www.carlon.com).
    - c. Cooper Crouse-Hinds, a division of Cooper Industries: [www.cooperindustries.com](http://www.cooperindustries.com).

- d. Approved Equal.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that field measurements are as shown on the drawings.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.
- C. Verify that wall openings are neatly cut and will be completely covered by wall plates.
- D. Verify that final surface finishes are complete, including painting.
- E. Verify that branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.
- F. Verify that conditions are satisfactory for installation prior to starting work.

#### **3.02 PREPARATION**

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

#### **3.03 INSTALLATION**

- A. Perform work in a neat and workmanlike manner in accordance with NECA 1 and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.
- B. Coordinate locations of outlet boxes provided under Section 16138 as required for installation of wiring devices provided under this section.
  - 1. Mounting Heights: Unless otherwise indicated, as follows:
    - a. Wall Switches: 44 inches above finished floor.
    - b. Receptacles: 18 inches above finished floor or 6 inches above counter.
- C. Install wiring devices in accordance with manufacturer's instructions.
- D. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
- E. Where required, connect wiring devices using pigtails not less than 6 inches long. Do not connect more than one conductor to wiring device terminals.
- F. Connect wiring devices by wrapping conductor clockwise 3/4 turn around screw terminal and tightening to proper torque specified by the manufacturer. Where present, do not use push-in pressure terminals that do not rely on screw-actuated binding.
- G. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
- H. Install wiring devices plumb and level with mounting yoke held rigidly in place.
- I. Install wall switches with OFF position down.
- J. Install vertically mounted receptacles with grounding pole on top and horizontally mounted receptacles with grounding pole on left.
- K. Install wall plates to fit completely flush to wall with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.
- L. Install blank wall plates on junction boxes and on outlet boxes with no wiring devices installed or designated for future use.

#### **3.04 FIELD QUALITY CONTROL**

- A. Inspect each wiring device for damage and defects.
- B. Operate each wall switch with circuit energized to verify proper operation.

- C. Test each receptacle to verify operation and proper polarity.
- D. Correct wiring deficiencies and replace damaged or defective wiring devices.

**3.05 ADJUSTING**

- A. Adjust devices and wall plates to be flush and level.

**3.06 CLEANING**

- A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

**END OF SECTION**

**SECTION 16243**  
**EMERGENCY POWER SUPPLY**

**PART 1 GENERAL**

**1.01 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. NFPA 111 - Standard on Stored Electrical Energy Emergency and Standby Power Systems; National Fire Protection Association; 2013.

**1.02 SUBMITTALS**

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide catalog and data sheets showing electrical characteristics and connection requirements. Include unit ratings, dimensions, and finishes. Include performance data for batteries.

**1.03 QUALITY ASSURANCE**

- A. Perform Work in accordance with NFPA 70.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. DSPM Inc.; Fortress 1: [www.DSPManufacturing.com](http://www.DSPManufacturing.com).

**2.02 EMERGENCY POWER SUPPLY**

- A. Description: NFPA 111 Type A, Class 1.5 stored emergency power supply system designed for Level 1 applications and consisting of rectifier/charger unit, storage battery, and solid state inverter with static transfer switch, in one or several enclosures.

**2.03 RATINGS**

- A. Input Voltage: 120 volts, 60 Hz, single phase.
- B. Output Power: 200 VA at 0.8 power factor.
- C. Output Voltage: 120 volts plus 5 percent, single phase.
- D. Inverter Output Frequency: 60 Hz plus 1 percent.
- E. Efficiency: 90 percent minimum.
- F. Maximum Recharge Time: 12 hours following 1.5 hour discharge.
- G. Total Harmonic Distortion: Less than 10 percent at full resistive load.
- H. Battery: Lead calcium, sealed type battery.
- I. Accessories: Provisions for remote battery alarm.

**2.04 ENCLOSURE**

- A. NEMA 3R.

