

**PROJECT MANUAL  
AND  
SPECIFICATIONS**

**FOR THE**

**WHITFIELD COUNTY  
ANIMAL SHELTER**



**Dalton, Georgia  
Project #2020-230**

**September 04, 2020**

Prepared by



**CARTER WATKINS  
ASSOCIATES**  
A R C H I T E C T S ,  
I N C .

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# TABLE OF CONTENTS

## WHITFIELD COUNTY ANIMAL SHELTER

---

BID NOTICE

BID FORM

A101 OWNER/CONTRACTOR AGREEMENT

A201 GENERAL CONDITIONS

A305 CONTRACTOR QUALIFICATIONS

A310 BID BOND

A312 PAYMENT BOND

A312 PERFORMANCE BOND

GEORGIA SECURITY AND IMMIGRATION

DIVISION 1	SECTION 01 11 13	SUMMARY OF THE WORK
	SECTION 01 21 13	ALLOWANCES
	SECTION 01 23 00	ALTERNATES
	SECTION 01 25 13	PRODUCT SUBSTITUTIONS
	SECTION 01 26 00	MODIFICATION PROCEDURES
	SECTION 01 29 00	APPLICATION FOR PAYMENT
	SECTION 01 31 13	PROJECT COORDINATION
	SECTION 01 31 19	PROJECT MEETINGS
	SECTION 01 33 00	SUBMITTALS
	SECTION 01 42 19	REFERENCES AND STANDARDS
	SECTION 01 43 13	MATERIALS AND EQUIPMENT
	SECTION 01 51 00	TEMPORARY FACILITIES
	SECTION 01 70 00	PROJECT CLOSEOUT
	SECTION 01 78 33	WARRANTIES AND BONDS
	SECTION 01 78 39	PROJECT RECORD DOCUMENTS
DIVISION 3	SECTION 03 30 00	CONCRETE WORK
DIVISION 4	SECTION 04 26 13	MASONRY VENEER
DIVISION 6	SECTION 06 10 00	ROUGH CARPENTRY
	SECTION 06 10 53	MISCELLANEOUS ROUGH CARPENTRY
	SECTION 06 17 53	SHOP FABRICATED WOOD TRUSSES
DIVISION 7	SECTION 07 21 00	BUILDING INSULATION
	SECTION 07 41 13	STANDING SEAM METAL ROOF PANELS
	SECTION 07 42 13	FORMED METAL WALL PANELS
	SECTION 07 72 00	ROOF ACCESSORIES
	SECTION 07 72 01	GUTTERS AND DOWNSPOUTS

# TABLE OF CONTENTS

## WHITFIELD COUNTY ANIMAL SHELTER

---

DIVISION 8

SECTION 08 11 13

STANDARD STEEL DOORS AND FRAMES

SECTION 08 51 13

ALUMINUM OPERABLE WINDOWS

STATE OF GEORGIA

COUNTY OF WHITFIELD

## NOTICE OF LETTING OF CONTRACT

BID TITLE: Animal Shelter – Whitfield County Courthouse  
BID NUMBER: 2020-230

TO WHOM IT MAY CONCERN:

Notice is hereby given that The Whitfield County Board of Commissioners will let a contract to the most responsible, qualified, general contractor, bidder by sealed bids submitted to Mr. Brian McBrayer at the Whitfield County Finance Department Office which is located at 201 S. Hamilton Street Dalton, GA 30720.

Bids are due **no later than 11:00 a.m., Local Time, October 16, 2020**. All properly submitted bids will be opened and read aloud at that time. The bid, as outlined in the complete bid documents, is for the construction of a shell and slab only wood pile construction building that will house the Animal Shelter staff offices and a few kennels. The shelter is located at 156 Gillespie Drive in Dalton, GA. The County will prepare a building pad for the structure.

A pre-bid conference will be held on **September 22, 2020 at 11:00 a.m.** at the site. Attendance is NOT MANDATORY but is encouraged. Both a Performance and a Payment Bond will be required in an amount equal to 100% of the Contract Price. Proof of General Liability Insurance and Workman's Compensation Insurance will be required with the Whitfield County Board of Commissioners listed as an additional insured. All bids must be accompanied by a Bid Bond in the amount of 5% of the Bid Amount. The Whitfield County Board of Commissioners reserve the right to reject any and all bids and to waive any technicalities or irregularities and to award the bid based on the highest and best interests of Whitfield County.

**IMPORTANT NOTES: All bids are to be valid for no less than a period of 90 days and all bids must have the bid title and number on the outside of the sealed envelope containing the bid. Additionally, no Bidders are to contact anyone with Whitfield County at any time during the Bidding Process. All questions are to be directed to the Architect's Office, via email, at [info@carterwatkins.com](mailto:info@carterwatkins.com) . Any breach of this requirement will result in Bidder's disqualification.**

**Mr. Mark Gibson, County Administrator**

**WHITFIELD COUNTY BOARD OF COMMISSIONERS**

# BID FORM

## Whitfield County Board of Commissioners Whitfield County Animal Shelter

### BID SUBMITTAL FORM

**Project Location: Dalton, Georgia**

ALL BIDS ARE TO BE ACCOMPANIED BY A BID BOND and GEORGIA E-VERIFY AFFIDAVIT.

The undersigned BIDDER, having visited the project site and having examined these documents, and having full knowledge of the condition under which the work described herein must be performed, hereby proposes that she/he will fulfill the obligations contain herein in accordance with all instructions, terms, conditions, and specifications set forth; and that she/he will furnish all required products/services and pay all incidental costs in strict conformity with these documents for the stated prices as payment in full.

Base Bid (written out) \$ \_\_\_\_\_

Base Bid (numerically) \$ \_\_\_\_\_

For Alternates below, if any, please clearly indicate with a plus (+) or minus (-) whether the alternate sum in an addition or deduction from the base bid.

Alternate #1 - \$ \_\_\_\_\_

Alternate #2 - \$ \_\_\_\_\_

Alternate #3 - \$ \_\_\_\_\_

Alternate #4 - \$ \_\_\_\_\_

Alternate #5 - \$ \_\_\_\_\_

Submitting Firm: \_\_\_\_\_

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

Name and Title of Authorized Representative (print/type): \_\_\_\_\_

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

(Signature-When signed, this bid is legal and binding to the Whitfield County Board of Commissioners and acknowledges that ALL Specifications, Terms and Conditions and/or instructions to Bidders have been read and understood).

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

Email: \_\_\_\_\_

**FIRM PRICING** - Prices submitted on this bid form are firm through (minimum 60 days). Initial below for Acknowledgement of Addenda (if any). Be certain to check the Purchasing Department web site prior to the bid for all Addenda.

\_\_\_\_\_ Addendum #1 \_\_\_\_\_ Addendum #2 \_\_\_\_\_ Addendum #3 \_\_\_\_\_ Addendum #4

 **AIA<sup>®</sup> Document A101<sup>™</sup> – 2017****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)*

Whitfield County Board of Commissioners  
301 W. Crawford Street  
Dalton, GA

and the Contractor:

for the following Project:  
*(Name, location and detailed description)*

Shell, slab, and under-slab plumbing installation for the Whitfield County  
Animal Shelter Office Facility.

The Architect:  
*(Name, legal status, address and other information)*

Carter Watkins Architects Associates Inc., Subchapter S Corporation  
P.O. Box 1004  
137 East Washington Street  
Monroe, Georgia  
Telephone Number: 770-267-7799  
Fax Number: 770-267-1064

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. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

The parties should complete A101<sup>™</sup>-2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201<sup>™</sup>-2017, 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.

Init.

## 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

### EXHIBIT A 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:

*(Check one of the following boxes.)*

- The date of this Agreement.
- A date set forth in a notice to proceed issued by the Owner.
- Established as follows:  
*(Insert a date or a means to determine the date of commencement of the Work.)*

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

#### § 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:

*(Check one of the following boxes and complete the necessary information.)*

Init.

Not later than One Hundred Twenty ( 120 ) calendar days from the date of commencement of the Work.

By the following date:

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date
All Work	

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

#### 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 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item	Price
------	-------

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement. *(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)*

Item	Price	Conditions for Acceptance
------	-------	---------------------------

§ 4.3 Allowances, if any, included in the Contract Sum: *(Identify each allowance.)*

Item	Price
------	-------

See Project Manual

§ 4.4 Unit prices, if any: *(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)*

Item	Units and Limitations	Price per Unit (\$0.00)
------	-----------------------	-------------------------

§ 4.5 Liquidated damages, if any: *(Insert terms and conditions for liquidated damages, if any.)*

\$ 750 per calendar day after 120 days including weekends and holidays.

*(Paragraphs deleted)*

#### 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.

Init.

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User Notes:

(1682533680)

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month.

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the First day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the Thirtieth day of the same month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than forty five ( 45 ) 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 of values 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 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

- .1 That portion of the Contract Sum properly allocable to completed Work;
- .2 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; and
- .3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and
- .5 Retainage withheld pursuant to Section 5.1.7.

#### § 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

*(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)*

10% Retainage complying with O.C.G.A.

§ 5.1.7.1.1 The following items are not subject to retainage:

*(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)*

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:

Init.

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(1682533680)

*(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)*

Per O.C.G.A.

**§ 5.1.7.3** Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:

*(Insert any other conditions for release of retainage upon Substantial Completion.)*

**§ 5.1.8** If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

**§ 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 Article 12 of AIA Document A201–2017, 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:

### **§ 5.3 Interest**

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.)*

six percent per annum % 6

## **ARTICLE 6 DISPUTE RESOLUTION**

### **§ 6.1 Initial Decision Maker**

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the 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 Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:

*(Check the appropriate box.)*

- Arbitration pursuant to Section 15.4 of AIA Document A201–2017
- Litigation in a court of competent jurisdiction
- Other (*Specify*)

If the Owner and Contractor do not select a method of binding dispute resolution, 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.

**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 A201–2017.

*(Paragraphs deleted)*

**ARTICLE 8 MISCELLANEOUS PROVISIONS**

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

All work shall conform with requirements from the Georgia Department of Community Affairs and also with the specific items below:

§ 8.2 The Owner’s representative:  
*(Name, address, email address, and other information)*

Ben Carter, Architect

§ 8.3 The Contractor’s representative:

§ 8.4 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

**§ 8.5 Insurance and Bonds**

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™–2017 Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:

*(If other than in accordance with AIA Document E203–2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)*

§ 8.7 Other provisions:

**ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS**

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor
- .2 .3 AIA Document A201™–2017, General Conditions of the Contract for Construction
- .4

*(Insert the date of the E203-2013 incorporated into this Agreement.)*

- .5 Drawings - See Bid documents

Number	Title	Date
--------	-------	------

- .6 Specifications - See bid documents

Section	Title	Date	Pages
---------	-------	------	-------

Addenda, if any:

- .7

Number	Date	Pages
--------	------	-------

1 page

- .8 Other Exhibits:

*(Check all boxes that apply and include appropriate information identifying the exhibit where required.)*

Type of insurance or bond	Limit of Liability or Bond Amount
---------------------------	-----------------------------------

Init.

Payment Bond	100% of the Contract Amount
Performance Bond	100% of the Contract Amount
Builder's Risk Insurance	100% of the Contract Amount
General Liability Insurance	\$ 1 million
Workman's Compensation Insurance	\$ 1 million
Automobile Liability Insurance	\$ 500,000.00

(Table deleted)

(Paragraphs deleted).<sup>9</sup> Other documents, if any, listed below:

*(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™-2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)*

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

\_\_\_\_\_  
OWNER (Signature)

**The Honorable Lynn Laughter, Chair  
Whitfield County Board of Commissioners**

\_\_\_\_\_  
(Printed name and title)

\_\_\_\_\_  
CONTRACTOR (Signature)

\_\_\_\_\_  
(Printed name and title)



# AIA® Document A201™ – 2017

## General Conditions of the Contract for Construction

### for the following PROJECT:

*(Name and location or address)*

WHITFIELD COUNTY ANIMAL SHELTER - OFFICE FACILITY  
Shell, slab, and under-slab plumbing project.

### THE OWNER:

*(Name, legal status and address)*

Whitfield County Board of Commissioners

201 S. Hamilton Street Dalton, GA 30720

### THE ARCHITECT:

*(Name, legal status and address)*

Carter Watkins Architects Associates Inc., Subchapter S Corporation  
P.O. Box 1004  
137 East Washington Street  
Monroe, Georgia

### TABLE OF ARTICLES

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

### ADDITIONS AND DELETIONS:

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

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

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14 TERMINATION OR SUSPENSION OF THE CONTRACT

15 CLAIMS AND DISPUTES



Init.

/

## INDEX

(Topics and numbers in bold are Section headings.)

### Acceptance of Nonconforming Work

9.6.6, 9.9.3, **12.3**

Acceptance of Work

9.6.6, 9.8.2, 9.9.3, 9.10.1, 9.10.3, 12.3

### Access to Work

**3.16**, 6.2.1, 12.1

Accident Prevention

10

Acts and Omissions

3.2, 3.3.2, 3.12.8, 3.18, 4.2.3, 8.3.1, 9.5.1, 10.2.5,

10.2.8, 13.3.2, 14.1, 15.1.2, 15.2

Addenda

1.1.1

Additional Costs, Claims for

3.7.4, 3.7.5, 10.3.2, 15.1.5

### Additional Inspections and Testing

9.4.2, 9.8.3, 12.2.1, **13.4**

### Additional Time, Claims for

3.2.4, 3.7.4, 3.7.5, 3.10.2, 8.3.2, **15.1.6**

### Administration of the Contract

3.1.3, **4.2**, 9.4, 9.5

Advertisement or Invitation to Bid

1.1.1

Aesthetic Effect

4.2.13

### Allowances

**3.8**

### Applications for Payment

4.2.5, 7.3.9, 9.2, **9.3**, 9.4, 9.5.1, 9.5.4, 9.6.3, 9.7, 9.10

Approvals

2.1.1, 2.3.1, 2.5, 3.1.3, 3.10.2, 3.12.8, 3.12.9,

3.12.10.1, 4.2.7, 9.3.2, 13.4.1

### Arbitration

8.3.1, 15.3.2, **15.4**

## ARCHITECT

**4**

Architect, Definition of

**4.1.1**

Architect, Extent of Authority

2.5, 3.12.7, 4.1.2, 4.2, 5.2, 6.3, 7.1.2, 7.3.4, 7.4, 9.2,  
9.3.1, 9.4, 9.5, 9.6.3, 9.8, 9.10.1, 9.10.3, 12.1, 12.2.1,  
13.4.1, 13.4.2, 14.2.2, 14.2.4, 15.1.4, 15.2.1

Architect, Limitations of Authority and Responsibility

2.1.1, 3.12.4, 3.12.8, 3.12.10, 4.1.2, 4.2.1, 4.2.2, 4.2.3,  
4.2.6, 4.2.7, 4.2.10, 4.2.12, 4.2.13, 5.2.1, 7.4, 9.4.2,  
9.5.4, 9.6.4, 15.1.4, 15.2

Architect's Additional Services and Expenses

2.5, 12.2.1, 13.4.2, 13.4.3, 14.2.4

Architect's Administration of the Contract

3.1.3, 3.7.4, 15.2, 9.4.1, 9.5

Architect's Approvals

2.5, 3.1.3, 3.5, 3.10.2, 4.2.7

Architect's Authority to Reject Work

3.5, 4.2.6, 12.1.2, 12.2.1

Architect's Copyright

1.1.7, 1.5

Architect's Decisions

3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 4.2.14, 6.3,  
7.3.4, 7.3.9, 8.1.3, 8.3.1, 9.2, 9.4.1, 9.5, 9.8.4, 9.9.1,  
13.4.2, 15.2

Architect's Inspections

3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 13.4

Architect's Instructions

3.2.4, 3.3.1, 4.2.6, 4.2.7, 13.4.2

Architect's Interpretations

4.2.11, 4.2.12

Architect's Project Representative

4.2.10

Architect's Relationship with Contractor

1.1.2, 1.5, 2.3.3, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2,  
3.5, 3.7.4, 3.7.5, 3.9.2, 3.9.3, 3.10, 3.11, 3.12, 3.16,  
3.18, 4.1.2, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5,  
9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3, 12, 13.3.2, 13.4, 15.2

Architect's Relationship with Subcontractors

1.1.2, 4.2.3, 4.2.4, 4.2.6, 9.6.3, 9.6.4, 11.3

Architect's Representations

9.4.2, 9.5.1, 9.10.1

Architect's Site Visits

3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.4

Asbestos

10.3.1

Attorneys' Fees

3.18.1, 9.6.8, 9.10.2, 10.3.3

Award of Separate Contracts

6.1.1, 6.1.2

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

**5.2**

### Basic Definitions

**1.1**

Bidding Requirements

1.1.1

Binding Dispute Resolution

8.3.1, 9.7, 11.5, 13.1, 15.1.2, 15.1.3, 15.2.1, 15.2.5,  
15.2.6.1, 15.3.1, 15.3.2, 15.3.3, 15.4.1

Bonds, Lien

7.3.4.4, 9.6.8, 9.10.2, 9.10.3

### Bonds, Performance, and Payment

7.3.4.4, 9.6.7, 9.10.3, **11.1.2**, 11.1.3, **11.5**

### Building Information Models Use and Reliance

**1.8**

Building Permit

3.7.1

### Capitalization

**1.3**

Certificate of Substantial Completion

9.8.3, 9.8.4, 9.8.5

Init.

/

## **Certificates for Payment**

4.2.1, 4.2.5, 4.2.9, 9.3.3, **9.4**, 9.5, 9.6.1, 9.6.6, 9.7, 9.10.1, 9.10.3, 14.1.1.3, 14.2.4, 15.1.4

Certificates of Inspection, Testing or Approval  
13.4.4

Certificates of Insurance  
9.10.2

## **Change Orders**

1.1.1, 3.4.2, 3.7.4, 3.8.2.3, 3.11, 3.12.8, 4.2.8, 5.2.3, 7.1.2, 7.1.3, **7.2**, 7.3.2, 7.3.7, 7.3.9, 7.3.10, 8.3.1, 9.3.1.1, 9.10.3, 10.3.2, 11.2, 11.5, 12.1.2

**Change Orders**, Definition of

### **7.2.1**

## **CHANGES IN THE WORK**

2.2.2, 3.11, 4.2.8, 7, 7.2.1, 7.3.1, 7.4, 8.3.1, 9.3.1.1, 11.5

**Claims**, Definition of

### **15.1.1**

Claims, Notice of  
1.6.2, 15.1.3

## **CLAIMS AND DISPUTES**

3.2.4, 6.1.1, 6.3, 7.3.9, 9.3.3, 9.10.4, 10.3.3, **15**, 15.4  
Claims and Timely Assertion of Claims  
15.4.1

### **Claims for Additional Cost**

3.2.4, 3.3.1, 3.7.4, 7.3.9, 9.5.2, 10.2.5, 10.3.2, **15.1.5**

### **Claims for Additional Time**

3.2.4, 3.3.1, 3.7.4, 6.1.1, 8.3.2, 9.5.2, 10.3.2, **15.1.6**

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

3.7.4  
Claims for Damages  
3.2.4, 3.18, 8.3.3, 9.5.1, 9.6.7, 10.2.5, 10.3.3, 11.3, 11.3.2, 14.2.4, 15.1.7

Claims Subject to Arbitration  
15.4.1

## **Cleaning Up**

### **3.15**, 6.3

Commencement of the Work, Conditions Relating to  
2.2.1, 3.2.2, 3.4.1, 3.7.1, 3.10.1, 3.12.6, 5.2.1, 5.2.3, 6.2.2, 8.1.2, 8.2.2, 8.3.1, 11.1, 11.2, **15.1.5**

### **Commencement of the Work**, Definition of

#### **8.1.2**

## **Communications**

3.9.1, **4.2.4**  
Completion, Conditions Relating to  
3.4.1, 3.11, 3.15, 4.2.2, 4.2.9, 8.2, 9.4.2, 9.8, 9.9.1, 9.10, 12.2, 14.1.2, 15.1.2

## **COMPLETION, PAYMENTS AND**

### **9**

Completion, Substantial  
3.10.1, 4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, 9.8, 9.9.1, 9.10.3, 12.2, 15.1.2  
Compliance with Laws  
2.3.2, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 9.6.4, 10.2.2, 13.1, 13.3, 13.4.1, 13.4.2, 13.5, 14.1.1, 14.2.1.3, 15.2.8, 15.4.2, 15.4.3

## **Concealed or Unknown Conditions**

3.7.4, 4.2.8, 8.3.1, 10.3

## **Conditions of the Contract**

1.1.1, 6.1.1, 6.1.4

## **Consent, Written**

3.4.2, 3.14.2, 4.1.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3, 13.2, 15.4.4.2