**PART 3 EXECUTION**

**3.01 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Install units plumb and level.

**3.02 FIELD QUALITY CONTROL**

- A. Verify operation of each unit by simulating outage.

**3.03 CLOSEOUT ACTIVITIES**

- A. Demonstrate normal operation of unit.

**END OF SECTION**

**SECTION 16414**  
**REMOTE CONTROL SWITCHING DEVICES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Electromechanical time switches.

**1.02 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.

**1.03 SUBMITTALS**

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data showing dimensions and ratings for components.

**PART 2 PRODUCTS**

**2.01 ELECTROMECHANICAL TIME SWITCHES**

- A. Manufacturers:
  - 1. Intermatic; Model T103P: [www.intermatic.com](http://www.intermatic.com).
  - 2. Approved Equal.
- B. Heavy-duty switches capable of controlling electrical loads up to 40 amps.
- C. 24-hour control.
- D. 1 to 12 On/Off operations each day.
- E. Manual override.
- F. Plastic Type 3R enclosure.

**PART 3 EXECUTION**

**3.01 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.

**END OF SECTION**

**SECTION 16443**  
**PANELBOARDS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Power distribution panelboards.
- B. Overcurrent protective devices for panelboards.

**1.02 RELATED REQUIREMENTS**

- A. Section 16060 - Grounding and Bonding.
- B. Section 16070 - Hangers and Supports.

**1.03 REFERENCE STANDARDS**

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- B. NECA 407 - Standard for Installing and Maintaining Panelboards; National Electrical Contractors Association; 2009.
- C. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2008.
- D. NEMA PB 1 - Panelboards; National Electrical Manufacturers Association; 2011.
- E. NEMA PB 1.1 - General Instructions for Proper Installation, Operation and Maintenance of Panelboards Rated 600 Volts or Less; National Electrical Manufacturers Association; 2007.
- 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 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.
- H. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.
- I. UL 67 - Panelboards; Current Edition, Including All Revisions.
- J. UL 489 - Molded-Case Circuit Breakers, Molded-Case Switches and Circuit Breaker Enclosures; Current Edition, Including All Revisions.
- K. UL 869A - Reference Standard for Service Equipment; Current Edition, Including All Revisions.

**1.04 SUBMITTALS**

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for panelboards, enclosures, overcurrent protective devices, and other installed components and accessories.

**1.05 QUALITY ASSURANCE**

- A. Conform to requirements of NFPA 70.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Siemens Industry, Inc: [www.usa.siemens.com](http://www.usa.siemens.com).
- B. Eaton Corporation; Cutler-Hammer Products: [www.eaton.com](http://www.eaton.com).
- C. General Electric Company: [www.geindustrial.com](http://www.geindustrial.com).
- D. Schneider Electric; Square D Products: [www.schneider-electric.us](http://www.schneider-electric.us).
- E. Approved Equal.

## 2.02 ALL PANELBOARDS

- A. Provide products listed and labeled by testing firm acceptable to the authority having jurisdiction as suitable for the purpose indicated.
- B. Unless otherwise indicated, provide products suitable for continuous operation under the following service conditions:
  - 1. Altitude: Less than 6,600 feet.
  - 2. Ambient Temperature:
    - a. Panelboards Containing Circuit Breakers: Between 23 degrees F and 104 degrees F.
- C. Short Circuit Current Rating:
  - 1. Provide panelboards with listed short circuit current rating not less than the available fault current at the installed location as indicated on the drawings.
  - 2. Listed series ratings are not acceptable.
- D. Panelboards Used for Service Entrance: Listed and labeled as suitable for use as service equipment according to UL 869A.
- E. Mains: Configure for top or bottom incoming feed as indicated or as required for the installation.
- F. Branch Overcurrent Protective Devices: Replaceable without disturbing adjacent devices.
- G. Bussing: Sized in accordance with UL 67 temperature rise requirements.
  - 1. Provide solidly bonded equipment ground bus in each panelboard, with a suitable lug for each feeder and branch circuit equipment grounding conductor.
- H. Conductor Terminations: Suitable for use with the conductors to be installed.
- I. Enclosures: Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E.
  - 1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
    - a. All locations: 316 Stainless Steel or Corrosion -Resistant, UV-Resistant, Fiber-Reinforced Polyester, Type 4X.
  - 2. Fronts:
    - a. Fronts for Surface-Mounted Enclosures: Same dimensions as boxes.
  - 3. Lockable Doors: All locks keyed alike unless otherwise indicated.
- J. Future Provisions: Prepare all unused spaces for future installation of devices including bussing, connectors, mounting hardware and all other required provisions.
- K. Load centers are not acceptable.

## 2.03 POWER DISTRIBUTION PANELBOARDS

- A. Description: Panelboards complying with NEMA PB 1, power and feeder distribution type, circuit breaker type, and listed and labeled as complying with UL 67; ratings, configurations and features as indicated on the drawings.
- B. Conductor Terminations:
  - 1. Main and Neutral Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.
  - 2. Main and Neutral Lug Type: Mechanical.
- C. Bussing:
  - 1. Phase and Neutral Bus Material: Copper.
  - 2. Ground Bus Material: Copper.
- D. Circuit Breakers:
  - 1. Provide bolt-on type.
  - 2. Provide thermal magnetic circuit breakers.
- E. Enclosures:
  - 1. Provide surface-mounted enclosures unless otherwise indicated.
  - 2. Provide clear plastic circuit directory holder mounted on inside of door.

## **2.04 OVERCURRENT PROTECTIVE DEVICES**

- A. Molded Case Circuit Breakers:
  - 1. Description: Quick-make, quick-break, over center toggle, trip-free, trip-indicating circuit breakers listed and labeled as complying with UL 489; ratings, configurations, and features as indicated on the drawings.
  - 2. Interrupting Capacity:
    - a. Provide circuit breakers with interrupting capacity as required to provide the short circuit current rating indicated.
    - b. Fully Rated Systems: Provide circuit breakers with interrupting capacity not less than the short circuit current rating indicated.
  - 3. Conductor Terminations:
    - a. Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.
  - 4. Thermal Magnetic Circuit Breakers: For each pole, furnish thermal inverse time tripping element for overload protection and magnetic instantaneous tripping element for short circuit protection.
  - 5. Multi-Pole Circuit Breakers: Furnish with common trip for all poles.
  - 6. Provide listed switching duty rated circuit breakers with SWD marking for all branch circuits serving fluorescent lighting.
  - 7. Provide listed high intensity discharge lighting rated circuit breakers with HID marking for all branch circuits serving HID lighting.
  - 8. Do not use tandem circuit breakers.
  - 9. Do not use handle ties in lieu of multi-pole circuit breakers.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
- B. Install panelboards securely, in a neat and workmanlike manner in accordance with NECA 1 (general workmanship), NECA 407 (panelboards), and NEMA PB 1.1.
- C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- D. Provide required supports in accordance with Section 16070.
- E. Install panelboards plumb.
- F. Mount panelboards such that the highest position of any operating handle for circuit breakers or switches does not exceed 79 inches above the floor or working platform.
- G. Provide grounding and bonding in accordance with Section 16060.
- H. Install all field-installed branch devices, components, and accessories.
- I. Provide filler plates to cover unused spaces in panelboards.

### **3.02 ADJUSTING**

- A. Adjust tightness of mechanical and electrical connections to manufacturer's recommended torque settings.
- B. Adjust alignment of panelboard fronts.

**END OF SECTION**

**SECTION 16510**  
**INTERIOR LUMINAIRES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Luminaires.
- B. Lamps.

**1.02 RELATED REQUIREMENTS**

- A. Section 16138 - Boxes.