## **Consolidation or Joinder**

### **15.4.4**

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

1.1.4, **6**

### **Construction Change Directive**, Definition of

#### **7.3.1**

## **Construction Change Directives**

1.1.1, 3.4.2, 3.11, 3.12.8, 4.2.8, 7.1.1, 7.1.2, 7.1.3, **7.3**, 9.3.1.1

Construction Schedules, Contractor's

3.10, 3.11, 3.12.1, 3.12.2, 6.1.3, 15.1.6.2

## **Contingent Assignment of Subcontracts**

**5.4**, 14.2.2.2

## **Continuing Contract Performance**

### **15.1.4**

**Contract**, Definition of

#### **1.1.2**

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

5.4.1.1, 5.4.2, 11.5, **14**

Contract Administration

3.1.3, 4, 9.4, 9.5

Contract Award and Execution, Conditions Relating to

3.7.1, 3.10, 5.2, 6.1

Contract Documents, Copies Furnished and Use of  
1.5.2, 2.3.6, 5.3

**Contract Documents**, Definition of

#### **1.1.1**

## **Contract Sum**

2.2.2, 2.2.4, 3.7.4, 3.7.5, 3.8, 3.10.2, 5.2.3, 7.3, 7.4, **9.1**, 9.2, 9.4.2, 9.5.1.4, 9.6.7, 9.7, 10.3.2, 11.5, 12.1.2, 12.3, 14.2.4, 14.3.2, 15.1.4.2, **15.1.5**, **15.2.5**

### **Contract Sum**, Definition of

#### **9.1**

Contract Time

1.1.4, 2.2.1, 2.2.2, 3.7.4, 3.7.5, 3.10.2, 5.2.3, 6.1.5, 7.2.1.3, 7.3.1, 7.3.5, 7.3.6, 7, 7, 7.3.10, 7.4, 8.1.1, 8.2.1, 8.2.3, 8.3.1, 9.5.1, 9.7, 10.3.2, 12.1.1, 12.1.2, 14.3.2, 15.1.4.2, 15.1.6.1, 15.2.5

**Contract Time**, Definition of

8.1.1

#### **8.1.1**

## **CONTRACTOR**

### **3**

Contractor, Definition of

#### **3.1**, **6.1.2**

## **Contractor's Construction and Submittal Schedules**

**3.10**, 3.12.1, 3.12.2, 4.2.3, 6.1.3, 15.1.6.2

Contractor's Employees  
2.2.4, 3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2,  
10.3, 11.3, 14.1, 14.2.1.1

## **Contractor's Liability Insurance**

### **11.1**

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

3.12.5, 3.14.2, 4.2.4, 6, 11.3, 12.2.4

Contractor's Relationship with Subcontractors

1.2.2, 2.2.4, 3.3.2, 3.18.1, 3.18.2, 4.2.4, 5, 9.6.2, 9.6.7,  
9.10.2, 11.2, 11.3, 11.4

Contractor's Relationship with the Architect

1.1.2, 1.5, 2.3.3, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2,  
3.5.1, 3.7.4, 3.10, 3.11, 3.12, 3.16, 3.18, 4.2, 5.2, 6.2.2,  
7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3,  
11.3, 12, 13.4, 15.1.3, 15.2.1

Contractor's Representations

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

Contractor's Responsibility for Those Performing the  
Work

3.3.2, 3.18, 5.3, 6.1.3, 6.2, 9.5.1, 10.2.8

Contractor's Review of Contract Documents

3.2

Contractor's Right to Stop the Work

2.2.2, 9.7

Contractor's Right to Terminate the Contract

14.1

Contractor's Submittals

3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 9.2, 9.3, 9.8.2,  
9.8.3, 9.9.1, 9.10.2, 9.10.3

Contractor's Superintendent

3.9, 10.2.6

Contractor's Supervision and Construction

Procedures

1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4, 7.1.3,  
7.3.4, 7.3.6, 8.2, 10, 12, 14, 15.1.4

Coordination and Correlation

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

Copies Furnished of Drawings and Specifications

1.5, 2.3.6, 3.11

Copyrights

1.5, **3.17**

Correction of Work

2.5, 3.7.3, 9.4.2, 9.8.2, 9.8.3, 9.9.1, 12.1.2, **12.2**, 12.3,  
15.1.3.1, 15.1.3.2, 15.2.1

**Correlation and Intent of the Contract Documents**

**1.2**

**Cost**, Definition of

**7.3.4**

Costs

2.5, 3.2.4, 3.7.3, 3.8.2, 3.15.2, 5.4.2, 6.1.1, 6.2.3,  
7.3.3.3, 7.3.4, 7.3.8, 7.3.9, 9.10.2, 10.3.2, 10.3.6, 11.2,  
12.1.2, 12.2.1, 12.2.4, 13.4, 14

**Cutting and Patching**

**3.14**, 6.2.5

Damage to Construction of Owner or Separate  
Contractors

3.14.2, 6.2.4, 10.2.1.2, 10.2.5, 10.4, 12.2.4

Damage to the Work

3.14.2, 9.9.1, 10.2.1.2, 10.2.5, 10.4, 12.2.4

Damages, Claims for

3.2.4, 3.18, 6.1.1, 8.3.3, 9.5.1, 9.6.7, 10.3.3, 11.3.2,  
11.3, 14.2.4, 15.1.7

Damages for Delay

6.2.3, 8.3.3, 9.5.1.6, 9.7, 10.3.2, 14.3.2

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

**8.1.2**

**Date of Substantial Completion**, Definition of

**8.1.3**

**Day**, Definition of

**8.1.4**

Decisions of the Architect

3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 6.3, 7.3.4,  
7.3.9, 8.1.3, 8.3.1, 9.2, 9.4, 9.5.1, 9.8.4, 9.9.1, 13.4.2,  
14.2.2, 14.2.4, 15.1, 15.2

**Decisions to Withhold Certification**

9.4.1, **9.5**, 9.7, 14.1.1.3

Defective or Nonconforming Work, Acceptance,  
Rejection and Correction of

2.5, 3.5, 4.2.6, 6.2.3, 9.5.1, 9.5.3, 9.6.6, 9.8.2, 9.9.3,  
9.10.4, 12.2.1

Definitions

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

**Delays and Extensions of Time**

**3.2**, **3.7.4**, 5.2.3, 7.2.1, 7.3.1, **7.4**, **8.3**, 9.5.1, **9.7**,  
10.3.2, **10.4**, 14.3.2, **15.1.6**, 15.2.5

**Digital Data Use and Transmission**

**1.7**

Disputes

6.3, 7.3.9, 15.1, 15.2

**Documents and Samples at the Site**

**3.11**

**Drawings**, Definition of

**1.1.5**

Drawings and Specifications, Use and Ownership of

3.11

Effective Date of Insurance

8.2.2

**Emergencies**

**10.4**, 14.1.1.2, **15.1.5**

Employees, Contractor's

3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2,  
10.3.3, 11.3, 14.1, 14.2.1.1

Equipment, Labor, or Materials

1.1.3, 1.1.6, 3.4, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,  
4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3,  
9.10.2, 10.2.1, 10.2.4, 14.2.1.1, 14.2.1.2

Execution and Progress of the Work

1.1.3, 1.2.1, 1.2.2, 2.3.4, 2.3.6, 3.1, 3.3.1, 3.4.1, 3.7.1,  
3.10.1, 3.12, 3.14, 4.2, 6.2.2, 7.1.3, 7.3.6, 8.2, 9.5.1,  
9.9.1, 10.2, 10.3, 12.1, 12.2, 14.2, 14.3.1, 15.1.4

Init.

/

Extensions of Time  
3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3, 7.4, 9.5.1, 9.7, 10.3.2,  
10.4, 14.3, 15.1.6, **15.2.5**

#### **Failure of Payment**

9.5.1.3, **9.7**, 9.10.2, 13.5, 14.1.1.3, 14.2.1.2

Faulty Work

(See Defective or Nonconforming Work)

#### **Final Completion and Final Payment**

4.2.1, 4.2.9, 9.8.2, **9.10**, 12.3, 14.2.4, 14.4.3

Financial Arrangements, Owner's

2.2.1, 13.2.2, 14.1.1.4

### **GENERAL PROVISIONS**

#### **1**

#### **Governing Law**

##### **13.1**

Guarantees (See Warranty)

#### **Hazardous Materials and Substances**

10.2.4, **10.3**

Identification of Subcontractors and Suppliers

5.2.1

#### **Indemnification**

3.17, **3.18**, 9.6.8, 9.10.2, 10.3.3, 11.3

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

2.1.2, **2.2**, 2.3, 3.2.2, 3.12.10.1, 6.1.3, 6.1.4, 6.2.5,

9.6.1, 9.9.2, 9.10.3, 10.3.3, 11.2, 13.4.1, 13.4.2,

14.1.1.4, 14.1.4, 15.1.4

#### **Initial Decision**

##### **15.2**

#### **Initial Decision Maker, Definition of**

1.1.8

Initial Decision Maker, Decisions

14.2.4, 15.1.4.2, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5

Initial Decision Maker, Extent of Authority

14.2.4, 15.1.4.2, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5

#### **Injury or Damage to Person or Property**

**10.2.8**, 10.4

Inspections

3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3,

9.9.2, 9.10.1, 12.2.1, 13.4

Instructions to Bidders

1.1.1

Instructions to the Contractor

3.2.4, 3.3.1, 3.8.1, 5.2.1, 7, 8.2.2, 12, 13.4.2

#### **Instruments of Service, Definition of**

##### **1.1.7**

Insurance

6.1.1, 7.3.4, 8.2.2, 9.3.2, 9.8.4, 9.9.1, 9.10.2, 10.2.5, **11**

Insurance, Notice of Cancellation or Expiration

11.1.4, 11.2.3

#### **Insurance, Contractor's Liability**

##### **11.1**

Insurance, Effective Date of

8.2.2, 14.4.2

#### **Insurance, Owner's Liability**

##### **11.2**

#### **Insurance, Property**

**10.2.5**, 11.2, 11.4, 11.5

Insurance, Stored Materials

9.3.2

### **INSURANCE AND BONDS**

#### **11**

Insurance Companies, Consent to Partial Occupancy

9.9.1

Insured loss, Adjustment and Settlement of

11.5

Intent of the Contract Documents

1.2.1, 4.2.7, 4.2.12, 4.2.13

#### **Interest**

##### **13.5**

#### **Interpretation**

1.1.8, 1.2.3, **1.4**, 4.1.1, 5.1, 6.1.2, 15.1.1

Interpretations, Written

4.2.11, 4.2.12

Judgment on Final Award

15.4.2

#### **Labor and Materials, Equipment**

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

5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2, 10.2.1,

10.2.4, 14.2.1.1, 14.2.1.2

Labor Disputes

8.3.1

Laws and Regulations

1.5, 2.3.2, 3.2.3, 3.2.4, 3.6, 3.7, 3.12.10, 3.13, 9.6.4,

9.9.1, 10.2.2, 13.1, 13.3.1, 13.4.2, 13.5, 14, 15.2.8,

15.4

Liens

2.1.2, 9.3.1, 9.3.3, 9.6.8, 9.10.2, 9.10.4, 15.2.8

Limitations, Statutes of

12.2.5, 15.1.2, 15.4.1.1

Limitations of Liability

3.2.2, 3.5, 3.12.10, 3.12.10.1, 3.17, 3.18.1, 4.2.6,

4.2.7, 6.2.2, 9.4.2, 9.6.4, 9.6.7, 9.6.8, 10.2.5, 10.3.3,

11.3, 12.2.5, 13.3.1

Limitations of Time

2.1.2, 2.2, 2.5, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2.7,

5.2, 5.3, 5.4.1, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3,

9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 12.2, 13.4, 14, 15,

15.1.2, 15.1.3, 15.1.5

#### **Materials, Hazardous**

10.2.4, **10.3**

Materials, Labor, Equipment and

1.1.3, 1.1.6, 3.4.1, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,

5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2,

10.2.1.2, 10.2.4, 14.2.1.1, 14.2.1.2

Means, Methods, Techniques, Sequences and

Procedures of Construction

3.3.1, 3.12.10, 4.2.2, 4.2.7, 9.4.2

Mechanic's Lien

2.1.2, 9.3.1, 9.3.3, 9.6.8, 9.10.2, 9.10.4, 15.2.8

#### **Mediation**

8.3.1, 15.1.3.2, 15.2.1, 15.2.5, 15.2.6, **15.3**, 15.4.1,

15.4.1.1

#### **Minor Changes in the Work**

1.1.1, 3.4.2, 3.12.8, 4.2.8, 7.1, **7.4**

Init.

/

## MISCELLANEOUS PROVISIONS

### 13

#### Modifications, Definition of

##### 1.1.1

#### Modifications to the Contract

1.1.1, 1.1.2, 2.5, 3.11, 4.1.2, 4.2.1, 5.2.3, 7, 8.3.1, 9.7, 10.3.2

#### Mutual Responsibility

### 6.2

#### Nonconforming Work, Acceptance of

9.6.6, 9.9.3, **12.3**

Nonconforming Work, Rejection and Correction of  
2.4, 2.5, 3.5, 4.2.6, 6.2.4, 9.5.1, 9.8.2, 9.9.3, 9.10.4, 12.2

#### Notice

**1.6**, 1.6.1, 1.6.2, 2.1.2, 2.2.2., 2.2.3, 2.2.4, 2.5, 3.2.4, 3.3.1, 3.7.4, 3.7.5, 3.9.2, 3.12.9, 3.12.10, 5.2.1, 7.4, 8.2.2, 9.6.8, 9.7, 9.10.1, 10.2.8, 10.3.2, 11.5, 12.2.2.1, 13.4.1, 13.4.2, 14.1, 14.2.2, 14.4.2, 15.1.3, 15.1.5, 15.1.6, 15.4.1

#### Notice of Cancellation or Expiration of Insurance

11.1.4, 11.2.3

#### Notice of Claims

1.6.2, 2.1.2, 3.7.4, 9.6.8, 10.2.8, **15.1.3**, 15.1.5, 15.1.6, 15.2.8, 15.3.2, 15.4.1

#### Notice of Testing and Inspections

13.4.1, 13.4.2

#### Observations, Contractor's

3.2, 3.7.4

#### Occupancy

2.3.1, 9.6.6, 9.8

#### Orders, Written

1.1.1, 2.4, 3.9.2, 7, 8.2.2, 11.5, 12.1, 12.2.2.1, 13.4.2, 14.3.1

## OWNER

### 2

#### Owner, Definition of

##### 2.1.1

#### Owner, Evidence of Financial Arrangements

**2.2**, 13.2.2, 14.1.1.4

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

2.1.2, **2.2**, 2.3, 3.2.2, 3.12.10, 6.1.3, 6.1.4, 6.2.5, 9.3.2, 9.6.1, 9.6.4, 9.9.2, 9.10.3, 10.3.3, 11.2, 13.4.1, 13.4.2, 14.1.1.4, 14.1.4, 15.1.4

#### Owner's Authority

1.5, 2.1.1, 2.3.32.4, 2.5, 3.4.2, 3.8.1, 3.12.10, 3.14.2, 4.1.2, 4.2.4, 4.2.9, 5.2.1, 5.2.4, 5.4.1, 6.1, 6.3, 7.2.1, 7.3.1, 8.2.2, 8.3.1, 9.3.2, 9.5.1, 9.6.4, 9.9.1, 9.10.2, 10.3.2, 11.4, 11.5, 12.2.2, 12.3, 13.2.2, 14.3, 14.4, 15.2.7

#### Owner's Insurance

### 11.2

#### Owner's Relationship with Subcontractors

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

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

**2.5**, 14.2.2

#### Owner's Right to Clean Up

### 6.3

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

### 6.1

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

### 2.4

#### Owner's Right to Suspend the Work

14.3

#### Owner's Right to Terminate the Contract

14.2, 14.4

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

1.1.1, 1.1.6, 1.1.7, **1.5**, 2.3.6, 3.2.2, 3.11, 3.17, 4.2.12, 5.3

#### Partial Occupancy or Use

9.6.6, **9.9**

#### Patching, Cutting and

**3.14**, 6.2.5

#### Patents

3.17

#### Payment, Applications for

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

#### Payment, Certificates for

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

#### Payment, Failure of

9.5.1.3, **9.7**, 9.10.2, 13.5, 14.1.1.3, 14.2.1.2

#### Payment, Final

4.2.1, 4.2.9, **9.10**, 12.3, 14.2.4, 14.4.3

#### Payment Bond, Performance Bond and

7.3.4.4, 9.6.7, 9.10.3, **11.1.2**

#### Payments, Progress

9.3, **9.6**, 9.8.5, 9.10.3, 14.2.3, 15.1.4

## PAYMENTS AND COMPLETION

### 9

#### Payments to Subcontractors

5.4.2, 9.5.1.3, 9.6.2, 9.6.3, 9.6.4, 9.6.7, 14.2.1.2

#### PCB

10.3.1

#### Performance Bond and Payment Bond

7.3.4.4, 9.6.7, 9.10.3, **11.1.2**

#### Permits, Fees, Notices and Compliance with Laws

2.3.1, **3.7**, 3.13, 7.3.4.4, 10.2.2

## PERSONS AND PROPERTY, PROTECTION OF

### 10

#### Polychlorinated Biphenyl

10.3.1

#### Product Data, Definition of

### 3.12.2

#### Product Data and Samples, Shop Drawings

3.11, **3.12**, 4.2.7

#### Progress and Completion

4.2.2, **8.2**, 9.8, 9.9.1, 14.1.4, 15.1.4

#### Progress Payments

9.3, **9.6**, 9.8.5, 9.10.3, 14.2.3, 15.1.4

Init.

/

**Project, Definition of**  
**1.1.4**  
Project Representatives  
4.2.10  
**Property Insurance**  
10.2.5, **11.2**  
**Proposal Requirements**  
1.1.1  
**PROTECTION OF PERSONS AND PROPERTY**  
**10**  
Regulations and Laws  
1.5, 2.3.2, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 9.6.4, 9.9.1,  
10.2.2, 13.1, 13.3, 13.4.1, 13.4.2, 13.5, 14, 15.2.8, 15.4  
Rejection of Work  
4.2.6, 12.2.1  
Releases and Waivers of Liens  
9.3.1, 9.10.2  
Representations  
3.2.1, 3.5, 3.12.6, 8.2.1, 9.3.3, 9.4.2, 9.5.1, 9.10.1  
Representatives  
2.1.1, 3.1.1, 3.9, 4.1.1, 4.2.10, 13.2.1  
Responsibility for Those Performing the Work  
3.3.2, 3.18, 4.2.2, 4.2.3, 5.3, 6.1.3, 6.2, 6.3, 9.5.1, 10  
Retainage  
9.3.1, 9.6.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3  
**Review of Contract Documents and Field**  
**Conditions by Contractor**  
**3.2**, 3.12.7, 6.1.3  
Review of Contractor's Submittals by Owner and  
Architect  
3.10.1, 3.10.2, 3.11, 3.12, 4.2, 5.2, 6.1.3, 9.2, 9.8.2  
Review of Shop Drawings, Product Data and Samples  
by Contractor  
3.12  
**Rights and Remedies**  
1.1.2, 2.4, 2.5, 3.5, 3.7.4, 3.15.2, 4.2.6, 5.3, 5.4, 6.1,  
6.3, 7.3.1, 8.3, 9.5.1, 9.7, 10.2.5, 10.3, 12.2.1, 12.2.2,  
12.2.4, **13.3**, 14, 15.4  
**Royalties, Patents and Copyrights**  
**3.17**  
Rules and Notices for Arbitration  
15.4.1  
**Safety of Persons and Property**  
**10.2**, 10.4  
**Safety Precautions and Programs**  
3.3.1, 4.2.2, 4.2.7, 5.3, **10.1**, 10.2, 10.4  
**Samples, Definition of**  
**3.12.3**  
**Samples, Shop Drawings, Product Data and**  
3.11, **3.12**, 4.2.7  
**Samples at the Site, Documents and**  
**3.11**  
**Schedule of Values**  
**9.2**, 9.3.1  
Schedules, Construction  
3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.6.2