**1.03 REFERENCE STANDARDS**

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- B. NECA/IESNA 500 - Standard for Installing Indoor Commercial Lighting Systems; National Electrical Contractors Association; 2006.
- C. NECA/IESNA 502 - Standard for Installing Industrial Lighting Systems; National Electrical Contractors Association; 2006.
- 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 1598 - Luminaires; Current Edition, Including All Revisions.

**1.04 SUBMITTALS**

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- 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, installed accessories, and ceiling compatibility; 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 LUMINAIRE TYPES**

- A. Furnish products as indicated in luminaire schedule included on the drawings.

**2.02 LUMINAIRES**

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products that are listed and labeled as complying with UL 1598, where applicable.
- C. Provide products listed and classified by testing firm acceptable to the authority having jurisdiction as suitable for the purpose specified and indicated.
- D. 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.
- E. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, supports, trims, accessories, etc. as necessary for a complete operating system.
- F. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.

## **2.03 LAMPS**

- A. All Lamps:
  - 1. Unless explicitly excluded, provide new, compatible, operable lamps in each luminaire.
  - 2. Verify compatibility of specified lamps with luminaires to be installed. Where lamps are not specified, provide lamps per luminaire manufacturer's recommendations.
  - 3. Minimum Efficiency: Provide lamps complying with all current applicable federal and state lamp efficiency standards.
  - 4. Color Temperature Consistency: Unless otherwise indicated, for each type of lamp furnish products which are consistent in perceived color temperature. Replace lamps that are determined by the Architect to be inconsistent in perceived color temperature.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. Coordinate locations of outlet boxes provided under Section 16138 as required for installation of luminaires provided under this section.
- B. Install products according to manufacturer's instructions.
- C. Install luminaires securely, in a neat and workmanlike manner, as specified in NECA 1 (general workmanship), NECA 500 (commercial lighting), and NECA 502 (industrial lighting).
- D. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.
- E. Install accessories furnished with each luminaire.
- F. Bond products and metal accessories to branch circuit equipment grounding conductor.
- G. Install lamps in each luminaire.

**END OF SECTION**

**SECTION 16900**  
**MARINA PEDESTAL**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Marina Pedestals.
- B. Fire Extinguisher Cabinet/Light

**1.02 REFERENCES**

- A. NFPA 70 - National Electrical Code; National Fire Protection Association; 2011.
- B. ANSI/UL 231 - Power Outlets; Underwriter's Laboratories; Latest.
- C. NFPA 303 Marina and Boatyards; National Fire Protection Association; 2006.

**1.03 SUBMITTALS**

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide Manufacturer's data sheet.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Marina Power and Lighting, Inc. - Hatteras Light Power Pedestal.

**2.02 PEDESTALS**

- A. Manufacturer
  - 1. Eaton Corporation Marina Power Equipment; Lighthouse Power Pedestal: [www.marinapower.com](http://www.marinapower.com).
  - 2. Approved Equal.
- B. Shall be tested and certified to be in compliance with ANSI/UL 231.
- C. Shall be certified to meet all sections of NFPA 303.
- D. Shall meet 406.8 of NFPA 70.
- E. Pedestal Wiring
  - 1. The power pedestal shall be completely pre-wired at the factory to the load side of the compression lug assembly.
  - 2. All internal wiring shall be stranded and tin plated to resist corrosion.
- F. Base
  - 1. The base shall be hinged to the upper unit such as to provide ease of wiring and plumbing and shall be of polycarbonate construction.
- G. Hose/Cable Bracket
  - 1. Each pedestal shall have brackets capable of holding a 50 feet length of 5/8 water hose or 50 feet of 50 amp 4 conductor boat S.O. cord.
- H. Receptacles
  - 1. A 125 volt, 20A, 2-pole, 3-wire, NEMA 5-20R ground-fault protected receptacle shall be provided for shore use on each pedestal.
  - 2. Receptacles for boat users are as specified below. See schedules on plans for configurations at each slit.
    - a. 2-30 - pedestal shall consist of two (2) 125 volt, 30A, 2-pole, 3-wire, NEMA L5-30R locking and grounding type receptacles.
    - b. 2-50 - pedestal shall consist of two (2) 125/250 volt, 50A, 3-pole, 4-wire, NEMA SS-2 locking and grounding type receptacles.
  - 3. All receptacles shall be mounted at an angle that is minimum 30 degrees from vertical and located behind a lockable weatherproof-hinged door that is under tension to ensure proper closing pressure when receptacle is or is not in use.

4. All receptacles shall be mounted at least 24" above dock.
- I. Lighting
  1. Each pedestal shall be equipped with non-metered light. The light shall be a 14 watt LED light that is controlled by an electromechanical photocell.
  2. The light shall provide 360 degree dock illumination such that indirect lighting extends from station to station with a minimum dock lighting of one foot candle at 15 feet. The lighting shall not interfere with boater's navigation.
- J. Circuit Breakers
  1. Circuit breakers for 20 amp receptacles shall be a single pole, 125 volt, 20 amp thermo magnetic type.
  2. Circuit breakers for 30 amp receptacles shall be a single pole, 125 volt, 30 amp thermo magnetic type.
  3. Circuit breakers for 50 amp receptacles shall be a two pole 125/250 volt, 50 amp thermo magnetic type.
  4. All breakers shall be of the thermal magnetic type, 10,000 A.I.C., UL listed.
- K. Meters
  1. The pedestal shall be equipped with one fully electronic meter that displays the kilowatts used by the pedestal on a nonresettable digital counter that is protected from the weather. The accuracy of the meter must be certified by their manufacturer to have a 100 ampere rating and no more than a 1% error when tested in accordance with ANSI-C12.1.
- L. Telephone and Cable TV
  1. Each pedestal shall be equipped with two outlets for each slip. Each outlet shall contain a marine telephone locking receptacle and two (2) male cable TV connectors under a weatherproof cover.
- M. Water
  1. The water connection shall be one (1) 3/4" inlet which divides into two (2) 3/4" hose bibs. The valves shall be 1/4 turn ball valves.
- N. Power Pedestals for A.D.A. Slips (Designated as Handicap Accessible)
  1. Power pedestals installed on designated handicap accessible slips shall comply with the guidelines of the Americans With Disabilities Act of 1990.

### **2.03 FIRE EXTINGUISHER CABINET/LIGHT**

- A. Manufacturer
  1. Eaton Corporation Marina Power Equipment; Firehouse: [www.marinapower.com](http://www.marinapower.com).
  2. Approved Equal.
- B. Shall have a 14watt LED light that is controlled by an electromechanical photocell..
- C. Shall have a 10 lb. ABC type fire extinguisher.
- D. Housing shall be 316L stainless steel, powder-coated with polyester resin.
- E. NEMA 3R rating.
- F. Light lens color as selected by owner.
- G. Provide Life Ring.
- H. Provide alarm strobe light and siren that actuates when door is opened or life ring is removed.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. Install in accordance with manufacturer's instructions at locations shown on plans.

**END OF SECTION**

**SECTION 16901**  
**GROUND FAULT MONITOR**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Ground Fault Monitors.

**1.02 REFERENCES**

- A. NFPA 70 - National Electrical Code; National Fire Protection Association; 2011.
- B. NFPA 303 Marina and Boatyards; National Fire Protection Association; 2006.

**1.03 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's data sheet.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Bender; Model MG-T: [www.bender.org](http://www.bender.org).
- B. Approved Equal.