Separate Contracts and Contractors  
1.1.4, 3.12.5, 3.14.2, 4.2.4, 4.2.7, 6, 8.3.1, 12.1.2  
**Separate Contractors, Definition of**  
**6.1.1**  
**Shop Drawings, Definition of**  
**3.12.1**  
**Shop Drawings, Product Data and Samples**  
3.11, **3.12**, 4.2.7  
**Site, Use of**  
**3.13**, 6.1.1, 6.2.1  
Site Inspections  
3.2.2, 3.3.3, 3.7.1, 3.7.4, 4.2, 9.9.2, 9.4.2, 9.10.1, 13.4  
Site Visits, Architect's  
3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.4  
Special Inspections and Testing  
4.2.6, 12.2.1, 13.4  
**Specifications, Definition of**  
**1.1.6**  
**Specifications**  
1.1.1, **1.1.6**, 1.2.2, 1.5, 3.12.10, 3.17, 4.2.14  
Statute of Limitations  
15.1.2, 15.4.1.1  
Stopping the Work  
2.2.2, 2.4, 9.7, 10.3, 14.1  
Stored Materials  
6.2.1, 9.3.2, 10.2.1.2, 10.2.4  
**Subcontractor, Definition of**  
**5.1.1**  
**SUBCONTRACTORS**  
**5**  
Subcontractors, Work by  
1.2.2, 3.3.2, 3.12.1, 3.18, 4.2.3, 5.2.3, 5.3, 5.4, 9.3.1.2,  
9.6.7  
**Subcontractual Relations**  
**5.3**, 5.4, 9.3.1.2, 9.6, 9.10, 10.2.1, 14.1, 14.2.1  
Submittals  
3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 7.3.4, 9.2, 9.3, 9.8,  
9.9.1, 9.10.2, 9.10.3  
Submittal Schedule  
3.10.2, 3.12.5, 4.2.7  
**Subrogation, Waivers of**  
6.1.1, **11.3**  
**Substances, Hazardous**  
**10.3**  
**Substantial Completion**  
4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, **9.8**, 9.9.1, 9.10.3, 12.2,  
15.1.2  
**Substantial Completion, Definition of**  
**9.8.1**  
Substitution of Subcontractors  
5.2.3, 5.2.4  
Substitution of Architect  
2.3.3  
Substitutions of Materials  
3.4.2, 3.5, 7.3.8  
**Sub-subcontractor, Definition of**  
**5.1.2**

Subsurface Conditions  
3.7.4

**Successors and Assigns**  
**13.2**

**Superintendent**  
3.9, 10.2.6

**Supervision and Construction Procedures**  
1.2.2, **3.3**, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4, 7.1.3,  
7.3.4, 8.2, 8.3.1, 9.4.2, 10, 12, 14, 15.1.4

Suppliers  
1.5, 3.12.1, 4.2.4, 4.2.6, 5.2.1, 9.3, 9.4.2, 9.5.4, 9.6,  
9.10.5, 14.2.1

Surety  
5.4.1.2, 9.6.8, 9.8.5, 9.10.2, 9.10.3, 11.1.2, 14.2.2,  
15.2.7

Surety, Consent of  
9.8.5, 9.10.2, 9.10.3

Surveys  
1.1.7, 2.3.4

**Suspension by the Owner for Convenience**  
**14.3**

Suspension of the Work  
3.7.5, 5.4.2, 14.3  
Suspension or Termination of the Contract  
5.4.1.1, 14

**Taxes**  
3.6, 3.8.2.1, 7.3.4.4

**Termination by the Contractor**  
**14.1**, 15.1.7

**Termination by the Owner for Cause**  
5.4.1.1, **14.2**, 15.1.7

**Termination by the Owner for Convenience**  
**14.4**

Termination of the Architect  
2.3.3  
Termination of the Contractor Employment  
14.2.2

**TERMINATION OR SUSPENSION OF THE  
CONTRACT**

**14**  
**Tests and Inspections**

3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3,  
9.9.2, 9.10.1, 10.3.2, 12.2.1, **13.4**

**TIME**  
**8**

**Time, Delays and Extensions of**  
3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3.1, 7.4, **8.3**, 9.5.1, 9.7,  
10.3.2, 10.4, 14.3.2, 15.1.6, 15.2.5

**Time Limits**

2.1.2, 2.2, 2.5, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2,  
5.2, 5.3, 5.4, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3, 9.4.1,  
9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 12.2, 13.4, 14, 15.1.2,  
15.1.3, 15.4

**Time Limits on Claims**  
3.7.4, 10.2.8, 15.1.2, 15.1.3

Title to Work  
9.3.2, 9.3.3

**UNCOVERING AND CORRECTION OF WORK**  
**12**

**Uncovering of Work**  
**12.1**

Unforeseen Conditions, Concealed or Unknown  
3.7.4, 8.3.1, 10.3

Unit Prices  
7.3.3.2, 9.1.2

Use of Documents  
1.1.1, 1.5, 2.3.6, 3.12.6, 5.3

**Use of Site**  
**3.13**, 6.1.1, 6.2.1

**Values, Schedule of**  
**9.2**, 9.3.1

Waiver of Claims by the Architect  
13.3.2

Waiver of Claims by the Contractor  
9.10.5, 13.3.2, **15.1.7**

Waiver of Claims by the Owner  
9.9.3, 9.10.3, 9.10.4, 12.2.2.1, 13.3.2, 14.2.4, **15.1.7**

Waiver of Consequential Damages  
14.2.4, 15.1.7

Waiver of Liens  
9.3, 9.10.2, 9.10.4

**Waivers of Subrogation**  
6.1.1, **11.3**

**Warranty**  
**3.5**, 4.2.9, 9.3.3, 9.8.4, 9.9.1, 9.10.2, 9.10.4, 12.2.2,  
15.1.2

Weather Delays  
8.3, 15.1.6.2

**Work, Definition of**  
**1.1.3**

Written Consent  
1.5.2, 3.4.2, 3.7.4, 3.12.8, 3.14.2, 4.1.2, 9.3.2, 9.10.3,  
13.2, 13.3.2, 15.4.4.2

Written Interpretations  
4.2.11, 4.2.12

Written Orders  
1.1.1, 2.4, 3.9, 7, 8.2.2, 12.1, 12.2, 13.4.2, 14.3.1

## 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 or proposal 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. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

### § 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.

**§ 1.2.1.1** The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

**§ 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 retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and 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 the 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 suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, 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 suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

### **§ 1.6 Notice**

**§ 1.6.1** Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

**§ 1.6.2** Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

### **§ 1.7 Digital Data Use and Transmission**

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

### **§ 1.8 Building Information Models Use and Reliance**

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document

G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

## **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 Evidence of the Owner's Financial Arrangements**

**§ 2.2.1** Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

**§ 2.2.2** Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

**§ 2.2.3** After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

**§ 2.2.4** Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

### **§ 2.3 Information and Services Required of the Owner**

**§ 2.3.1** 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.

**§ 2.3.2** 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.

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

**§ 2.3.4** 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.

**§ 2.3.5** 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.

**§ 2.3.6** 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.

#### **§ 2.4 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.

#### **§ 2.5 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 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 default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for 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. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

### **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 its 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 2.3.4, 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 submit 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, subject to Section 15.1.7, 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. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be 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 notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative 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 approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 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

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless 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.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

### § 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 14 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 that an equitable adjustment be made 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, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim 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 notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice 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 and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably 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, or fails to provide submittals in accordance with the approved 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 make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and

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 how 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 the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect 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 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.

§ 3.12.10.1 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 be entitled to rely

upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately 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 and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and 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.

**§ 3.12.10.2** If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

### **§ 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, 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, or patching shall be restored to the condition existing prior to the cutting, fitting, or 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 construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its 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 and 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 the Owner shall be entitled to reimbursement from the Contractor.

### **§ 3.16 Access to Work**

The Contractor shall provide the Owner and Architect with 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 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 an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the 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 Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 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.

### § 4.2 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.

§ 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 promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) 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

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 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 13.4.2 and 13.4.3, whether or not the 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, 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 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 order 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 Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 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 the 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, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice 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 for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

### § 5.3 Subcontractual Relations

By appropriate written agreement, 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 that the Contractor, by these Contract 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; 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 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 term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

**§ 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 any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its 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 or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has 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 notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work 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. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

**§ 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 that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor 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. The Contractor shall proceed promptly with changes in the Work, 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.
- .4 Total markup for Change Orders to be limited to 12% of all labor, materials, etc. for affected work. No charges will be allowed for bonds or supervision.

### § 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 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine 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 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .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, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 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.

§ 7.3.7 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.

§ 7.3.8 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 may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

### 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, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 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 (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended 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

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

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

### § 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent 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. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and 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 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, suppliers, or other persons or entities that 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 (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole 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 in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. 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. 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 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 suppliers 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 either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 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 supplier 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 Contractor shall reflect such payment on its next Application 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 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 and suppliers 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 or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to 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 or provided by 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, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and

litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

### **§ 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' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, 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; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and 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 the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the 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 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 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. 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 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, (3) a written statement that the Contractor knows of no 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, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and 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, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance 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 the lien, claim, security interest, or encumbrance, 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, corrected, 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 the 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;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a 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, a Subcontractor, or a Sub-subcontractor; 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 implement, 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 the owners and users of adjacent sites and utilities of the safeguards.

§ 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. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is 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, notice of the 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 and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. 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 notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's 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 the material or substance or who are to perform the task of removal or safe containment of the 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 by the amount of the Contractor's reasonable additional costs of shutdown, 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 hazardous 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 hazardous 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 reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances 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 reimburse 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 Insurance and Bonds**

**§ 11.1.1** The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

**§ 11.1.2** The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

**§ 11.1.3** 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.

**§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance.** Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

## **§ 11.2 Owner's Insurance**

**§ 11.2.1** The Owner shall maintain insurance. .

**§ 11.2.2 Failure to Purchase Required Property Insurance.** If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

**§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance.** Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

## **§ 11.3 Waivers of Subrogation**

**§ 11.3.1** 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; (2) the Architect and Architect's consultants; and (3) Separate Contractors, 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 those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

**§ 11.3.2** 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, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

#### **§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance**

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

#### **§11.5 Adjustment and Settlement of Insured Loss**

**§ 11.5.1** A loss insured under the property insurance required by the Agreement 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 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

**§ 11.5.2** Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

### **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, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

#### **§ 12.2 Correction of Work**

##### **§ 12.2.1 Before Substantial Completion**

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before 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 any 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 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 2.5.

**§ 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 of the Owner or Separate Contractors, whether completed or partially completed, 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, excluding that jurisdiction's choice of law rules. 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 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 the assignment.

### **§ 13.3 Rights and Remedies**

**§ 13.3.1** 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.

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

## § 13.4 Tests and Inspections

§ 13.4.1 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 tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 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 13.4.1, 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 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 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.

§ 13.4.4 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.

§ 13.4.5 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.

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

## § 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties 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.

## 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, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, 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 reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, 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' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work 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' 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 or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .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 reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner 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' 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 under 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 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 Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

## **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, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

#### **§ 15.1.2 Time Limits on Claims**

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the 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 15.1.2.

#### **§ 15.1.3 Notice of Claims**

**§ 15.1.3.1** Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by 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 under this Section 15.1.3.1 shall 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.

**§ 15.1.3.2** Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

#### **§ 15.1.4 Continuing Contract Performance**

**§ 15.1.4.1** 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.

**§ 15.1.4.2** The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

#### **§ 15.1.5 Claims for Additional Cost**

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

#### **§ 15.1.6 Claims for Additional Time**

**§ 15.1.6.1** If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 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.

**§ 15.1.6.2** 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.

### **§ 15.1.7 Waiver of 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 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

### **§ 15.2 Initial Decision**

**§ 15.2.1** Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, 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. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a 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 the 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 receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, 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.

| *(Paragraphs deleted)*



# AIA<sup>®</sup> Document A305<sup>™</sup> – 1986

## Contractor's Qualification Statement

The Undersigned certifies under oath that the information provided herein is true and sufficiently complete so as not to be misleading.

**SUBMITTED TO:**

**ADDRESS:**

**SUBMITTED BY:**

**NAME:**

**ADDRESS:**

**PRINCIPAL OFFICE:**

- Corporation
- Partnership
- Individual
- Joint Venture
- Other

**NAME OF PROJECT:** *(if applicable)* **Whitfield Animal Shelter Office**

**+ TYPE OF WORK:** *(file separate form for each Classification of Work)*

- General Construction
- HVAC
- Electrical
- Plumbing
- Other: *(Specify)*

### § 1 ORGANIZATION

§ 1.1 How many years has your organization been in business as a Contractor?

§ 1.2 How many years has your organization been in business under its present business name?

§ 1.2.1 Under what other or former names has your organization operated?

§ 1.3 If your organization is a corporation, answer the following:

§ 1.3.1 Date of incorporation:

§ 1.3.2 State of incorporation:

### 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. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

This form is approved and recommended by the American Institute of Architects (AIA) and The Associated General Contractors of America (AGC) for use in evaluating the qualifications of contractors. No endorsement of the submitting party or verification of the information is made by AIA or AGC.

§ 1.3.3 President's name:

§ 1.3.4 Vice-president's name(s)

§ 1.3.5 Secretary's name:

§ 1.3.6 Treasurer's name:

§ 1.4 If your organization is a partnership, answer the following:

§ 1.4.1 Date of organization:

§ 1.4.2 Type of partnership (if applicable):

§ 1.4.3 Name(s) of general partner(s)

§ 1.5 If your organization is individually owned, answer the following:

§ 1.5.1 Date of organization:

§ 1.5.2 Name of owner:

§ 1.6 If the form of your organization is other than those listed above, describe it and name the principals:

## § 2 LICENSING

§ 2.1 List jurisdictions and trade categories in which your organization is legally qualified to do business, and indicate registration or license numbers, if applicable.

§ 2.2 List jurisdictions in which your organization's partnership or trade name is filed.

## § 3 EXPERIENCE

§ 3.1 List the categories of work that your organization normally performs with its own forces.

§ 3.2 Claims and Suits. (If the answer to any of the questions below is yes, please attach details.)

§ 3.2.1 Has your organization ever failed to complete any work awarded to it?

§ 3.2.2 Are there any judgments, claims, arbitration proceedings or suits pending or outstanding against your organization or its officers?

§ 3.2.3 Has your organization filed any law suits or requested arbitration with regard to construction contracts within the last five years?

§ 3.3 Within the last five years, has any officer or principal of your organization ever been an officer or principal of another organization when it failed to complete a construction contract? (If the answer is yes, please attach details.)

**§ 3.4** On a separate sheet, list major construction projects your organization has in progress, giving the name of project, owner, architect, contract amount, percent complete and scheduled completion date.

**§ 3.4.1** State total worth of work in progress and under contract:

**§ 3.5** On a separate sheet, list the major projects your organization has completed in the past five years, giving the name of project, owner, architect, contract amount, date of completion and percentage of the cost of the work performed with your own forces.

**§ 3.5.1** State average annual amount of construction work performed during the past five years:

**§ 3.6** On a separate sheet, list the construction experience and present commitments of the key individuals of your organization.

#### **§ 4 REFERENCES**

**§ 4.1** Trade References:

**§ 4.2** Bank References:

**§ 4.3** Surety:

**§ 4.3.1** Name of bonding company:

**§ 4.3.2** Name and address of agent:

#### **§ 5 FINANCING**

**§ 5.1** Financial Statement.

**§ 5.1.1** Attach a financial statement, preferably audited, including your organization's latest balance sheet and income statement showing the following items:

Current Assets (e.g., cash, joint venture accounts, accounts receivable, notes receivable, accrued income, deposits, materials inventory and prepaid expenses);

Net Fixed Assets;

Other Assets;

Current Liabilities (e.g., accounts payable, notes payable, accrued expenses, provision for income taxes, advances, accrued salaries and accrued payroll taxes);

Other Liabilities (e.g., capital, capital stock, authorized and outstanding shares par values, earned surplus and retained earnings).

§ 5.1.2 Name and address of firm preparing attached financial statement, and date thereof:

§ 5.1.3 Is the attached financial statement for the identical organization named on page one?

§ 5.1.4 If not, explain the relationship and financial responsibility of the organization whose financial statement is provided (e.g., parent-subsidiary).

§ 5.2 Will the organization whose financial statement is attached act as guarantor of the contract for construction?

**§ 6 SIGNATURE**

§ 6.1 Dated at this    day of

Name of Organization:

By:

Title:

§ 6.2

M    being duly sworn deposes and says that the information provided herein is true and sufficiently complete so as not to be misleading.

Subscribed and sworn before me this    day of

Notary Public:

My Commission Expires:



# AIA® Document A310™ – 2010

## Bid Bond

**CONTRACTOR:**

*(Name, legal status and address)*

**SURETY:**

*(Name, legal status and principal place of business)*

**OWNER:**

*(Name, legal status and address)*

Whitfield County Board of Commissioners  
201 S. Hamilton Street Dalton, GA 30720

**BOND AMOUNT: \$****PROJECT: WHITFIELD COUNTY ANIMAL SHELTER OFFICE BUILDING**

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so

**ADDITIONS AND DELETIONS:**

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

Init.

furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this    day of    ,

\_\_\_\_\_  
*(Witness)*

\_\_\_\_\_  
*(Witness)*

\_\_\_\_\_  
*(Contractor as Principal)*

\_\_\_\_\_  
*(Seal)*

\_\_\_\_\_  
*(Title)*

\_\_\_\_\_  
*(Surety)*

\_\_\_\_\_  
*(Seal)*

\_\_\_\_\_  
*(Title)*

Init.

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**User Notes:**

(1699690561)



# AIA<sup>®</sup> Document A312<sup>™</sup> – 2010

## Payment Bond

**CONTRACTOR:**

*(Name, legal status and address)*

**SURETY:**

*(Name, legal status and principal place of business)*

**OWNER:**

*(Name, legal status and address)*

Whitfield County Board of Commissioners

**CONSTRUCTION CONTRACT**

Date:

Amount: \$

Description:

*(Name and location)*

WHITFIELD COUNTY ANIMAL SHELTER OFFICE BUILDING

**BOND**

Date:

*(Not earlier than Construction Contract Date)*

Amount: \$

Modifications to this Bond:  None  See Section 18

**CONTRACTOR AS PRINCIPAL**

Company: *(Corporate Seal)*

**SURETY**

Company: *(Corporate Seal)*

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

Name and

Title:

*(Any additional signatures appear on the last page of this Payment Bond.)*

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

Name and

Title:

*(FOR INFORMATION ONLY — Name, address and telephone)*

**AGENT or BROKER:****OWNER'S REPRESENTATIVE:**

*(Architect, Engineer or other party:)*

**ADDITIONS AND DELETIONS:**

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor,

- .1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
- .2 have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

§ 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

#### § 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- .1 the name of the Claimant;
- .2 the name of the person for whom the labor was done, or materials or equipment furnished;
- .3 a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- .4 a brief description of the labor, materials or equipment furnished;
- .5 the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- .6 the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- .7 the total amount of previous payments received by the Claimant; and
- .8 the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

**§ 16.4 Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

**§ 16.5 Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

**§ 17** If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

**§ 18** Modifications to this bond are as follows:

*(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)*

**CONTRACTOR AS PRINCIPAL**

Company: \_\_\_\_\_ (Corporate Seal)

Signature: \_\_\_\_\_  
Name and Title: \_\_\_\_\_  
Address: \_\_\_\_\_

**SURETY**

Company: \_\_\_\_\_ (Corporate Seal)

Signature: \_\_\_\_\_  
Name and Title: \_\_\_\_\_  
Address: \_\_\_\_\_



# AIA<sup>®</sup> Document A312<sup>™</sup> – 2010

## Performance Bond

**CONTRACTOR:**

*(Name, legal status and address)*

**SURETY:**

*(Name, legal status and principal place of business)*

**OWNER:**

*(Name, legal status and address)*

Whitfield County Board of Commissioners

**CONSTRUCTION CONTRACT**

Date:

Amount: \$

Description:

*(Name and location)*

WHITFIELD COUNTY ANIMAL SHELTER OFFICE BUILDING

**BOND**

Date:

*(Not earlier than Construction Contract Date)*

Amount: \$

Modifications to this Bond:  None  See Section 16

**CONTRACTOR AS PRINCIPAL**

Company: *(Corporate Seal)*

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

Name and

Title:

*(Any additional signatures appear on the last page of this Performance Bond.)*

**SURETY**

Company: *(Corporate Seal)*

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

Name and

Title:

*(FOR INFORMATION ONLY — Name, address and telephone)*

**AGENT or BROKER:****OWNER'S REPRESENTATIVE:**

*(Architect, Engineer or other party:)*

**ADDITIONS AND DELETIONS:**

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

Init.

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§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

- .1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;
- .2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
- .3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

- .1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
- .2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the

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User Notes:

(2003125061)

Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

- .1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
- .2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and
- .3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

**§ 8** If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

**§ 9** The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

**§ 10** The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

**§ 11** Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

**§ 12** Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

**§ 13** When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

#### **§ 14 Definitions**

**§ 14.1 Balance of the Contract Price.** The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

**§ 14.2 Construction Contract.** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

**§ 14.3 Contractor Default.** Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

**§ 14.4 Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

**§ 14.5 Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

**§ 15** If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:

*(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)*

**CONTRACTOR AS PRINCIPAL**

Company: \_\_\_\_\_  
*(Corporate Seal)*

Signature: \_\_\_\_\_  
Name and Title: \_\_\_\_\_  
Address: \_\_\_\_\_

**SURETY**

Company: \_\_\_\_\_  
*(Corporate Seal)*

Signature: \_\_\_\_\_  
Name and Title: \_\_\_\_\_  
Address: \_\_\_\_\_

Init.