**2.02 GROUND FAULT MONITOR**

- A. Self contained electronic module suitable for measuring low level AC leakage in marina shore power systems. Compatible with current transformers (CT) in a size range from 1.4" to 8.4" inside diameter. Components must be UL approved and suitable for incorporation in a National Electric Code marina power system per NFPA-303-2006, sec: A.5.18.2.
- B. Alarm level response to AC ground fault leakage shall be adjustable from 0.006A (6mA) to 20.0 A. The monitor shall incorporate a 10 unit LED display to indicate leakage level.
  - 1. Set the setpoint at no more than 100mA.
- C. Power requirement shall be either 120 VAC, at 2.0 A, supplied at the monitoring location.
- D. Each pedestal feeder shall be monitored separately. Upon alarm actuation, the unit shall perform the following automatically:
  - 1. Actuate a shunt trip on the breaker feeding the pedestal which deenergizes the circuit. All other circuits may remain active.
  - 2. Shall actuate an alarm light mounted on top of panel.
  - 3. Actuate a normally open relay contact for an external horn/strobe mounted (for future use).
- E. Alarm relays shall be isolated and may operate on either AC or DC signal voltages at current levels to 2.0A.
- F. Fault indication shall be set to latch in the alarm position. Alarm response delay shall be adjustable from 0 to 10 seconds. A push-to-test switch shall be provided which will activate alarm level, circuit function, and alarm delay. The LED test indicator signal will also display an error signal if the CT becomes disconnected.
- G. The electronics shall be mounted in a weather proof NEMA-4X enclosure, and equipped with provision to restrict unauthorized access. The enclosure shall be suitable for mounting to a branch panel, substation enclosure, or in any convenient exterior location. The hinged cover shall incorporate a red and green pilot light and a push-to-reset switch. These controls shall be available to personnel without having to open the cover.
- H. The current transformers (CT) shall be UL listed and have passed a dielectric test voltage of AC 3 KV. Six CTs shall be provided. One for each pedestal feeder and one for the dock floating dock lighting. The CTs shall be sized to accomadate the feeder conductors and shall be positioned in the distribution panel prior to the conducturs leaving the enclosure. They shall encircle L1-L2-N (or L1-N) conductors.

**PART 3 EXECUTION**

**3.01 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Provide label on front door of panel that states that the following "GROUND FAULT MONITOR SETPOINT SHALL BE SET AT NO MORE THAN 100 mA".

**END OF SECTION**

Permit Class  
**MODIFICATION/MAJOR**

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

Authorizing development in Carteret County at Harbor Channel, at Morehead City

Waterfront, as requested in the permittee's application dated 2/12/13 including

attached workplan drawings (4), 3 dated 2/11/13 and 1 dated 2/21/13

This permit, issued on April 30, 2013, 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.

### Urban Waterfront Development

- 1) Unless specifically altered herein, this permit authorizes the construction of the municipal pavilion including the restrooms, open deck and observation deck, all as depicted in the attached permit application and workplan drawings.
- 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.

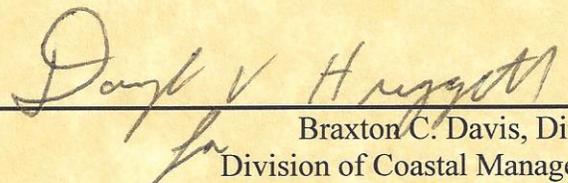
Any maintenance work or project modification not covered hereunder requires further Division approval.

All work must cease when the permit expires on

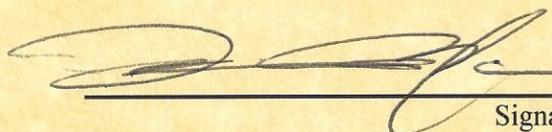
**December 31, 2016**

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.

  
\_\_\_\_\_  
Braxton C. Davis, 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 docking facility piers and associated structures shall have a minimum setback distance of 15 feet between any parts of the docking facility and the adjacent property owner's riparian access corridor.
- 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 10 boat slips in association with this docking facility.

**Easement**

- 10) An Easement from the Department of Administration's State Property Office may be required under N.C.G.S. 146-12(e). The permittee shall contact the State Property Office at 919-807-4650 prior to the initiation of construction of any structures over state-owned submerged lands to determine if such an easement will be required. Any required easements shall be obtained, and a copy provided to the Division of Coastal Management at 400 Commerce Avenue, Morehead City, NC 28557, prior to construction of any new boat slips or other docking facilities authorized under this permit.