/

## Georgia Security and Immigration Compliance Act

**Contractor** agrees to comply with all of the contractor requirements of the “Georgia Security and Immigration Compliance Act” of 2006, as codified in O.C.G.A. sections 13-10-90 and 13-10-91 and regulated in chapter 300-10-1 of the Rules and Regulations of the State of Georgia, “Public Employers, Their Contractors and Subcontractors Required to Verify New Employee Work Eligibility Through a Federal Work Authorization Program,” accessed at <http://www.dol.state.ga.us>, as further set forth below.

- A. Contractor Agreement to Verify the Work Eligibility of its New Hires through the U.S. Department of Homeland Security’s “Employment Eligibility Verification (EEV)/Basic Pilot Program.”
- **Contractor** agrees to verify the work eligibility of all of **Contractor’s** newly hired employees through the U.S. Department of Homeland Security’s **Employee Eligibility Verification (EEV)/Basic Pilot Program**, accessed through the Internet at <https://www.vis-dhs.com/EmployerRegistration>, in accordance with the provisions and timeline found in O.C.G.A 13-10-91 and Rule 300-10-1-.02 of the Rules and Regulations of the State of Georgia. As of July 1, 2007, the verification requirement applies to contractors and subcontractors with five hundred (500) or more employees.
- B. Contracts Affected by the “Georgia Security and Immigration Compliance Act.”
- **Contractor** agrees that the contractor and subcontractor requirements of the “Georgia Security and Immigration Compliance Act” of 2006 apply to contracts for, or in connection with, the physical performance of services within the State of Georgia.
- C. Timeline for Application of the Worker Eligibility Verification Requirements to Contractors and Subcontractors.
- **Contractor** agrees that the following Georgia Security and Immigration Compliance Act contract compliance dates apply to this contract, pursuant to O.C.G.A. 13-10-91:  
On or after July 1, 2007, to public employers, contractors of 500 or more employees;  
On or after July 1, 2008, to public employers, contractors of 100 or more employees; and  
On or after July 1, 2009, to all other public employers, their contractors, and subcontractors.
- D. Contractor’s Indication of its Employee-number Category and the “Contractor Affidavit and Agreement” Requirements Pertaining to Such Category.
- To document the date on which the “Georgia Security and Immigration Compliance Act” is applicable to **Contractor**, and to document **Contractor’s** compliance with the Act, **Contractor** agrees to initial one of the three (3)

lines below indicating the employee-number category applicable to the **Contractor**, and to submit the indicated affidavit with this contract if the **Contractor** has 500 or more employees.

The **Contractor** has:

\_\_\_\_\_ 500 or more employees [**Contractor** must register with the **Employee Eligibility Verification/Basic Pilot Program** and begin work eligibility verification on **July 1, 2007**, and execute and send to **Department a “Contractor Affidavit and Agreement”** attesting to registration with the **EEV/Basic Pilot Program**];

\_\_\_\_\_ 100-449 employees [**Contractor** must register with the **Employee Eligibility Verification/Basic Pilot Program** and begin work eligibility verification by **July 1, 2008**]; or

\_\_\_\_\_ 99 or fewer employees [**Contractor** must begin work eligibility verification by **July 1, 2009**].

Contractor’s Agreement to Require “Georgia Security and Immigration Compliance Act” Compliance of its Subcontractors Connected with this Contract.

1. **Contractor** agrees to require O.C.G.A. Sections 13-10-901 and 13-10-91 compliance in all written agreements with any subcontractor employed by **Contractor** to provide services connected with this contract, as required pursuant to O.C.G.A. 13-10-91.
2. **Contractor** agrees to obtain from any subcontractor that is employed by Contractor to provide services connected with this contract, the subcontractor’s indication of the employee-number category applicable to the subcontractor.
3. **Contractor** agrees to secure from any subcontractor engaged to perform services under this Contract an executed “Subcontractor Affidavit,” as required pursuant to O.C.G.A. 13-10-91 and Rule 300-10-1-.08 of the Rules and Regulations of the State of Georgia, which rule can be accessed at <http://www.dol.state.ga.us>.
4. **Contractor** agrees to maintain all records of the subcontractor’s compliance with O.C.G.A. Sections 13-10-90 and 13-10-91 and Chapter 300-10-1 of the Rules and Regulations of the State of Georgia.

**CONTRACT AFFIDAVIT AND AGREEMENT**

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. 13-10-91, stating affirmatively that the individual, firm, or corporation which is contracting with Whitfield County, Georgia has registered with and is participating in a federal work authorization program\* [any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act of 1986 (IRCA), P.L. 99-603], in accordance with the applicability provisions and deadlines established in O.C.G.A. 13-10-91.

The undersigned further agrees that, should it employ or contract with any subcontractor(s) similar verification of compliance with O.C.G.A. 13-10-91 on the Subcontractor Affidavit provided in Rule 300-10-01-.08 or a substantially similar form. Contractor further agrees to maintain records of such compliance and provide copy of each such verification to the Whitfield County, Georgia at the time the subcontractor(s) is retained to perform such service.

\_\_\_\_\_  
EEV/Basic Pilot Program\*User Identification Number

\_\_\_\_\_  
BY: Authorized Officer or Agent  
(Contractor Name)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title of Authorized Officer or Agent of Contractor

\_\_\_\_\_  
Printed Name of Authorized Officer or Agent

SUBSCRIBED AND SWORN  
BEFORE ME ON THIS THE  
\_\_\_\_ DAY \_\_\_\_\_, 20\_\_

\_\_\_\_\_  
Notary Public  
My Commission Expires:

\*As of the effective date of O.C.G.A. 13-10-91, the applicable federal work authorization program is the "EEV/Basic Pilot Program" operated by the U.S. Citizenship and Immigration Services Bureau of the U.S. Department of Homeland Security, in conjunction with the Social Security Administration (SSA).

SECTION 011113  
SUMMARY OF THE WORK

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

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011113-1

1.1 RELATED DOCUMENTS

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

1.2 PROJECT DESCRIPTION

- A. The Project consists of the construction of a new Animal Shelter Office Facility for Whitfield County. The facility is an 1,800 s.f. one-story wood pile footing building with slab-on-grade foundation, post-frame structure with wood stud framing, wood trusses, metal panel and stone exterior walls and metal roof. Refer to the drawings and project manual as prepared by CARTER WATKINS ASSOCIATES ARCHITECTS, INC. Contracting shall be by means of a General Contractor for Construction between one General Contractor and Whitfield County.
- B. The work will include the under-slab plumbing stubbed out from building 5-feet, building shell and interior walls, and 4" 3,000 psi concrete slab.

C. SPECIAL NOTES –

1. The Standard of Design for the post-frame structure is Morton Buildings, Inc. Contractor shall provide details shop drawing submittals from Morton, FBI, or other companies. The Shop Drawings shall include all structure, framing, trusses, exterior construction and finishes, wall purlins, ceiling framing, and all exterior finishes, accessories, wall panels, roof panels, stone wainscot, doors, windows, porches and structure, louvers, vents, etc..

1.3 CONTRACTORS USE OF PREMISES

- A. General: Limit use of the premises only to construction activities in areas indicated.
1. Confine operations to areas within Construction limits to areas mutually agreed upon with the Owner. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.
  2. Keep driveways and entrances serving the premises and the park grounds clean and available to the Owner. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.
  3. Contractor to be responsible for all testing including materials, compaction, concrete, etc.

END OF SECTION

SECTION 01 21 13  
ALLOWANCES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

012113-1

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PART 1 - GENERAL

ALLOWANCES ARE AS FOLLOWS (IF ANY):

1. Hardware Allowance: (allowance to provide for the purchase of hardware materials only. Labor, preparation, etc. to be included in base bid amount).  
\$ 900 per exterior door leaf.

END OF SECTION

SECTION 01 23 00

ALTERNATES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

01 23 00-1

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

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PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements for Alternates.
- B. Definition: an Alternate is an amount proposed by Bidders and stated on the Bid Form for certain construction activities defined in the Bidding Requirements that may be added to or deducted from base Bid amount if the Owner decides to accept a corresponding change in either the amount of construction to be completed, or in the products, materials, equipment, systems, or installation methods described in Contract Documents.
- C. Coordination: Coordinate related Work and modify or adjust adjacent work as necessary to ensure that work affected by each accepted Alternate is complete and fully integrated into the project.
- D. Notification: Immediately following the award of the Contract, prepare and distribute to each party involved, notification of the status of each Alternate. Indicate whether Alternates have been accepted, rejected or deferred for consideration at a later date. Include a complete description of negotiated modifications to Alternates.
- E. Schedule: Specification Sections contain requirements for materials and methods necessary to achieve the work described under each Alternate.

Alternate Additions/Deductions to the Base Bid (IF ANY) Refer to Addendums for future alternates.

1.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01 25 13  
PRODUCT SUBSTITUTIONS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 25 13

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling requests for substitutions made after award of the Contract.
- B. The Contractor's Construction Schedule and the Schedule of Submittals are included under Section "Submittals."
- C. Standards: Refer to Section "Definitions and Standards" for applicability of industry standards to produce specified.
- D. Procedural requirements governing the Contractor's selection of products and product options are included under Section "Materials and Equipment."

1.3 DEFINITIONS

- A. Definitions used in the Article are not intended to change or modify the meaning of other terms used in the Contract Documents.
- B. Substitutions: Requests for changes in products, materials, equipment, and methods of construction required by Contract Documents proposed by the Contractor after award of the Contract are considered requests for "substitutions." The following are not considered substitutions:
1. Revisions to Contract Documents requested by the Owner or Architect.
  2. Specified options of products and construction methods included in Contract Documents.
  3. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

1.4 SUBMITTALS

- A. Substitution Request Submittal: Requests for substitution will be considered if received within 15 days after commencement of the work. Requests received more than 15 days after commencement Of the Work may be considered or rejected at the discretion of the Architect.

1. Submit 3 copies of each request for substitution for consideration. Submit requests in

SECTION 01 25 13  
PRODUCT SUBSTITUTIONS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 25 13

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the form and in accordance with procedures required for Change Order proposals.

2. The Architect will consider only those requests accompanied by a copy of the Request for Substitution form bound herein, filled out completely, signed, and including the required attachments.
3. Architect's Action: Within one week of receipt of the request for substitution, the Architect will request additional information or documentation necessary for evaluation of the request. Within 2 weeks of receipt of the request, or one week of receipt of the additional information or documentation, whichever is later, the Architect will notify the Contractor of acceptance or rejection of the proposed substitution. If a decision on use of a proposed substitute cannot be made or obtained within the time allocated, use the product specified by name. Acceptance will be in the form of a Change Order.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Conditions: The Contractor's substitution request will be received and considered by the Architect when one or more of the following conditions are satisfied, as determined by the Architect; otherwise requests will be returned without action except to record noncompliance with these requirements.

1. Extensive revisions to Contract Documents are not required.
2. Proposed changes are in keeping with the general intent of Contract Documents.
3. The request is timely, fully documented and properly submitted.
4. The specified product or method of construction cannot be provided within the Contract Time. The request will not be considered if the product or method cannot be provided as a result of failure to pursue the work promptly or coordinate activities properly.
5. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
6. A substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear. Additional responsibilities for the Owner may include additional compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner or separate Contractors, and similar considerations.
7. The specified product or method of construction cannot be provided in a manner that is

SECTION 01 25 13  
PRODUCT SUBSTITUTIONS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 25 13

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compatible with other materials, and where the Contractor certifies that the substitution will overcome the incompatibility.

8. The specified product or method of construction cannot be coordinated with other materials, and where the Contractor certifies that the proposed substitution can be coordinated.
9. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provide the required warranty.

- B. The Contractor's submittal and Architect's acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

PROPOSED REQUEST FOR SUBSTITUTION

SECTION 01 25 13  
PRODUCT SUBSTITUTIONS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 25 13

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

FROM: \_\_\_\_\_  
Name of Manufacturer  
\_\_\_\_\_  
Street Address  
\_\_\_\_\_  
City and State  
\_\_\_\_\_  
Phone number and name of person to contact

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

1. Specification Section and Paragraph numbers of product specified  
\_\_\_\_\_.

2. Proposed Substitute

- A. Name and Model No:
- B. Description:
- C. Attach applicable Submittals as required by the referenced Specification Section, i.e. Product Data, Materials List, Shop Drawings, Samples, Design Data, Test Reports, and Certificates. Attach Shop Drawings to the effect of the proposed substitution on adjacent components of the work.
- D. Insert Numbers of applicable reference standards:
- E. Attach a color chart; if applicable.

SECTION 01 25 13  
PRODUCT SUBSTITUTIONS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 25 13

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- F. Attach installation instructions.
3. Manufacturer's Reputation: Attach the following:
- A. Evidence of reputation for prompt delivery.
  - B. Evidence of reputation for efficiency in servicing products.
4. Comparison: Attach an itemized comparison of the proposed substitution with product specified. Significant qualities may include elements such as size, weight, durability, performance, and visual effects.
5. Changes in Work: Attach data relating to changes required in other work to permit use of proposed substitution and changes required in construction schedule and overall contract time. Coordinate changes or modifications needed to other parts of the work and to construction performed by the Owner and separate Contractors that will be necessary to accommodate the proposed substitution.
6. Cost Data: Attach accurate cost data on proposed substitution in comparison with product specified.
7. Previous Installation: Provide the following information on similar projects on which proposed substitution was used, list projects in the locale of the project primarily and then in other areas that best represent its application on this project:

Name and Address of Project	Date of Installation	Name, Address and Phone Number of Architect
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A.

B.

C.

D.

SECTION 01 25 13  
PRODUCT SUBSTITUTIONS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 25 13

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8. In making a request for substitution, the Manufacturer, Installer, and Contractor each represents that:

- A. He has examined the Drawings and Specifications and has determined that, to the best of his knowledge, the proposed substitution is appropriate for the use intended in the Drawings and Specifications.
- B. He will provide the same or better warranty for substitution as for product or method specified.
- C. The product is equal or better in quality and serviceability to the specified item.

9. In making a request for substitution, the Installer and Contractor each represents that:

- A. He will coordinate the installation of accepted substitution into the work, making such changes as may be required for the work to be complete in all respects.
- B. He waives all claims for additional costs related to substitution which consequently become apparent.
- C. Cost data is complete and includes all related costs under his Contract, but excludes costs under separate contracts and the Architect's redesign costs.
- D. The substitution meets the requirements of the Contract Documents, regardless of the evidence submitted or any review or independent investigation by the Owner or the Architect.

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Name of Manufacturer and signature of Manufacturer's Rep    Date

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Name of Installer and signature of Installer's Rep            Date

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Name of Contractor and signature of Contractor's Rep        Date

SECTION 01 26 00  
MODIFICATION PROCEDURES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 26 00-1

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This section specifies administrative and procedural requirements for handling and processing Contract modifications.

1.3 MINOR CHANGES IN THE WORK

- A. Supplemental instructions authorizing minor changes in the Work, not involving an adjustment to the Contract Sum or Contract Time, will be issued by the Architect on AIA form G710, Architect's Supplemental Instructions.

1.4 CHANGE ORDER PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Proposed changes in the Work that will require adjustment to the Contract Sum or Contract Time will be issued by the Architect, with a detailed description of the proposed change and supplemental or revised Drawings and Specifications, if necessary.
1. Proposal requests issued by the Architect are for information only. Do not consider them instruction either to stop work in progress, or to execute the proposed change.
  2. Unless otherwise indicated in the proposal request, within 20 days of receipt of the proposal request, submit to the Architect for the Owner's review an estimate of cost necessary to execute the proposed change.
    - a. Include a list of quantities of products to be purchased and unit costs, along with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
    - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    - c. Include a statement indicating the effect the proposed change in the Work will have

**SECTION 01 26 00  
MODIFICATION PROCEDURES**

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 26 00-2

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on the Contract Time.

- B. Contractor-Initiated Change Order Proposals: When latent or other unforeseen conditions require modifications to the Contract, the Contractor may propose changes by submitting a change proposal to the Architect.
1. Include a statement outlining the reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and Contract Time.
  2. Include a list of quantities of products to be purchased and unit costs along with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
  3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
  4. Comply with requirements in Section "Product Substitutions" if the proposed change in the Work requires the substitution of one product or system for a product or system specified.

**1.5 ALLOWANCES**

- A. Allowance Adjustment: Base each Change Order Proposal for an allowance cost adjustment solely on the difference between the actual purchase amount and the allowance, multiplied by the final measurement of work-in-place, with reasonable allowances, where applicable, for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.

**1.6 CONSTRUCTION CHANGE DIRECTIVE**

- A. Construction Change Directive: When the Owner and Contractor are not in total agreement on the terms of a Change Order Proposal Request, the Architect may issue a Construction Change Directive on AIA for G714, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
1. After completion of the change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

**1.7 CHANGE ORDER PROCEDURES**

- A. Upon the Owner's approval of a Change Order Proposal, the Architect will issue a Change Order for signatures of the Owner and Contractor on AIA Form G701, as provided in the Conditions of the

SECTION 01 26 00  
MODIFICATION PROCEDURES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 26 00-3

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Contract.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01 29 00  
APPLICATION FOR PAYMENT

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 29 00-1

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1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements governing the Contractor's Applications for Payment.

1.3 SCHEDULE OF VALUES

- A. Coordinate preparation of the Schedule of Values with preparation of the Contractor's Construction Schedule.

1. Submit the Schedule of Values to the Architect at the earliest feasible date, but in no case later than 7 days before the date scheduled for submittal of the initial Application for Payment.

- B. Format and Content: Use the Project Manual Table of Contents as a guide to establish the format for the Schedule of Values.

1. Identification: Include the following Project Identification on the Schedule of Values:

- a. Project name
- b. Name of the Architect
- c. Project number
- d. Contractor's name and address
- e. Date of submittal

2. Arrange the Schedule of Values in a tabular form with separate columns to indicate the following for each item listed:

- a. Generic name
- b. Related Specification Section

SECTION 01 29 00  
APPLICATION FOR PAYMENT

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 29 00-2

- 
- c. Name of subcontractor
  - d. Name of Manufacturer or fabricator
  - e. Name of supplier
  - f. Change Orders (numbers) that have affected value
  - g. Dollar value
  - h. Percentage of Contract Sum to the nearest one-hundredth percent, adjusted to total 100 percent

- 3. For each part of the Work where an Application for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed, provide separate line items on the Schedule of Values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

1.4 APPLICATIONS FOR PAYMENT:

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by the Architect and paid for by the Owner.
- B. Payment Application Times: Each progress payment date is as indicated in the Agreement. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.
- C. Payment Application Forms: Use AIA Document G 702 and Continuation Sheets G 703 as the form for Application for payment.
- D. Application Preparation: Complete every entry on the form, including notarization and execution by person authorized to sign legal documents on behalf of the Owner. Incomplete applications will be returned without action.
- E. Transmittal: Submit 3 executed copies of each Application for Payment to the Architect by means ensuring receipt within 24 hours.
- F. Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment.
- G. Administrative actions and submittals that shall proceed or coincide with this application include:
  - 1. Occupancy permits and similar approvals
  - 2. Warranties (guarantees) and maintenance agreements
  - 3. Test/adjust/balance records
  - 4. Maintenance instructions

SECTION 01 29 00  
APPLICATION FOR PAYMENT

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 29 00-3

- 
5. Meter readings
  6. Start-up performance reports
  7. Change-over information related to Owner's occupancy, use, operation, and maintenance.
  8. Final cleaning
  9. Application for reduction of retainage, and consent of surety
  10. Advice on shifting insurance coverages
  11. List of incomplete Work, recognized as exceptions to Architect's Certificate of Substantial completion.

H. Final Payment Application: Administrative actions and submittals which must precede or coincide with submittal of the final payment Application for Payment include the following:

1. Completion of Project closeout requirements
2. Completion of items specified for completion after Substantial Completion
3. Assurance that unsettled claims will be settled
4. Assurance that Work not complete and accepted will be completed without undue delay
5. Transmittal of required Project construction records to Owner
6. Certified property survey.
7. Proof that taxes, fees, and similar obligations have been paid
8. Release of liens
9. Removal of temporary facilities and services
10. Removal of surplus materials, rubbish, and similar elements
11. Change of door locks to Owner's access

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01 31 13  
PROJECT COORDINATION

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 31 13-1

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and supervisory requirements necessary for Project coordination including, but not necessarily limited to:
1. Coordination
  2. General installation provisions
  3. Cleaning and protection

1.3 COORDINATION

- A. Coordination: Coordinate construction activities included under various Sections of these Specifications to assure efficient and orderly installation of each part of the work. Coordinate construction operations included under different Sections of the Specifications that are dependent upon each other for proper installation, connection, and operation.
1. Where installation of one part of the work is dependent on installation of other components, either before or after its own installation, schedule construction activities in the sequence required to obtain the best results.
  2. Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.
  3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Where necessary, prepare memoranda for distribution to each party involved outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.
1. Prepare similar memoranda for the Owner and separate Contractors where coordination of their work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the work.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 GENERAL INSTALLATION PROVISIONS

- A. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which work is to be performed. Do not proceed until unsatisfactory

SECTION 01 31 13  
PROJECT COORDINATION

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 31 13-2

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conditions have been corrected in an acceptable manner.

- B. Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.
- C. Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items.
- D. Provide attachment and connection devices and methods necessary for securing work. Secure work true to line and level. Allow for expansion and building movement.
- E. Visual Effects: Provide uniform joint widths in exposed work. Arrange joints in exposed work to obtain the best visual effect. Refer questionable choices to the Architect for final decision.
- F. Recheck measurements and dimensions, before starting each installation.
- G. Install each component during weather conditions and Project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.
- H. Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.
- I. Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the Architect for final decision.

**3.2 CLEANING AND PROTECTION**

- A. During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- B. Clean and maintain completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- C. Limiting Exposures: Supervise construction activities to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

END OF SECTION

SECTION 01 31 19  
PROJECT MEETINGS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 31 19-1

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for project meetings including but not limited to:
  - 1. Pre-Construction Conference
  - 2. Progress Meetings – to be held every other week at an agreed-upon time/date.
- B. Construction schedules are specified in another Division-1 Section.

1.3 PRE-CONSTRUCTION CONFERENCE

- A. Schedule a pre-construction conference and organizational meeting at the Project site or other convenient location no later than 15 days after execution of the Agreement and prior to commencement of construction activities. Conduct the meeting to review responsibilities and personnel assignments.
- B. Attendees: The Owner, Architect and their consultants, the Contractor and its superintendent, major subcontractors, manufacturers, suppliers and other concerned parties shall each be represented at the conference by persons familiar with and authorized to conclude matters relating to the work.
- C. Agenda: Discuss items of significance that could affect progress including such topics as:
  - 1. Tentative construction schedule
  - 2. Critical Work sequencing
  - 3. Designation of responsible personnel
  - 4. Procedures for processing field decisions and Change Orders
  - 5. Procedures for processing Applications for Payment
  - 6. Distribution of Contract Documents
  - 7. Submittal of Shop Drawings, Product Data and Samples
  - 8. Preparation of record documents
  - 9. Use of the premises
  - 10. Office, Work, and storage areas
  - 11. Equipment deliveries and priorities
  - 12. Safety procedures
  - 13. First aid

SECTION 01 31 19  
PROJECT MEETINGS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 31 19-2

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- 14. Security
  - 15. Housekeeping
  - 16. Working hours

1.4 PROGRESS MEETINGS

- A. Conduct progress meetings with subcontractors at weekly intervals. Provide the Owner and Architect minutes of the meetings via email. Coordinate dates of meetings with preparation of the payment request.
- B. Attendees: In addition to representatives of the General Contractor, each subcontractor, supplier or other entity concerned with current progress or involved in planning, coordination or performance of future activities shall be represented at these meetings by persons familiar with the Project and authorized to conclude matters relating to progress.
- C. Agenda: Review and correct or approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the current status of the Project.
  - 1. Contractor's Construction Schedule: Review progress since the last meeting. Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
  - 2. Review the present and future needs of each entity present, including such items as:
    - a. Interface requirements
    - b. Time
    - c. Sequences
    - d. Deliveries
    - e. Off-site fabrication problems
    - f. Access
    - g. Site utilization
    - h. Temporary facilities and services
    - i. Hours of Work
    - j. Hazards and risks
    - k. Housekeeping

SECTION 01 31 19  
PROJECT MEETINGS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 31 19-3

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- l. Quality and Work standards
    - m. Change Orders
    - n. Documentation of information for payment requests
    - o. Pre-installation discussions
  - D. Reporting: No later than 3 days after each progress meeting date, distribute copies of minutes of the meeting to each party present and to other parties who should have been present. Also, send the minutes to the Architect, via email, and include a brief summary, in narrative form, of progress since the previous meeting and report.
    - 1. Schedule Updating: Revise the construction schedule after each progress meeting where revision to the schedule have been made or recognized. Issue the revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01 33 00

SUBMITTALS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

01 33 00-1

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for submittals required for performance of the work, including:
1. Contractor's construction schedule
    2. Daily construction reports
    3. Shop Drawings
    4. Product Data
    5. Samples
- B. Administrative Submittals: Refer to other Division-1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:
1. Permits
  2. Applications for payment
  3. Performance and payment bonds
  4. Insurance certificates
  5. List of Subcontractors
- C. The Schedule of Values submittal is included in Section "Applications for Payment."
- D. Shop drawings for pole-framed structure including all structural elements, framing, exterior framing, roofing, siding, trim, doors, windows, accessories, columns, porch framing, etc. Shop drawings to have Georgia Registered Engineer's stamp.

1.3 SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.
  2. Coordinate transmittal of different types of submittals for related elements of the work so

SECTION 01 33 00

SUBMITTALS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

01 33 00-2

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

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processing will not be delayed by the need to review submittals concurrently for coordination.

- a. The Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
3. Processing: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for re-submittals.
  - a. Allow three weeks for initial review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Architect will promptly advise the Contractor when a submittal being processed must be delayed for coordination.
  - b. If an intermediate submittal is necessary, process the same as the initial submittal.
  - c. Allow two weeks for reprocessing each submittal.
  - d. No extension of Contract Time will be authorized because of failure to transmit submittals to the Architect sufficiently in advance of the work to permit processing.
- B. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
  1. Provide a space approximately 4" x 5" on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.
  2. Include the following information on the label for processing and recording action taken.
    - a. Project name
    - b. Date
    - c. Name and address of Architect
    - d. Name and address of Contractor
    - e. Name and address of subcontractor
    - f. Name and address of supplier
    - g. Name of manufacturer
    - h. Number and title of appropriate Specification Section
    - i. Drawing number and detail references, as appropriate
- C. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from Contractor to Architect using a transmittal form. Submittals received from sources other than the Contractor will be returned without action.
  1. On the transmittal Record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including minor variations and

SECTION 01 33 00

SUBMITTALS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

01 33 00-3

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

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limitations. Include Contractor's certification that information complies with Contract Document requirements.

**1.4 CONTRACTOR'S CONSTRUCTION SCHEDULE**

- A. Bar-Chart Schedule: Prepare a fully developed, horizontal bar-chart type Contractor's construction schedule. Submit within 30 days of the date established for "Commencement of the Work".
1. Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the Work as indicated in the "Schedule of Values".
- B. Distribution: Following response to the initial submittal, print and distribute copies to the Architect, Owner, subcontractors, and other parties required to comply with scheduled dates. Post copies in the Project meeting room and temporary field office.
1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the work and are no longer involved in construction activities.
- C. Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

**1.5 SHOP DRAWINGS**

- A. Submit newly prepared information, drawn to accurate scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not considered Shop Drawings.
- B. Shop Drawings include fabrication and installation drawings, setting diagrams, schedules, patterns, templates and similar drawings. Include the following information:
1. Dimensions
  2. Identification of products and materials included
  3. Compliance with specified standards
  4. Notation of coordination requirements
  5. Notation of dimensions established by field measurement.
  6. Sheet Size: Except for templates, patterns and similar full-size Drawings, submit Shop Drawings of sheets at least 8 1/2" x 11" but no larger than 30" x 42".
  7. Initial Submittal: Submit one correctable translucent reproducible print and two blue or black-line print for the Architect's review; the reproducible print will be returned.

SECTION 01 33 00

SUBMITTALS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

01 33 00-4

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

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8. Final Submittal: Submit three blue or black-line prints; submit 5 prints where required for maintenance manuals. 2 prints will be retained; the remainder will be returned.

9. Do not use Shop Drawings without an appropriate final stamp indicating action taken in connection with construction.

C. SPECIFIC SHOP DRAWINGS TO BE SUBMITTED, IN ADDITION TO CUSTOMARY ITEMS, ARE AS FOLLOWS:

1. Engineered Wood Truss Shop drawings with Georgia Registered Engineer's Stamp.
2. Steel Stud Shop drawings with Georgia Registered Engineer's Stamp.
3. Parking and sidewalk layout shop drawing.
4. Roofing, flashing, and coping shop drawings.
5. Millwork and Cabinetry.
6. Interior Finishes.
7. HVAC, Plumbing, and Electrical.

1.6 PRODUCT DATA

A. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams and performance curves. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawings."

1. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:
  - a. Manufacturer's printed recommendations
  - b. Compliance with recognized trade association standards
  - c. Compliance with recognized testing agency standards
  - d. Application of testing agency labels and seals
  - e. Notation of dimensions verified by field measurement
  - f. Notation of coordination requirements
2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.
3. Preliminary Submittal: Submit a preliminary single-copy of Product Data where selection of options is required.
4. Submittals: Submit 3 copies of each required submittal; submit 5 copies where required for

SECTION 01 33 00

SUBMITTALS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

01 33 00-5

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

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with maintenance manuals. The Architect will retain one, and will return the other marked action taken and corrections or modifications required.

- a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
5. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.
- a. Do not proceed with installation until an applicable copy of Product Data applicable is in the installer's possession.
  - b. Do not permit use of unmarked copies of Product Data in connection with construction.

1.7 SAMPLES

- A. Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture and pattern.
1. Mount, display, or package Samples in the manner specified to facilitate review of qualities indicated. Prepare Samples to match the Architect's Sample. Include the following:
    - a. Generic description of the Sample
    - b. Sample source
    - c. Product name or name of manufacturer
    - d. Compliance with recognized standards
    - e. Availability and delivery time
  2. Submit Samples for review of kind, color, pattern, and texture, for a final check of these characteristics with other elements, and for a comparison of these characteristics between the final submittal and the actual component as delivered and installed.
    - a. Where variation in color, pattern, texture or other characteristics are inherent in the material or product represented, submit multiple units (not less than 3) that show approximate limits of the variations.
    - b. Refer to other Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation and similar construction characteristics.
    - c. Refer to other Sections for Samples to be returned to the Contractor for

SECTION 01 33 00

SUBMITTALS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

01 33 00-6

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

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- incorporation in the Work. Such samples must be undamaged at time of use. On the transmittal, indicate special requests regarding disposition of Sample submittals.
3. Preliminary submittals: Where Samples are for selection of color, pattern, texture or similar characteristics from a range of standard choices, submit a full set of choices for the material or product.
    - a. Preliminary submittals will be reviewed and returned with the Architect's mark indicating selection and other action.
  4. Submittals: Except for Samples illustrating assembly details, workmanship, fabrication techniques, connections, operation and similar characteristics, submit 3 sets; one will be returned marked with the action taken.
  5. Maintain sets of Samples, as returned, at the Project site, for quality comparisons throughout the course of construction.
    - a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
    - b. Sample sets may be used to obtain final acceptance of the construction associated with each set.
- B. Distribution of Samples: Prepare and distribute additional sets to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the Work. Show distribution on transmittal forms.

1.8 ARCHITECT'S ACTION

- A. Except for submittals for record, information or similar purposes, where action and return is required or requested, the Architect will review each submittal, mark to indicate action taken, and return promptly.
  1. Compliance with specified characteristics is the Contractor's responsibility.
- B. Action Stamp: The Architect will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows, to indicate the action taken:
  1. Final Unrestricted Release: Where submittals are marked "Approved " or No Exceptions Taken" that part of the work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance. This does NOT preclude the Contractor from following the Construction Documents in any way. This does not comprise the Architect's "approval" of the submittal, other than for a cursory review, and does not allow the contractor to deviate from the documents in any fashion. It is

SECTION 01 33 00

SUBMITTALS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

01 33 00-7

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

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simply a courtesy review of the submittal. The Architect has outlined the project in the Construction Document and any variation is taken at the Contractor's risk.

2. Final-But-Restricted Release: When submittals are marked "Make Corrections Noted" that part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.
3. Returned for Resubmittal: When submittal is marked "Rejected, Resubmit," do not proceed with that part of the work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.
  - a. Do not permit submittals marked "Rejected, Resubmit" to be used at the Project site, or elsewhere where Work is in progress.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01 42 19  
REFERENCE STANDARDS AND DEFINITIONS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 42 19-1

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

- A. General: Basic Contract definitions are included in the General Conditions.
- B. Indicated: The term "indicated" refers to graphic representations, notes, or schedules on the Drawings, other paragraphs or schedules in the Specifications, and similar requirements in the Contract Documents. Where terms such as "shown," "noted," "scheduled," and "specified" are used, it is to help the reader locate the reference; no limitation on location is intended.
- C. Directed: Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean "directed by the Architect", "requested by the Architect," and similar phrases.
- D. Approve: The term "approved," where used in conjunction with the Architect's action on the Contractor's submittals, applications, and requests, is limited to the Architect's duties and responsibilities as stated in General and Supplementary Conditions.
- E. Regulation: The term "Regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. Furnish: The term "furnish" is used to mean "supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation, and similar operations."
- G. Install: The term "install" is used to describe operations at project site including the actual "unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations."
- H. Provide: The term "provide" means "to furnish and install, complete and ready for the intended use."
- I. Installer: An "Installer" is the Contractor or an entity engaged by the Contractor, either as an employee, subcontractor, or sub-subcontractor, for performance of a particular construction activity, including installation, erection, application, and similar operations. Installers are required to be experienced in the operations they are engaged to perform.
1. The term "experienced" when used with the term "Installer" means having a minimum of 5 previous Projects similar in size and scope to this Project, being familiar with the precautions required, and having complied with requirements of the authority having jurisdiction.
  2. Trades: Use of titles such as "carpentry" is not intended to imply that certain construction

SECTION 01 42 19  
REFERENCE STANDARDS AND DEFINITIONS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 42 19-2

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activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.

3. Assignment of Specialists: Certain Sections of the Specifications require that specific construction activities shall be performed by specialists who are recognized experts in the operations to be performed. The specialists must be engaged for those activities, and assignments are requirements over which the Contractor has no choice or opinion. Nevertheless, the ultimate responsibility for fulfilling Contract requirements remains with the Contractor.
  - a. This requirement shall not be interpreted to conflict with enforcement of building codes and similar regulations governing the Work. It is also not intended to interfere with local trade union jurisdictional settlements and similar conventions.
- J. Project Site is the space available to the Contractor for performance of construction activities, either exclusively or in conjunction with others performing other work as part of the Project. The extent of the Project Site is shown on the Drawings and may or may not be identical with the description of the land upon which the Project is to be built.
- K. Testing Laboratories: A "testing laboratory" is an independent entity engaged to perform specific inspections or tests, either at the Project Site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

### 1.3 INDUSTRY STANDARDS

- A. Applicability of Standards: Except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Where the date of issue of a referenced standard is not specified, comply with the standard in effect as of date of Contract Documents.
- C. Conflicting Requirements: Where compliance with two or more standards is specified, and the standards establish different or conflicting requirements for minimum quantities or quality levels, refer requirements that are different, but apparently equal, and uncertainties to the Architect for a decision before proceeding.
  1. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the

SECTION 01 095  
REFERENCE STANDARDS AND DEFINITIONS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
FAYETTE COUNTY ANIMAL SHELTER  
AUGUST 05, 2020

01 095-3

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minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. In complying with these requirements, indicated numeric values are minimum or maximum, as appropriate for the context of the requirements. Refer uncertainties to the Architect for a decision before proceeding.

- D. Copies of Standards: Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to that entity's construction activity. Copies of applicable standards are not bound with the Contract Documents.
1. Where copies of standards are needed for performance of a required construction activity, the Contractor shall obtain copies directly from the publication source.
  2. Although copies of standards needed for enforcement of requirements may be included as part of required submittals, the Architect reserves the right to require the Contractor to submit additional copies as necessary for enforcement of requirements.
- E. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards generating organization, authority having jurisdiction, or other entity applicable to the context of the text provision. Refer to the "Encyclopedia of Associations," published by Gale Research Co., available in most libraries.

**1.4 GOVERNING REGULATIONS/AUTHORITIES**

- A. The Architect has contacted authorities having jurisdiction where necessary to obtain information necessary for preparation of Contract Documents; that information may or may not be of significance to the Contractor. Contact authorities having jurisdiction directly for information and decisions having a bearing on the Work.

**1.5 SUBMITTALS**

- A. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence, and records established in conjunction with compliance with standards and regulations bearing upon performance of the Work.

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

**PART 3 - EXECUTION (Not Applicable)**

**END OF SECTION**

SECTION 01 43 13  
MATERIALS AND EQUIPMENT

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 43 13-1

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements governing the Contractor's selection of products for use in the Project.
- B. The Contractor's Construction Schedule and the Schedule of Submittals are included under Section "Submittals."
- C. Standards: Refer to Section "Definitions and Standards" for applicability of industry standards to products specified.
- D. Administrative procedures for handling requests for substitutions made after award of the Contract are included under Section "Product Substitutions."

1.3 DEFINITIONS

- A. Definitions used in the Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms are self-explanatory and have well recognized meanings in the construction industry.
1. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
    - a. "Named Products" are items identified by manufacturer's product name, including make or model designation, indicated in the manufacturer's published product literature, that is current as of the date of the Contract Documents.
  2. "Materials" are products that are substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.
  3. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping.

1.4 QUALITY ASSURANCE

- A. Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.
1. When specified products are available only from sources that do not or cannot produce a quantity adequate to complete project requirements in a timely manner, consult with the

SECTION 01 43 13  
MATERIALS AND EQUIPMENT

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 43 13-2

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Architect for a determination of the most important product qualities before proceeding. Qualities may include attributes relating to visual appearance, strength, durability, or compatibility. When a determination has been made, select products from sources that produce products that possess these qualities, to the fullest extent possible.

- B. Compatibility of Options: When the Contractor is given the option of selecting between two or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.
- C. Nameplates: Except for required labels and operating data, do not attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products which will be exposed to View in occupied spaces or on the exterior.
  - 1. Labels: Locate required product labels and stamps on a concealed surface or, where required for observation after installation, on an accessible surface that is not conspicuous.
  - 2. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an easily accessible surface which is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data:
    - a. Name of product and manufacturer
    - b. Model and serial number
    - c. Capacity
    - d. Speed
    - e. Ratings

**1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING**

- A. Deliver, store and handle products in accordance with the manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft.
  - 1. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
  - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.
  - 3. Deliver products to the site in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
  - 4. Inspect products upon delivery to ensure compliance with the Contract Documents, and to ensure that products are undamaged and properly protected.
  - 5. Store products at the site in a manner that will facilitate inspection and measurement of

SECTION 01 43 13  
MATERIALS AND EQUIPMENT

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 43 13-3

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- quantity or counting of units.
6. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
  7. Store products subject to damage by the elements above ground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

**PART 2 - PRODUCTS**

**2.1 PRODUCT SELECTION**

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, unused at the time of installation.
  1. Provide products complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.
  2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
- B. Product Selection Procedures: Product selection is governed by the Contract Documents and governing regulations, not by previous Project experience. Procedures governing product selection include the following:
  1. Proprietary Specification Requirements: Where only a single product or manufacturer is named, provide the product indicated. Substitutions will be permitted, if approved equal.
  2. Semi-proprietary Specification Requirements: Where two or more products or manufacturers are named, provide one of the products indicated. Substitutions will be permitted, if approved equal.
  3. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.
  4. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. General overall performance of a product is implied where the product is specified for a specific application.
    - a. Manufacturer's recommendations may be contained in published product literature, or by the manufacturer's certification of performance.
  5. Compliance with Standards, Codes and Regulations: Where the Specifications only require compliance with an imposed code, standard or regulation, select a product that complies with

SECTION 01 43 13  
MATERIALS AND EQUIPMENT

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 43 13-4

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- the standards, codes or regulations specified.
6. Visual Matching: Where Specifications require matching an established Sample, the Architect's decision will be final on whether a proposed product matches satisfactorily.
    - a. Where no product available within the specified category matches satisfactorily and also complies with other specified requirements, comply with provisions of the Contract Documents concerning "substitutions" for selection of a matching product in another product category, or for noncompliance with specified requirements.
  7. Visual Selection: Where specified product requirements include the phrase "...as selected from manufacturer's standard colors, patterns, textures..." or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Architect will select the color, pattern and texture from the product line selected.
  8. Allowances: Refer to individual Specification Sections and "Allowance" provisions in Division-1 for allowances that control product selection, and for procedures required for processing such selections.