**General**

- 11) No vegetated wetlands or open water areas shall be excavated or filled, even temporarily.
- 12) This permit does not authorize the excavation of any shallow bottom habitat, including "kicking" with boat propellers.

**ADDITIONAL CONDITIONS**

- 13) 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.
- 14) This permit shall not be assigned, transferred, sold, or otherwise disposed of to a third party without the written approval of the Division of Coastal Management.
- 15) The permittee and/or his or her contractor shall meet with a representative of the Division prior to project initiation.
- 16) 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 a Stormwater Permit from the NC Division of Water Quality.

**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:** Future development of the permittee's property may require a modification of this permit. Contact a representative of the Division at (252)808-2808 prior to the commencement of any such activity for this determination.

**NOTE:** The N.C. Division of Water Quality has authorized the proposed project under DWQ Project No. 05-0521v2.

# 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 II, as described in the Construction Documents, and consisting of the following:

The scope of work includes the construction of a pavilion deck with restrooms approximately 6697 SF in size overlooking the Morehead City Channel of Bogue Sound and floating docks approximately 1072 SF in size. The project includes all decking, rails, lighting, electric power, plumbing, piles, framing, connections, and connectors as indicated on the drawings and in the specifications and as required for a complete and finished project.

The base bid shall also include all blocking, floor structure, electrical, and plumbing preparations necessary to accommodate future construction of the restrooms and floating docks.

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. (Strike out "Add" or "Deduct" as appropriate.)

**Alternate G-1** – Provide all work and materials required to construct the restrooms as indicated on the drawings and specified herein, including flooring, walls, louvers, ceiling, roof, doors, hardware, toilet partitions and accessories, plumbing, ventilation, and electrical, The installation of all structural members and blocking in the floor framing required to accommodate the restrooms construction shall be included in the base bid.

**(Add) (Deduct)**

**Dollars(\$)**

---

**Alternate G-2** - Provide all work and materials required to construct and install the floating docks and fixed access deck as indicated on the drawings and specified herein, including docks, floatation devices, ramp, access deck from Pavilion deck, wooden piles (dock outboard and mooring piles), plumbing and electrical. Preparatory work required for the Pavilion deck to be fitted and ready for the installation of the access deck and floating docks, including plumbing and electrical connections shall be included in the base bid.

**(Add) (Deduct)**

**Dollars(\$)**

---

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 Supplementary General Conditions.

**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 Concrete Piles**

Precast, Prestressed Concrete Piling – Complete in place, including all costs, mobilization, overhead, profit, etc.:

<u>Base Bid</u>	<u>Length</u>	<u>Unit Price (\$)</u>	<u>/ea.</u>	<u>Total</u>
14x14 Piling:	65 ft. each	_____	_____	\$ _____
12x12 Piling:	45 ft. each	_____	_____	\$ _____



# 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 II»  
«705 & 706 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»  
« »

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.

**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.

## 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.)*

« The date of commencement shall be indicted in the 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 « » ( « » ) 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
- «X» 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)*

«David McCabe»  
«Director of Public Works  
706 Arendell Street  
Morehead City, North Carolina 28557»  
«Telephone Number: 252-726-6840»  
« »  
« »  
«Email Address: mcpw@bizec.rr.com»

§ 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:

<<None>>

**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 II  
705 & 707 Shepard Street,  
Morehead City, NC

**PROJECT NUMBER:** /  
**CONTRACT FOR:** General Construction  
**CONTRACT DATE:**

OWNER:   
ARCHITECT:   
CONTRACTOR:   
FIELD:   
OTHER:

**TO OWNER:**  
(Name and address)  
Town of Morehead City  
706 Arendell Street  
Morehead City, NC

**TO CONTRACTOR:**  
(Name and address)

### 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).

TOWN OF MOREHEAD CITY

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.)