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS

- A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other work.
  1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION

SECTION 01 51 00  
TEMPORARY FACILITIES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 51 00-1

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies requirements for temporary services and facilities, including utilities, construction and support facilities, security and protection.
- B. Temporary utilities required include but are not limited to:
  - 1. Water service and distribution
  - 2. Temporary electric power and light
  - 3. Telephone service.
  - 4. Internet Service with email, Computer, and Printer.
- C. Temporary construction and support facilities required include but are not limited to:
  - 1. Temporary heat
  - 2. Field offices and storage sheds
  - 3. Sanitary facilities, including drinking water
  - 4. Temporary enclosures
  - 5. Elevator use
  - 6. Temporary Project identification signs and bulletin boards
  - 7. Waste disposal services
  - 8. Rodent and pest control
  - 9. Construction aids and miscellaneous services and facilities.
- D. Security and protection facilities required include but are not limited to:
  - 1. Temporary fire protection
  - 2. Barricades, warning signs, lights
  - 3. Environmental protection

1.3 SUBMITTALS

- A. Temporary Utilities: Submit reports of tests, inspections, meter readings and similar procedures performed on temporary utilities.

1.4 QUALITY ASSURANCE

- A. Regulations: Comply with industry standards and applicable laws and regulations if authorities having jurisdiction, including but not limited to:

SECTION 01 51 00  
TEMPORARY FACILITIES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 51 00-2

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- 1. Building Code requirements
  - 2. Health and safety regulations
  - 3. Utility company regulations
  - 4. Police, Fire Department and Rescue Squad rules
  - 5. Environmental protection regulations
- B. Standards: Comply with NFPA Code 241, "Building Construction and Demolition Operations", ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition", and NECA Electrical Design Library "Temporary Electrical Facilities."
- 1. Refer to "Guidelines for Bid Conditions for Temporary Job Utilities and Services", prepared jointly by AGC and ASC, for industry recommendations.
  - 2. Electrical Service: Comply with NEMA, NECA and UL standards and regulations for temporary electric service. Install service in compliance with National Electric Code (NFPA 70).
- C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.5 **PROJECT CONDITIONS**

- A. Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary service to use of the permanent service.
- B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload facilities, or permit them to interfere with progress. Do not allow hazardous dangerous or unsanitary conditions, or public nuisances to develop or persist on the site.

**PART 2 - PRODUCTS**

2.1 **MATERIALS**

- A. General: Provide new materials; if acceptable to the Architect, undamaged previously used materials in serviceable condition may be used. Provide materials suitable for the use intended.
- B. Lumber and Plywood: Comply with requirements in Division-6 Section "Rough Carpentry."
  - 1. For job-built temporary offices, shops and sheds within the construction area, provide UL labeled, fire treated lumber and plywood for framing, sheathing and siding.
  - 2. For signs and directory boards, provide exterior type, Grade B-B high Density Concrete Form Overlay Plywood conforming to PS-1, of sizes and thickness indicated.
  - 3. For fences and vision barriers, provide exterior type, minimum 3/8" thick plywood.

SECTION 01 51 00  
TEMPORARY FACILITIES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 51 00-3

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- C. Gypsum Wallboard: Provide gypsum wallboard complying with requirements of ASTM C 36 on interior walls of temporary offices.
  - D. Paint: Comply with requirements of Division-9 Section "Finish Painting."
    - 1. For job-built temporary offices, shops, sheds, fences and other exposed lumber and plywood, provide exterior grade acrylic-latex emulsion over exterior primer.
    - 2. For sign panels and applying graphics, provide exterior grade alkyd gloss enamel over exterior primer.
    - 3. For interior walls of temporary offices, provide two coats interior latex flat wall paint.
  - E. Tarpaulins: Provide waterproof, fire-resistant, UL labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures provide translucent nylon reinforced laminated polyethylene or polyvinyl chloride fire retardant tarpaulins.
  - F. Water: Provide potable water approved by local health authorities.

**2.2 EQUIPMENT**

- A. General: Provide new equipment; if acceptable to the Architect, undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.
- B. Water Hoses: Provide 3/4" heavy-duty, abrasion-resistant, flexible rubber hoses 100 ft. long, with pressure rating greater than the maximum pressure of the water distribution system; provide adjustable shut-off nozzles at hose discharge.
- C. Electrical Outlets: Provide properly configured NEMA polarized outlets to prevent insertion of 110-120 volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button and pilot light, for connection of power tools and equipment.
- D. Electrical Power Cords: Provide grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas where construction activities are in progress.
- E. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered glass enclosures, where exposed to breakage. Provide exterior fixtures where exposed to moisture.
- F. Heating Units: Provide temporary heating units that have been tested and labeled by UL, FM or another recognized trade association related to the type of fuel being consumed.
- G. Temporary Offices: Provide prefabricated or mobile units or similar job-built construction with lockable entrances, operable windows and serviceable finishes. Provide heated and air-conditioned units on foundations adequate for normal loading.
- H. Temporary Toilet Units: Provide self-contained single-occupant toilet units of the chemical, aerated recirculation, or combustion type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar nonabsorbent material.

SECTION 01 51 00  
TEMPORARY FACILITIES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 51 00-4

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- I. First Aid Supplies: Comply with governing regulations.
  - J. Fire Extinguishers: Provide hand-carried, portable UL-rated, class "A" fire extinguishers for temporary offices and similar spaces. In other locations provide hand-carried, portable, UL-rated, class "ABC" dry chemical extinguishers, or a combination of extinguishers of NFPA recommended classes for the exposures.
    - 1. Comply with NFPA 10 and 241 for classification, extinguishing agent and size required by location and class of fire exposure.

PART 3 - EXECUTION

3.1 INSTALLATION

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

3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Connect to existing service.
- B. Water Service: Install water service and distribution piping of sizes and pressures adequate for construction until permanent water service is in use.
  - 1. Sterilization: Sterilize temporary water piping prior to use.
- C. Temporary Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload protected disconnects, automatic ground-fault interrupters and main distribution switch gear.
  - 1. Except where overhead service must be used, install electric power service underground.
  - 2. Power Distribution System: Install wiring overhead, and rise vertically where least exposed to damage. Where permitted, wiring circuits not exceeding 125 Volts, AC 20 ampere rating, and lighting circuits may be nonmetallic sheathed cable where overhead and exposed for surveillance.
- D. Temporary Lighting: Whenever overhead floor or roof deck has been installed, provide temporary lighting with local switching.

SECTION 01 51 00  
TEMPORARY FACILITIES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 51 00-5

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1. Install and operate temporary lighting that will fulfill security and protection requirements, without operating the entire system, and will provide adequate illumination for construction operations and traffic conditions.
- E. Temporary Telephones: Provide temporary telephone service for all personnel engaged in construction activities, throughout the construction period. Install telephone on a separate line for each temporary office and first aid station. Where an office has more than two occupants, install a telephone for each additional occupant or pair of occupants.
1. At each telephone, post a list of important telephone numbers.

**3.3 TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES**

- A. Locate field offices, storage sheds, sanitary facilities and other temporary construction and support facilities for easy access.
1. Maintain temporary construction and support facilities until near Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.
- B. Provide incombustible construction for offices, shops and sheds located within the construction area, or within 30 feet of building lines. Comply with requirements of NFPA 241.
- C. Temporary Heat: Provide temporary heat required by construction activities, for curing or drying of completed installations or protection of installed construction from adverse effects of low temperatures or high humidity. Select safe equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce the ambient condition required and minimize consumption of energy.
- D. Heating Facilities: Except where use of the permanent system is authorized, provide vented self-contained LP gas or fuel oil heaters with individual space thermostatic control.
1. Use of gasoline-burning space heaters, open flame, or salamander type heating units is prohibited.
- E. Field offices: Provide insulated, weather-tight temporary offices of sufficient size to accommodate required office personnel at the Project site. Keep the office clean and orderly for use for small progress meetings. Furnish and equip offices as follows:
- F. Sanitary facilities include temporary toilets, wash facilities and drinking water fixtures. Comply with regulations and health codes for the type, number, location, operation and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs.
1. Provide toilet tissue, paper towels, paper cups and similar disposable materials for each facility. Provide covered waste containers for used material.
- G. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted.

SECTION 01 51 00  
TEMPORARY FACILITIES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 51 00-6

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- H. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up for a healthy and sanitary condition. Dispose of drainage properly. Supply cleaning compounds appropriate for each condition.
1. Provide safety showers, eye-wash fountains and similar facilities for convenience, safety and sanitation of personnel.
- I. Drinking Water Facilities: Provide containerized tap-dispenser bottled-water type drinking water units, including paper supply.
1. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg F (7 to 13 deg C).
- J. Temporary Enclosures: Provide temporary enclosure for protection of construction in progress and completed, from exposure, foul weather, other construction operations and similar activities.
1. Where heat is needed and the permanent building enclosure is not complete, provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
  2. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of 25 sq feet or less with plywood or similar materials.
  3. Close openings through floor or roof decks and horizontal surfaces with load-bearing wood-framed construction.
  4. Where temporary wood or plywood enclosure exceeds 100 sq ft in area, use UL-labeled fire-retardant treated material for framing and main sheathing.
- K. Temporary Elevator Use: Use of Service Elevator for movement of materials and personnel is permitted.
- L. Project Identification and Temporary Signs: Prepare project identification and other signs of the size indicated; install signs where indicated to inform the public and persons seeking entrance to the Project. Support on posts or framing of preservative treated wood or steel. Do not permit installation of unauthorized signs.
1. Project Identification Signs: Engage an experienced sign painter to apply graphics. Comply with details indicated.
  2. Temporary Signs: Prepare signs to provide directional information to construction personnel and visitors.
- M. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F (27 deg C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material in a lawful manner.

SECTION 01 51 00  
TEMPORARY FACILITIES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 51 00-7

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- N. Rodent and Pest Control: Retain a local exterminator or pest control company to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests. Employ this service to perform extermination and control procedures at regular intervals so the Project will be relatively free of pests and their residues at Substantial Completion. Perform control operations in a lawful manner using environmentally safe materials.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Except for use of permanent fire protection as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until Substantial Completion, or longer as requested by the Architect.
- B. Temporary Fire Protection: Until fire protection needs are supplied by permanent facilities, install and maintain temporary fire protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers," and NFPA 241 "Standard for Safeguarding Construction, Alterations and Demolition Operations."
1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
  2. Store combustible materials in containers in fire-safe locations.
  3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways and other access routes for fighting fires. Prohibit smoking in hazardous fire exposure areas.
  4. Provide supervision of welding operations, combustion type temporary heating units, and similar sources of fire ignition.
- C. Permanent Fire Protection: At the earliest feasible date in each area of the Project, complete installation of the permanent fire protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.
- D. Barricades, Warning Signs and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed provide lighting, including flashing red or amber lights.
- E. Security Enclosure and Lockup: Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.
- F. Environmental Protection: Provide protection, operate temporary facilities and conduct construction

SECTION 01 51 00  
TEMPORARY FACILITIES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 51 00-8

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in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways and subsoil might be contaminated or polluted, or that other undesirable effects might result. Avoid use of tools and equipment which produce harmful noise. Restrict use of noise making tools and equipment to hours that will minimize complaints from persons or firms near the site.

**3.5 OPERATION, TERMINATION AND REMOVAL**

- A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.
  - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation and similar facilities on a 24-hour day basis where required to achieve indicated results and to avoid possibility of damage.
  - 2. Protection: Prevent water filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.
- C. Termination and Removal: Unless the Architect requests that it be maintained longer, remove each temporary facility when the need has ended, or when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces and replace construction that cannot be satisfactorily repaired.
  - 1. Materials and facilities that constitute temporary facilities are property of the Contractor. The Owner reserves the right to take possession of Project identification signs.
  - 2. At Substantial Completion, clean and renovate permanent facilities that have been used during the construction period, including but not limited to:
    - a. Replace air filters and clean inside of ductwork and housings.
    - b. Replace significantly worn parts and parts that have been subject to unusual operating conditions.
    - c. Replace lamps that are burned out or noticeably dimmed by substantial hours of use.

END OF SECTION

SECTION 01 70 00  
PROJECT CLOSEOUT

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 70 00-1

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for project closeout, including but not limited to:
1. Inspection procedures
  2. Project record document submittal
  3. Operating and maintenance manual submittal
  4. Submittal of warranties
  5. Final clearing
- B. Closeout requirements for specific construction activities are included in the appropriate Sections in Division-2 through -16.

1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.
1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the work claimed as substantially complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
    - a. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the work is not complete.
  2. Advise Owner of pending insurance change-over requirements.
  3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
  4. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
  5. Submit record drawings, maintenance manuals, and similar final record information.
  6. Deliver tools, spare parts, extra stock, and similar items.
  7. Make final change-over of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of change-over in security provisions.

SECTION 01 70 00  
PROJECT CLOSEOUT

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 70 00-2

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8. Complete start-up testing of systems, and instruction of the Owner's operating and maintenance personnel. Discontinue or change over and remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.
  9. Complete final clean up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.
- B. Inspect Procedures: On receipt of a request for inspection the Architect will either proceed with inspection or advise the Contractor of unfilled requirements. The Architect will prepare the Certificate of Substantial Completion following inspection, or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.
1. The Architect will repeat inspection when requested and assured that the work has been substantially completed.
  2. Results of the completed inspection will form the basis of requirements for final acceptance.
  3. The initial inspection shall be scheduled at least 20 days prior to date of substantial completion.
  4. If necessary, the initial inspection will be repeated. Architects and Engineers cost for re-inspection will be paid by the Contractor and deducted from the contract sum by change order.

1.4 FINAL ACCEPTANCE

- A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.
1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
  2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
  3. Submit a certified copy of the Architect's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the Architect.
  4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion, or when the Owner took possession of and responsibility for corresponding elements of the work.
  5. Submit consent of surety to final payment.
  6. Submit a final liquidated damages settlement statement.
  7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. Re-inspection Procedure: The Architect will re-inspect the work upon receipt of notice that the work,

SECTION 01 70 00  
PROJECT CLOSEOUT

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 70 00-3

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including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Architect.

1. Upon completion of re-inspection, the Architect will prepare a certificate of final acceptance, or advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
2. If necessary, re-inspection will be repeated, and the Architect's and Engineer's costs for re-inspection will be paid by the Contractor and deducted from the contract sum by change order.

**1.5 RECORD DOCUMENT SUBMITTALS**

- A. General: Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Architect's reference during normal working hours.
- B. Record Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the work as originally shown. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
  1. Mark record sets with red erasable pencil; use other colors to distinguish between variations in separate categories of the work.
  2. Mark new information that is important to the Owner, but was not shown on Contract Drawings or Shop Drawings.
  3. Note related Change Order numbers where applicable.
  4. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set.
- C. Record Specifications: Maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction. Mark these documents to show substantial variations in actual work performed in comparison with the text of the Specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related record drawing information and Product Data.
  1. Upon completion of the work, submit record Specifications to the Architect for the Owner's records.

SECTION 01 70 00  
PROJECT CLOSEOUT

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 70 00-4

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- D. Record Product Data: Maintain one copy of each Product Data submittal. Mark these documents to show significant variations in actual work performed in comparison with information submitted. Include variations in products delivered to the site, and from the manufacturer's installation instructions and recommendations. Give particular attention to concealed products and portions of the work which cannot otherwise be readily discerned later by direct observation. Note related Change Orders and mark-up of record drawings and Specifications.
1. Upon completion of mark-up, submit complete set of record Product Data to the Architect for the Owner's records.
- E. Record Sample Submitted: Immediately prior to the date or dates of Substantial Completion, the Contractor will meet at the site with the Architect and the Owner's personnel to determine which of the submitted Samples that have been maintained during progress of the Work are to be transmitted to the Owner for record purposes. Comply with delivery to the Owner's Sample storage area.
- F. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the Architect for the Owner's records.
- G. Maintenance Manuals: Organize operating and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual heavy-duty 2-inch, 3-ring vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Include the following types of information.
1. Emergency instructions
  2. Spare parts lists
  3. Copies of warranties
  4. Wiring diagrams
  5. Recommended "turn around" cycles
  6. Inspection procedures
  7. Shop Drawings and Product Data
  8. Fixture lamping schedule

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 CLOSEOUT PROCEDURES

- A. Operating and Maintenance Instructions: Arrange for each installer of equipment that requires regular

SECTION 01 70 00  
PROJECT CLOSEOUT

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 70 00-5

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maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. If installers are not experienced in procedures, provide instruction by manufacturer's representatives. Include a detailed review of the following items:

1. Maintenance manuals
  2. Record documents
  3. Spare parts and materials
  4. Tools
  5. Lubricants
  6. Fuels
  7. Identification systems
  8. Control sequences
  9. Hazards
  10. Cleaning
  11. Warranties and bonds
  12. Maintenance agreements and similar continuing commitments
- B. As part of instruction for operating equipment, demonstrate the following procedures:
1. Start-up
  2. Shutdown
  3. Emergency operations
  4. Noise and vibration adjustments
  5. Safety procedures
  6. Economy and efficiency adjustments
  7. Effective energy utilization

### 3.2 FINAL CLEANING

- A. General: General cleaning during construction is required by the General Conditions and included in Section "Temporary Facilities".
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.
- a. Remove labels that are not permanent labels
  - b. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compound and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.

SECTION 01 70 00  
PROJECT CLOSEOUT

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 70 00-6

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- c. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films and similar substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.
  - d. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.
  - e. Clean the site, including landscape development areas, of rubbish, litter and other foreign substances. Sweep paved areas broom clean; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.
- C. Pest Control: Engage an experienced exterminator to make a final inspection, and rid the Project of rodents, insects and other pests.
  - D. Removal of Protection: Remove temporary protection and facilities installed for protection of the work during construction.
  - E. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.
    - 1. Where extra materials of value remaining after completion of associated work have become the Owner's property, arrange for disposition of these materials as directed.

END OF SECTION

SECTION 01 78 33  
WARRANTIES AND BONDS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 78 33-1

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies general administrative and procedural requirements for warranties and bonds required by the Contract Documents, including manufacturers standard warranties on products and special warranties.
1. Refer to the General Conditions for terms of the Contractor's special warranty of workmanship and materials.
  2. General closeout requirements are included in Section "Project Closeout."
  3. Specific requirements for warranties for the Work and products and installations that are specified to be warranted, are included in the individual Sections of Divisions-2 through -16.
  4. Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.
- B. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

1.3 DEFINITIONS

- A. Standard Product Warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.
- B. Special Warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.

1.4 WARRANTY REQUIREMENTS

- A. Related Damages and Losses: When correcting warranted work that has failed, remove and replace other work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted work.
- B. Reinstatement of Warranty: When work covered by a warranty has failed and has been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

SECTION 01 78 33  
WARRANTIES AND BONDS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 78 33-2

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- C. Replacement Cost: Upon determination that work covered by a warranty has failed, replace or rebuild the work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective work regardless of whether the Owner has benefited from use of the work through a portion of its anticipated useful service life.
- D. Owner's Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.
1. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.
- E. The Owner reserves the right to refuse to accept work for the Project where a special warranty, certification, or similar commitment is required on such work or part of the work, until evidence is presented that entities required to countersign such commitments are willing to do so.

1.5 SUBMITTALS

- A. Submit written warranties to the Architect prior to the date certified for Substantial Completion. If the Architect's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the work, submit written warranties upon request of the Architect.
1. When a designated portion of the work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Architect within fifteen days of completion of that designated portion of the work.
- B. When a special warranty is required to be executed by the Contractor, or the Contractor and a subcontractor, supplier or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner through the Architect for approval prior to final execution.
1. Refer to individual Sections of Divisions-2 through -16 for specific content requirements, and particular requirements for submittal of special warranties.
- C. Form of Submittal: At Final Completion compile two copies of each required warranty and bond properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.

SECTION 01 78 33  
WARRANTIES AND BONDS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 78 33-3

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- D. Bind warranties and bonds in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2" by 11" paper.
1. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address, and telephone number of the installer.
  2. Identify each binder on the front and the spine with the typed or printed title "WARRANTIES AND BONDS", the Project title or name, and the name of the Contractor.
  3. When operating and maintenance manuals are required for warranted construction, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01 78 39  
PROJECT RECORD DOCUMENTS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

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01 78 39-1

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
1. Record Drawings.
  2. Record Specifications.
  3. Record Product Data.
- B. Related Sections include the following:
1. Division 1 Section "Summary of Multiple Contracts" for coordinating Project Record Documents covering the Work of multiple contracts.
  2. Division 1 Section "Closeout Procedures" for general closeout procedures].
  3. Division 1 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
  4. Divisions 2 through 16 Sections for specific requirements for Project Record Documents of products in those Sections.

1.3 SUBMITTALS

- A. Record Drawings: Comply with the following:
1. Number of Copies: Submit **one** set of marked-up Record Prints and one electronic copy.
  2. Number of Copies: Submit copies of Record Drawings as follows:
    - a. Initial Submittal: Submit **one** set of **corrected Record electronic files** and **one** set of marked-up Record Prints. Architect will initial and date each **marked-up set** and mark whether general scope of changes, additional information recorded, and quality of drafting are acceptable. Architect will return **transparencies** and prints for organizing into sets, printing, binding, and final submittal.
    - b. Final Submittal: Submit **one** set of marked-up Record Prints, **one** set of record transparencies, and **three** copies printed from Record Transparencies. Print

SECTION 01 78 39  
PROJECT RECORD DOCUMENTS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 78 39-2

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each Drawing, whether or not changes and additional information were recorded.

- c. Final Submittal: Submit **one** set of marked-up Record Prints, **one** set of Record CAD Drawing files, **one** set of Record CAD Drawing plots, and **three** copies printed from record plots. Plot and print each Drawing, whether or not changes and additional information were recorded.

- 1) Electronic Media: **CD-ROM**.

- B. Record Specifications: Submit **one copy** of Project's Specifications, including addenda and contract modifications.

- C. Record Product Data: Submit **one copy** of each Product Data submittal.

- 1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in the manual instead of submittal as Record Product Data.

## PART 2 - PRODUCTS

### 2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.

- 1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.

- a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    - b. Accurately record information in an understandable drawing technique.
    - c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.

- 2. Content: Types of items requiring marking include, but are not limited to, the following:

- a. Dimensional changes to Drawings.
      - b. Revisions to details shown on Drawings.
      - c. Depths of foundations below first floor.
      - d. Locations and depths of underground utilities.

SECTION 01 78 39  
PROJECT RECORD DOCUMENTS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 78 39-3

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- e. Revisions to routing of piping and conduits.
  - f. Revisions to electrical circuitry.
  - g. Actual equipment locations.
  - h. Duct size and routing.
  - i. Locations of concealed internal utilities.
  - j. Changes made by Change Order or Construction Change Directive.
  - k. Changes made following Architect's written orders.
  - l. Details not on the original Contract Drawings.
  - m. Field records for variable and concealed conditions.
  - n. Record information on the Work that is shown only schematically.
3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
  4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
  5. Mark important additional information that was either shown schematically or omitted from original Drawings.
  6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Record Transparencies: Immediately before inspection for Certificate of Substantial Completion, review marked-up Record Prints with Architect. When authorized, prepare a full set of corrected transparencies of the Contract Drawings and Shop Drawings.
1. Incorporate changes and additional information previously marked on Record Prints. Erase, redraw, and add details and notations where applicable.
  2. Refer instances of uncertainty to Architect for resolution.
  3. Owner will furnish Contractor one set of transparencies of the Contract Drawings for use in recording information.
  4. Print the Contract Drawings and Shop Drawings for use as Record Transparencies. Architect will make the Contract Drawings available to Contractor's print shop.
- C. Record CAD Drawings: Immediately before inspection for Certificate of Substantial Completion, review marked-up Record Prints with Architect. When authorized, prepare a full set of corrected CAD Drawings of the Contract Drawings, as follows:
1. Format: Same CAD program, version, and operating system as the original Contract Drawings.
  2. Format: **DWG**], operating in **Windows NT** operating system.
  3. Incorporate changes and additional information previously marked on Record Prints. Delete, redraw, and add details and notations where applicable.
  4. Refer instances of uncertainty to Architect for resolution.

SECTION 01 78 39  
PROJECT RECORD DOCUMENTS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 78 39-4

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5. Architect will furnish Contractor one set of CAD Drawings of the Contract Drawings for use in recording information.
    - a. Architect makes no representations as to the accuracy or completeness of CAD Drawings as they relate to the Contract Drawings.
    - b. CAD Software Program: The Contract Drawings are available in AUTOCAD 2000.
  
  - D. Newly Prepared Record Drawings: Prepare new Drawings instead of preparing Record Drawings where Architect determines that neither the original Contract Drawings nor Shop Drawings are suitable to show actual installation.
    1. New Drawings may be required when a Change Order is issued as a result of accepting an alternate, substitution, or other modification.
    2. Consult with Architect for proper scale and scope of detailing and notations required to record the actual physical installation and its relation to other construction. Integrate newly prepared Record Drawings into Record Drawing sets; comply with procedures for formatting, organizing, copying, binding, and submitting.
  
  - E. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
    1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
    2. Record Transparencies: Organize into unbound sets matching Record Prints. Place transparencies in durable tube-type drawing containers with end caps. Mark end cap of each container with identification. If container does not include a complete set, identify Drawings included.
    3. Record CAD Drawings: Organize CAD information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each CAD file.
    4. Identification: As follows:
      - a. Project name.
      - b. Date.
      - c. Designation "PROJECT RECORD DRAWINGS."
      - d. Name of Architect .
      - e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

SECTION 01 78 39  
PROJECT RECORD DOCUMENTS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

01 78 39-5

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1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
  3. Record the name of the manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
  4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
  5. Note related Change Orders, Record Drawings, **[and] [Product Data]** where applicable.

2.3 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
  1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
  3. Note related Change Orders, Record Drawings, **and Product Data** where applicable.

2.4 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.
- B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

**END OF SECTION 01781**

SECTION 03 30 00

CONCRETE WORK

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

03 30 00-1

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

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PART 1 - GENERAL

1.01 SCOPE

- A. This section shall include all labor, materials, accessories, equipment, and related services for the construction of concrete forms; detailing, fabrication, transportation, storage, handling, and placement of reinforcing; and mix design, testing, and placement of concrete as shown on the drawings and/or specified herein.

1.02 REFERENCE STANDARDS

- A. The following publications, but referred to in this section by their basic designation, form a part of this section to the extent specified herein or called for on the drawings:
1. American Concrete Institute (ACI), publications:
    - a. Standard Tolerances for Concrete Construction and Materials.
    - b. Specification for Structural Concrete for Buildings.
    - c. Recommended Practice for Measuring, Mixing, and Placing Concrete.
    - d. Hot weather Concreting.
    - e. Cold Weather Concreting.
    - f. Standard Practice for Consolidation of Concrete.
    - g. Building Code Requirements for Reinforced Concrete.
    - h. Recommended Practice for Concrete Formwork.
    - i. Recommended Practice for Shotcreting.
    - j. Detailing Manual
  2. Concrete Reinforcing Steel Institute (CRSI), publications:
    - a. CRSI-Manual of Standard Practice
    - b. CRSI-Placing Reinforcing Bars
  3. American Society for Testing and Materials (ASTM) publications:
    - a. Standard Specification for Welded Steel Wire Fabric for Concrete Reinforcement.
    - b. Standard Specification for Deformed and Plain Billet - Steel Bars for Concrete Reinforcement with Supplementary Requirements S1.
    - c. Standard Specification for Rail Steel Deformed and Plain Bars for Concrete Reinforcement.
    - d. Standard Specification for Axle Steel Deformed and Plain Bars

SECTION 03 30 00

CONCRETE WORK

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

03 30 00-2

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

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- for Concrete Reinforcement.
- e. Standard Method of Making and Curing Concrete Test Specimens in the Field.
- f. Standard Specification for Concrete Aggregates.
- g. Standard Method of Test for Compressive Strength of Cylindrical Concrete Specimens.
- h. Standard Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
- i. Standard Specification for Ready-Mixed Concrete.
- j. Standard Specification for Aggregate for Masonry Mortar.
- k. Standard Specification for Portland Cement.
- l. Standard Method of Sampling Fresh Concrete.
- m. Standard Method of Making and Curing Concrete Test Specimens in the Laboratory.
- n. Standard Specification for Air-Entraining Admixtures for Concrete.
- o. Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
- p. Standard Specification for Chemical Admixtures for Concrete.
- q. Standard Specifications for Performed Expansion Joint Fillers for Concrete Paving and Structural Construction (Nonextruding and Resistant Bituminous Types)
- 3. American Welding Society (AWS) publication
  - a. AWS D1.4-79 Structural Welding Code-Reinforcing Steel.
- 4. Standard Building Code
- 5. American Institute of Steel Construction (AISC) publications:
  - a. Manual of Steel Construction
- 6. American Institute of Timber Construction (AITC) publications:
  - a. Timber Construction Manual

1.03 SUBMITTALS

- A. The Contractor shall submit to the Architect five (5) copies of the following information for review:
  - 1. Curing compound manufacturer's data sheets.
- B. Two copies will be returned to the Contractor marked as follows:

SECTION 03 30 00

CONCRETE WORK

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

03 30 00-3

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

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1. "No Exceptions Taken" - Indicates the information has been reviewed for conformance with contract documents and no exceptions have been taken. Proceed with the work.
  2. "Exceptions Noted" - Indicates that the drawings have been reviewed for conformance with the contract documents and that exceptions have been taken. Contractor may proceed with the work provided he corrects work as noted. Resubmittal will not be required.
  3. "Exceptions Noted - Resubmit" - Indicates that the drawings have been reviewed for conformance with the contract documents and that work may proceed on items to which no exceptions have been taken. After items to which exceptions have been taken are corrected, Contractor shall again submit copies for review.
  4. "Resubmit" - Indicates that the drawings have been reviewed for conformance with the contract documents and are too incomplete or in an unacceptable condition for review. A notation will be made on the shop drawings as to the exceptions taken. Drawings shall be revised and resubmitted for review before proceeding with the work.

1.04 DESIGN OF FORMWORK

A. Responsibility

1. The design and engineering of the formwork as well as its construction shall be the responsibility of the Contractor.
2. Where concrete is cast against earth cut or an existing structure, such cut or structure shall be considered a form for which the Contractor shall be responsible.

B. Criteria

1. Except as specifically called for otherwise herein, all formwork shall meet the requirements of ACI 347, Chapter 4 and 6 of ACI 301 and Chapter 6 of ACI 318.
2. Specifically the formwork shall be designed as a minimum for the loads and lateral pressure outlined in paragraph 1.2 of ACI 347 and wind loads specified by the Standard Building Code. Design considerations and allowable stresses shall meet the above references and the applicable requirements of the AISC Manual of Steel Construction and the AITC Timber Construction Manual.

1.05 MIX DESIGN

- A. Prior to concrete placement of any concrete, the concrete mix design the Contractor proposes to use for each type of concrete shall be submitted to the Architect for review.
- B. The Concrete mix shall be proportioned to give a 28-day strength of the properties outlined in the

SECTION 03 30 00

CONCRETE WORK

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

03 30 00-4

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

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drawings (e.g. 3,000/5000 psi) and other properties as specified herein as determined by laboratory tests in accordance with requirements specified herein.

- C. The laboratory or laboratories which design and test the concrete mix shall be obtained by the Contractor, approved by the Architect and paid for by the Contractor.

**1.06 TESTING OF CONCRETE**

- A. A laboratory shall be obtained by the Contractor approved by the Architect and paid for by the Contractor for the purpose of sampling and testing of concrete.
- B. The following samples shall be taken at the job site. If any material has been added to the concrete, tests shall be made after material has been added to the concrete.
1. For each 100 cubic yards, or fraction thereof, of concrete three test specimens shall be made and cured in accordance with ASTM C172 and C31. Each set of three cylinders shall have a numerical designation and each cylinder an alphabetical subdesignation. Thus, the first set of three cylinders shall be numbered 1A, 1B, and 1C. One cylinder shall be broken at 7 days and two at 28 days. The average of the two 28-day cylinder breaks shall be considered one test. Cylinders shall be broken in accordance with ASTM C39.
  2. For each 100 cubic yards, or fraction thereof, of concrete a slump test shall be made in accordance with ASTM C143 and the density and air content shall be determined in accordance with ASTM C172 and C31.

**1.07 SHOP DRAWINGS**

- A. The Contractor shall furnish drawings, schedules, and details for the fabrication of the reinforcing steel AND the phasing of excavation and new concrete placement. The drawings and details shall be so complete that when used with the contract drawings the reinforcing steel can be properly placed. In addition, shop drawings showing all footing details, CMU details and slab details. All shop related shop drawings to be submitted with a professional engineer's stamp in this discipline.
- B. In case the Contractor is in doubt regarding certain dimensions shown on the contract drawings, or if there is a discrepancy on the contract plans, the Contractor or his agent shall circle and question such dimensions on his shop drawings. In such cases the dimensions shall be especially checked or supplied by the Architect.
- C. All drawings for review must be submitted in five copies. Two sets shall be returned to the Contractor marked as follows:
1. "No Exceptions Taken" - Indicates the material has been reviewed for conformance with

SECTION 03 30 00

CONCRETE WORK

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

03 30 00-5

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

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- contract documents and no exceptions have been taken. Proceed with the work.
2. "Exceptions Noted" - Indicates that the material has been reviewed for conformance with the contract documents and that exceptions have been taken. Contractor may proceed with the work provided he corrects the work as noted. Resubmittal will not be required.
  3. "Exceptions Noted - Resubmit" - Indicates that the material has been reviewed for conformance with the contract documents and that work may proceed on items to which no exceptions have been taken. After items to which exceptions have been taken are corrected, Contractor shall again submit copies for review.
  4. "Resubmit" - Indicates that the material has been reviewed for conformance with the contract documents and is too incomplete or in an unacceptable condition for review. A notation will be made as to the exceptions taken. Material shall be revised and resubmitted for review before proceeding with the work.
- E. In case exceptions are noted on one sheet which affect details on other sheets, the exception is to be taken as applying to such other details.
- F. Review of shop drawings by the Architect or Engineer shall not constitute an authorization or approval of a change to the contract. Changes from the contract documents must be made by written change order and issued by the Architect.
- G. Work must not proceed on items to which exceptions have been taken.
- H. The Contractor must check and be responsible for the conforming of all steel reinforcing details shown on shop drawings to those shown on the Contract drawings.
- I. All bars shall be shown on shop drawings as to number, size, length, and spacing in a manner similar or complementary to the way they are shown on contract drawings.

1.08 **QUALITY CONTROL**

- A. Should misalignment of forms or screeds or deflection of forms or displacement of reinforcement occur during concrete placing, corrective measures shall be immediately made to the extent that placing operations shall be stopped and concrete removed from within forms. The corrective measures shall be such as to ensure acceptable lines and surfaces to the prescribed dimensions and cross sections.
- B. Any work not meeting the requirements of this section shall be deemed in non-compliance and shall be removed or corrected at no additional expense to the Owner.
- C. The Contractor shall prepare for the Architect's review his proposed method of removal or correcting any work which is in non-compliance prior to commencing with the work.
- D. Any work which is in non-compliance and is allowed to remain in place by the Architect shall be made a part of this contract by issuing a change order as set forth in the General Conditions of this

SECTION 03 30 00

CONCRETE WORK

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

03 30 00-6

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

---

specification.

- E. Should displacement of reinforcing steel occur during concrete placement, corrective measures shall be immediately made to the extent that placing operations shall be stopped and concrete removed from within the forms.
- F. To comply with this specification, concrete shall obtain its design strength at the 28-day break. Any concrete not obtaining its design strength as determined by the 28-day break shall be considered as not complying to this specification.
- G. The results of the concrete tests shall be evaluated in accordance with paragraphs 17.2 of ACI Standard 301.
- H. If compressive tests fail to meet the specified strength, the following procedures shall be followed: The Architect shall determine if the concrete has been placed in a position of critical structural importance. If the concrete has been placed in a position of critical structural importance, the Contractor shall have core tests made by a testing laboratory approved by the Architect. Core tests shall be done in accordance with ASTM C42 and paragraph 17.3.2 of ACI Standard 301. These core tests shall be taken in each area in question. Such tests shall be paid for by the Contractor. If core tests fail to verify the design strength requirements, the Contractor will have two options:
  - 1. Remove and reconstruct that portion of the structure found to be defective. Removal and replacement will not be undertaken until a plan and procedure has been proposed by the Contractor and approved by the Architect. All such work shall be done at the Contractor's expense.
  - 2. Have a testing laboratory approved by the Architect conduct a load test on the questionable portion of the structure in accordance with Chapter 20 of ACI Building Code 318. If the test demonstrates that the member or members are not acceptable under the provisions of Chapter 20, Option One becomes mandatory. All costs of the load test shall be paid for by the Contractor.
- I. If tests, either by the 28-day break or core tests, have demonstrated that concrete supplied has not met the strength requirements of the specifications, but the concrete has been permitted to remain in place in the structure by the Architect, a change order shall be issued as set forth in the General Conditions Section of these specifications.

PART 2 - PRODUCT

2.01 FORMS

- A. Forms for unexposed work or surfaces covered by a non-contact finish.

SECTION 03 30 00

CONCRETE WORK

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

03 30 00-7

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

---

1. Where work is to be covered by a non-contact finish or not exposed to view, forms of metal, metal and wood, wood, or a pre-engineer forming system will be accepted.
- B. Forms for exposed work or surfaces covered by a contact finish.
  1. Where work is to be left exposed, or concrete surface is covered by a contact finish, forms shall either be plywood, lined plank, or patented type panels. All plywood shall receive non-staining protective coating that affords positive release.
  2. Forms shall not be reused when the surface material delaminates, splits, or becomes marred.

2.02 APPURTENANCES

- A. Form Ties
  1. Except for exposed work or Architecturally exposed concrete, snap ties may be used for wall forms. Pull ties, which are to be completely removed, or cone type break back ties that will leave clean cut holes without fractures, spalls, shallows, depressions, or other disfigurations shall be used for all exposed work, and Architecturally exposed concrete.
- B. Expansion Joint Material
  1. Expansion joint material shall meet ASTM C1751.

2.03 REINFORCING

- A. Reinforcing steel shall meet ASTM A-615, ASTM 616, or ASTM 617, and develop 60,000 psi at yield.
- B. Wire mesh shall meet ASTM A-185.

2.04 ACCESSORIES

- A. Bar supports shall meet the requirements of CRSI, Manual of Standard Practice, unless specified otherwise herein.
- B. Legs of all accessories used over exposed concrete surfaces shall have that portion of the accessories in contact with the form coated with plastic, or the accessory shall be of stainless steel.

2.05 CEMENT

- A. All cement used on this construction for exposed concrete shall be one brand of Portland cement. All cement shall be Type 1 and meet the requirements of ASTM 150.

2.06 AGGREGATES

- A. Samples of both coarse and fine aggregates shall be selected by the Contractor at the beginning of the

SECTION 03 30 00

CONCRETE WORK

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

03 30 00-8

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

---

work, and following approval of laboratory tests, shall be used throughout the work as standards to which the aggregate must conform.

1. Fine aggregates shall conform to ASTM C33.
2. Coarse aggregates for regular weight concrete shall conform to ASTM C33 and shall be sized within the limits as established by Table 2, 1" to #4.

2.07 WATER

- A. Water shall be clean, free from oil, acid, vegetable matter, alkalis or salts.

2.08 ADMIXES

- A. Admixes shall conform to ASTM C-494 and not contain any chloride ions.

2.09 AIR ENTRAINMENT

- A. Air entraining agent shall conform to ASTM C260.

2.10 ABRASIVE AGGREGATES

- A. Abrasive aggregates shall be aluminum oxide or carborundum and have a hardness factor of 9 mohs.

2.11 CURING COMPOUND

- A. Curing compound for unformed surfaces without a surface applied cementitious bonding agent or fill.

1. Curing compound shall be formulated by the manufacturer not to interfere with the bond of or adhesion of resilient floor coverings, paints, sprayed on or applied finishes, water-proofing materials, other types of finish, or curing compounds.
2. Curing compound shall be a combination sealer-hardener and dust-proofer.
3. Curing compound shall be a membrane forming resin containing 18% minimum solids with a fugitive dye meeting the requirements of ASTM C309, Type 1-D, Class A.
4. The following products are approved:

Spartan Cote	-	The Burke Company
Rez. Seal	-	Euclid
SealCo	-	Gifford Hill
Clearbond	-	Guardian
Dress & Seal #18	-	L&M Construction Chemicals
Clear Seal 150	-	AC Horne

SECTION 03 30 00

CONCRETE WORK

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

03 30 00-9

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

---

MB429	-	Master Builders
Kure-N-Seal, 0800	-	Sonneborn
C5309	-	WR Meadows

- B. Curing compounds for formed concrete surfaces exposed to view.
1. Curing compound shall be formulated not to interfere with the bond or adhesion of any applied coating or covering.
  2. Curing compound shall be a penetrating compound with a fugitive dye meeting the requirements of ASTM C309, Type 1D.
  3. The following products are approved.

Cure Concentrate	-	The Burke Co
Eucosil	-	Euclid
L&M Cure	-	L&M Construction Chemicals
Horne One Kote	-	AC Horne
Master Seal	-	Master Builders

2.12 PROPORTIONS

- A. All concrete shall provide the ultimate compressive strength at 28 days, as determined by laboratory cured cylinders, as shown on the drawings. All mix designs shall be proportioned in accordance with one of the following methods.
1. ACI 318, Section 4.3, Proportioning on the basis of field experience and/or trial mixtures.
  2. ACI 318, Section 4.4, Proportioning by water cement ratio.
- B. The mix shall be so proportioned so that the average of any three consecutive strength tests shall be equal to or greater than the strength specified on plans, and no test shall have a value less than the specified strength less 3000 psi.
- C. Minimum cement content for regular concrete shall be as follows:
1. REGULAR WEIGHT CONCRETE:  
  
3,000 psi concrete 498# (5.3 bags)  
5,000 psi concrete 705# (7.5 bags)  
For pump mixes add 47# (0.5 bags) to the above quantities.
- D. The water-cement ration of the mix shall be established in the design and shall be based on the established relationship between the water-cement ration and the strength of concrete shall be such as to produce the specified strength of the concrete with the least amount of water consistent with the

SECTION 03 30 00

CONCRETE WORK

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

03 30 00-10

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

---

workability of the mix. Surface water contained in the aggregate shall be included as part of the mixing water in computing the water content. The design shall provide for a slump range of 3" minimum, 5" maximum.

E. To each sack of cement the following amount of admix shall be provided:

1. Air temperature above 80 degrees F

- 3 oz. - Master Builders - Pozzolith 300R
- 3 oz. - Protex PDA 25XL
- 2 oz. - Sika Chemical Co. - Plastement
- 2 oz. - Gifford Hill PSI - Normal
- 2 oz. - Castle Chemical Corp. - Chemstrong R
- 2 oz. - Construction Chemical Co - Trisene N
- 5 oz. - Grace - WRDA-79

2. Air Temperature between 50 and 80 degrees F.

- 3 oz. - Master Builders Pozzolith 300N
- 3 oz. - Protex PBA 25R
- 3 oz. - Sika Chemical Co. - Plastement NS
- 3 oz. - Gifford Hill PSI - Retarder
- 3 oz. - Castle Chemical Corporation - Chemstrong A
- 3 oz. - Construction Chemical Co - Trisene R
- 7.5 oz. - Grace - WRDA

3. Air temperature below 50 degrees F.

- 8 oz. - Master Builders - Pozzutec 20
- 8 oz. - Sika Chemical Co. - Plastorcrete 161 PC
- 12 oz. - Grace - Darex

2.13 FABRICATION

A. All reinforcing shall be fabricated. Fabrication shall be in accordance with applicable sections, ACI 301,

SECTION 03 30 00

CONCRETE WORK

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

03 30 00-11

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

---

ACI 318, ACI-SP66, and CRSI Manual of Standard Practice. All bends shall be made cold around pins having a diameter of not less than that specified in the bend test of the applicable ASTM specifications. Heating bars for bending is prohibited without the written approval of the Architect.

- B. Reinforcement shall be correct in length and size and bent as prescribed by contract drawings or specifications.

PART 3 - EXECUTION

3.01 PREPARATION

A. Excavations

1. Where excavations exceeding a depth of five feet are to be made to install the foundations or any part of the structure of this building or any retaining walls on the site, the back slope of such excavation shall be at an incline not exceeding one vertical to two horizontal unless such backslope is sheeted and braced. If sheeting and bracing are to be provided, such sheeting and bracing shall be designed by an Engineer registered in the state where the project is located. Such sheeting and bracing shall be designed to resist the pressures given on pages 14-32 of the CRSI Design Handbook unless more specific pressures are determined by a Registered Soils Engineer. The cost of such design work and installation shall be paid for by the Contractor at no additional cost to the Owner.
2. No excavation shall be made below a line extending downward and away from any foundation grade slab or other building element on a slope one vertical or two horizontal, unless such foundation, grade slab, or other building element is under pinned. The underpinning shall be designed by an Engineer registered in the state where the project is located. The cost of such design work and installation shall be paid for by the Contractor at no additional cost to the Owner.

- B. Treat excavated soil for termites as required by industry standards.

C. Care of Materials

1. Shipping, storage and handling of reinforcing steel shall be in such a manner as to prevent damage.
2. Straightening of bars bent in shipping or handling will not be undertaken except when so directed by change order.

D. Cleaning

1. Reinforcing shall be cleaned of grease, dirt, concrete, or other foreign substances.

SECTION 03 30 00

CONCRETE WORK

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

03 30 00-12

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

---

3.02 INSTALLATION

A. Construction of Forms

1. All forms shall be built and secured in place to carry the dead weight of the concrete as a liquid without deflection or distortion exceeding the requirements of ACI 347. Formwork shall be built watertight, true to position and direction. Formwork shall be constructed so as to ensure the concrete surfaces will conform to the tolerances given in ACI 347.
2. All concrete surfaces that are to be left exposed on interior and exterior of the building shall have the forms so constructed that when removed they will produce a uniform smooth surface free from misalignment and imperfections.
3. Where new concrete is placed above a previous placement, the joint between new and old work, as well as the face of the concrete surface, must be aligned.
4. All wood forms shall be built of sound lumber. Clean and remove nails from form material before reusing or when using second-hand lumber.
5. Unless indicated otherwise on the drawings, all columns shall be centered on the foundations supporting them within a tolerance of 2".
6. Where earth is too unstable to serve as a form for foundations or walls, wood forms shall be provided.
7. Box out all slots, recesses, or openings for work of all trades.
8. Build bulkheads with keys in walls and footings at construction joints in concrete.
9. Bevel strips shall be placed at all outside corners of exposed work unless shown otherwise on architectural details.
10. All overhanging edges shall be provided with a 1/2" quarter round drip 2" from the edge.

B. Installing other material in forms

1. Expansion joint fillers shall be installed in the forms, where called for on plans, in advance of the pour. 8d nails of 2'-0" o.c. shall be placed through the filler so that when concrete is placed, the nails will be embedded so as to lock the filler in place.
2. Compact earth fill under slabs on grade in eight inch layers with mechanical equipment to obtain a compaction of 95% standard proctor, unless specified otherwise.
3. Provide 6 mil polyethylene film vapor barrier under all slabs on grade.
4. Fill for slabs on grade shall be #57 stone, 4" thick, where shown on drawings.

C. Placement of Reinforcement

SECTION 03 30 00

CONCRETE WORK

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

03 30 00-13

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

- 
1. Reinforcement shall be placed to conform with the recommendations of ACI 301, ACI 318, and CRSI Manual of Standard Practice.
  2. Bars shall not be cut or bent in the field unless specifically called for on detail drawings.
  3. Bars with kinks or bends not shown on detail drawings shall not be used.
  4. Contract drawings shall take precedence over Contractor's working drawings unless otherwise authorized by written change order.
  5. Contract drawings shall be referred to by the steel setter for details governing placing.
  6. Vertical steel shall be lapped 30 diameters at splices unless specifically called for otherwise on plans.
  7. Steel dowels for successive work shall be wired in the prescribed position before placing concrete. The "sticking" of dowels after placing concrete will not be permitted.
  8. Hooks may be turned flat to facilitate placement.
  9. Concrete covering for reinforcing steel shall be as follows unless shown otherwise on drawings:
    - a. Concrete cast against and permanently exposed to earth: 3"
    - b. Concrete exposed to earth or weather:  
#6 through #18 bars: 2"  
#5 bar, W31 or D31 wire, and smaller: 1-1/2"
    - c. Concrete not exposed to weather or in contact with ground:  
Slabs, walls  
#14 and #18 bar: 1-1/2"  
#11 bar and smaller: 3/4"
  10. No splicing of main reinforcing steel will be permitted unless shown otherwise on plans. Bars marked continuous shall be lapped 30 diameters at splices, and at corner conditions corner bars shall be provided.
  11. No reinforcing shall be cut in the field unless it is called for to be cut on the reviewed shop drawings.
  12. No reinforcing shall be bent in the field unless it is called for to be bent on the reviewed shop drawings.
- D. Placement of Wire Mesh
1. Welded wire fabric shall be lapped 6" at both side and end laps unless shown otherwise on drawings and wire together at 18" o.c. Mesh shall extend to within 2" of sides and end of slabs.

3.03 WELDING OF REINFORCEMENT

SECTION 03 30 00

CONCRETE WORK

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

03 30 00-14

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

---

- A. All reinforcing bars which are to be welded shall be welded in accordance with AWS D1.4.

**3.04 MIXING**

- A. All materials shall be measured and mixed in a machine. Mixing and transporting shall meet ASTM C94. The materials shall first be mixed dry and the water then added by measurement.
- B. Mixing time shall begin when the water is added to the mix.
- C. Water shall not be added to the mix at the job site except under the direction of the laboratory responsible for testing (paragraph 1.06). The laboratory shall instruct that a fixed amount of cement shall be added to maintain the water-cement ratio. The mixer shall be turned 50 revolutions after the addition of water.
- D. A slump test shall be made of any concrete to which water has been added to ascertain that the slump does not exceed 5" for regular mixes and 6" for pump mixes.
- E. A record shall be kept of any concrete to which water has been added, and the record shall show the results of the slump test.

**3.05 PREPARATION**

- A. Before the placing of any concrete the footing trenches shall be drained of water, any mud film removed and any loose dirt lifted out.
- B. Before placing concrete in forms the forms shall be cleaned and all debris removed. All reinforcing shall be checked to be sure that no reinforcing is touching the form or pan sides. A man shall be designated during the pour to keep the steel in the prescribed position.
- C. Before placing any concrete it shall be determined that all conduits, pipes, sleeves, inserts, hangers, steel equipment, grounds, anchors, and other work that is to be built into the concrete is located and installed. All such items shall be so placed as not to interfere with the reinforcing steel.
- D. No concrete shall be placed until the Architect has observed the reinforcement.
- E. Wood board forms shall be soaked with water first before the concrete is placed.
- F. Metal forms shall be oiled before reinforcement is placed.
- G. All reinforcement shall be supported and fastened in prescribed position and protected against displacement during pouring operations.
- H. A workman shall be designated to lift mesh reinforcing off the ground or the bottom of forms as concrete is placed.
- I. Concrete temperature at time of placement shall be as follows:

## SECTION 03 30 00

## CONCRETE WORK

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

03 30 00-15

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

---

Temperature F Degrees	Concrete Temperature Maximum	F Degrees Minimum
Above 75	90	75
50 - 75	90	75
40 - 50	90	65
30 - 40	90	55
0 - 30	90	65
Below 0	90	70

## J. Cold Weather Concreting

1. Cold weather concreting procedures shall be used when temperature at job site is 40 degrees or below at time of concrete placement as follows:
  - a. Heat ingredients as necessary to produce a mix temperature at time of placement as specified herein.
  - b. Concrete shall be heated, insulated, and protected as necessary to maintain a concrete temperature of 40 degrees F minimum for 72 hours after placement.
  - c. Accelerating agents shall not be used unless approval from the Architect has been obtained.
2. ACI 306R should be used as a guide in determining proper procedures for cold weather concreting.

## K. Hot Weather Concreting

1. Hot weather concreting procedures shall be used when temperature a job site is 75 degrees F or above at time of concrete placement or wind or humidity is such to result in shrinkage cracking as follows:
  - a. Cool materials necessary to produce a mix temperature at time of placement as specified herein.
  - b. Mix time shall not exceed one hour from time of initial mix.
  - c. Concrete once discharged from truck shall be placed in its final position within 30 minutes from time of discharge.
  - d. Placed concrete shall be cooled or protected as necessary to maintain a concrete temperature of 120 degrees maximum for 48 hours after placement.
  - e. Retarding agents shall not be used unless approval from the Architect has been

SECTION 03 30 00

CONCRETE WORK

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

03 30 00-16

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

---

obtained.

2.ACI 305R should be used as a guide in determining proper procedures for cold weather concreting.

**3.06 TRANSPORTING CONCRETE**

- A. Concrete shall be handled from the mixer to the place of final deposit by means of carts, buggies, conveyor, or pump in accordance with ACI 304. If the concrete is to be transported more than fifty feet in carts or buggies they shall be equipped with pneumatic tires. Concrete delivered to the carts, buggies, or conveyors from spouts, troughs or mixer trucks shall not have a free fall of more than three (3) feet. Prevent separation or loss of ingredients while transporting the concrete.

**3.07 CASTING**

- A. It shall be the responsibility of the Contractor to consider the temperature and humidity in scheduling the time interval between mixing and placing. No partially hardened concrete shall be placed. Placement shall meet the requirements of ACI 304.
- B. Special care shall be observed to avoid concrete spilling over forms when placing.
- C. Placing of concrete shall be rapid and continuous between construction joints. Concrete shall not be placed when the sun, wind, heat, or humidity prevent placement and consolidation.
- D. Special care shall be taken in spading concrete around gangs of parallel conduit.
- E. Concrete shall not be placed within twenty-five feet of workmen placing or securing reinforcement.
- F. Internal type mechanical vibrators and hand spading shall be used to consolidate the concrete and produce a dense concrete free from voids and honeycombs. Care shall be taken that vibration is not applied long enough to separate the ingredients. Use and type of vibrators shall conform to ACI 309.
- G. Hand spreading shall be done with shovels not rakes.
- H. Before depositing the new concrete on or against concrete that has hardened, the forms shall be retightened, the surface of the hardened concrete roughened, cleaned of foreign matter than laitance and moistened with water. To ensure mortar at the juncture of the hardened and newly deposited concrete, the cleaned and moistened surface of the hardened concrete, including vertical and inclined surfaces, shall first be slushed with a coating of neat cement grout against which the new concrete shall be placed before the grout has attained its initial set. Before starting to place concrete in walls and columns a uniform layer of grout two inches thick shall be placed at the bottom of the forms or on top of the hardened concrete. The grout shall consist of one part cement and two

SECTION 03 30 00

CONCRETE WORK

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

03 30 00-17

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

---

parts sand with enough water to make a thick consistency.

- I. All horizontal surfaces shall be screeded to an even surface by the use of a straight edge and screeding strips set at the level called for on plans. Screeds shall be of such type and so arranged as not to interfere with the top slab steel. Finish is specified in a following section.

**3.08 PROTECTION**

- A. Workmen shall not walk on concrete during placing or finishing with any earth or foreign matter on footgear.
- B. All freshly placed concrete shall be protected from damage or injury due to water, falling objects, persons or anything that might mar, discolor, or injure the finish surface of the concrete. Any surfaces that are damaged due to lack of protective measures shall be removed and replaced with fresh concrete at the expense of the Contractor.

**3.09 FLOOR FINISHING**

- A. Floors, except those requiring a special finish, shall be finished as follows:
  1. The surface of all concrete slabs, after screeding, shall be worked with a float in a manner which will compact the concrete and produce a surface free of depressions or inequalities of any kind. Test for grade (or level) and correct by removing excess or adding and compacting additional concrete.
  2. All floor slabs, except in areas dropped to receive finish, shall receive a steel trowel finish as follows:
    - a. After screeding and floating slab surface and when concrete has hardened to prevent excess fines from working to the surface and surface water has disappeared, steel trowel slab to a smooth surface free from defects.
    - b. After initial troweling and when surface produces a ringing sound as trowel is moved across surface, steel trowel the slab a second time. The drying of the surface moisture must proceed naturally and must not be hastened by sacking or dusting on of sand or cement.
  3. Areas which are dropped to receive a finish, after floating, shall be roughened with a very coarse broom.
  4. All concrete ramps, docks, and stair treads shall be dusted with abrasive aggregates at the rate of 25 pounds per 100 square feet. Abrasive aggregates shall be worked into concrete surface by trowelling.

SECTION 03 30 00

CONCRETE WORK

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

03 30 00-18

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

---

3.10 CURING OF CONCRETE

A. Unformed Horizontal Surfaces

1. As soon as sheen of surface water has disappeared and the surface can be walked upon without damage (one or two hours) concrete surfaces shall be cured as follows:
  - a. All interior slabs with resilient tile, carpet or left exposed shall be cured with the specified curing and sealing compound.
  - b. All other interior slabs shall be cured with the specified dissipating resin type curing compound.
  - c. All vertical surfaces shall be cured with the specified curing and hardening compound when forms are removed prior to completion of the curing period.
  - d. The curing compounds must be applied immediately after final finishing.
  - e. Where required, the curing and hardening compounds shall be applied to vertical surfaces immediately after forms have been removed.
  - f. Sisalkraft paper, placed in a manner approved by the Engineer, may be used for any surface indicated above to be cured with the dissipating resin compound or the curing and hardening compound.
2. Surface traffic shall not be permitted on curing compound until curing compound is completely dry.

B. Formed Surfaces

1. Formed surfaces which are rubbed after forms are removed shall be covered with the curing and hardening compound at manufacturer's specified rate immediately after rubbing is completed.
2. Formed surfaces which are repaired or patched shall be covered with the curing and hardening compound at manufacturer's specified rate immediately after repairing and/or patching is complete.
3. No coating, sealer or other applied material shall be placed on concrete which received a curing compound until forty-five (45) days after curing compound has been in place.

3.11 TOLERANCES

- A. Tolerances for concrete floor slabs shall meet the requirements of ACI 117, Class BX Slabs.
- B. Where slabs abut at joints the differential elevation between abutting slabs shall be less than 1/16

SECTION 03 30 00  
CONCRETE WORK

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

03 30 00-19

---

inch.

**3.12 EXPOSED CONCRETE SURFACES**

A. Exposed concrete surfaces shall be finished as follows:

1. Surfaces shall be rubbed smooth with carborundum brick or other abrasive within 36 hours after forms are removed. Surfaces shall be wetted and rubbed until a uniform color and texture is produced. No cement grout or slush shall be used other than the cement paste drawn from the green concrete itself by the rubbing process.
2. The first panel that is to be finished shall be done in the presence of the Architect. When it is approved by the Architect, it shall serve as a standard to which all additional architecturally finished concrete shall conform.
3. Edges of exposed beams and columns shall be pointed up to present a straight, square appearance.

**3.13 REMOVAL OF FORMS**

A. Removal

1. Care shall be taken in the removal of the forms not to damage the surface of the concrete. Immediately after the forms are removed, the Architect shall examine the concrete and determine the extent and magnitude of any damaged or imperfect work. The Architect shall determine what work shall be patched and what work shall be removed and rebuilt. Patching, where allowed, shall be done immediately. Patching shall be done as specified in these specifications.
2. The removal of shoring and stripping of forms shall be the responsibility of the Contractor. In no case shall forms for columns or walls be removed in less than two days.
3. All form ties shall be broken back at least 1/2" from the surface of concrete, and pull ties shall be removed.

**3.14 PATCHING AND CORRECTION OF DEFECTIVE WORK**

- A. Any concrete which is not within the allowable tolerances as set forth in ACI 347, Section 203.1 shall be considered as not conforming to these specifications. Any concrete which is not formed as shown on the plans or is out of alignment or level or shows a defective surface shall be considered as not conforming to these specifications.
- B. Any concrete as described above shall be removed from the job by the Contractor at his expense

SECTION 03 30 00

CONCRETE WORK

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

03 30 00-20

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

---

unless the Architect grants permission to patch or repair the defective area. Permission to patch or repair any such area shall not be considered a waiver of the Architect's right to require complete removal of the defective work if the patching does not, in his opinion, obtain the quality and appearance of the work as specified.

- C. Within 24 hours after removing form, all concrete surfaces shall be inspected by the Architect. With the Architect's approval any honeycombs, voids, stone pockets and tie holes shall at once be patched before the concrete is dry. Defective areas shall be chipped away to a depth of not less than one inch (1") with the edges perpendicular to the surface. The area to be patched and a space at least six inches (6") wide entirely surrounding it shall be dampened with water to prevent absorption of water from the patching mortar. The specified bonding compound shall be applied to the damp concrete.
- D. The patching shall be made of the same material and of the same proportions as used for the concrete except that the coarse aggregate shall be omitted. The amount of water used in mixing the mortar shall be consistent with the requirements of handling and placing. The mortar shall be retempered without the addition of water by allowing to stand for a period of one hour during which hour it shall be mixed with a trowel to prevent setting.
- E. After the bonding compound has dried, the mortar shall be compacted into place. Every hole and void shall be filled solid and the mortar screeded off to leave the patch slightly higher than the surrounding surface. It shall then be left undisturbed for a period of one to two hours to permit initial shrinkage before being finally finished. The patch shall be finished in such a manner to match the adjoining surface.
- F. Where patching is not accomplished within 24 hours after removal of forms, the shotcrete method of applying concrete under pressure shall be used. Application of shotcrete shall meet ACI 506.
- G. Where concrete or concrete work does not conform to the plans or to the specifications and is condemned by the Architect, procedures and plans covering removal and rebuilding or other corrective measures shall be submitted by the Contractor to the Architect before removal and rebuilding is begun. The cost of such plans, as well as the cost of corrective work or removal and rebuilding shall be at the Contractor's expense.

END OF SECTION

SECTION 03 30 00  
CONCRETE WORK

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

03 30 00-21

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SECTION 04 26 13  
MASONRY VENEER

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

04 26 13-1

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SECTION 042613 - MASONRY VENEER

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
  - 1. Stone Veneer.
- B. Products Installed but Not Furnished under This Section:
  - 1. Steel lintels in masonry veneer.
  - 2. Steel shelf angles for supporting masonry veneer.

1.2 ALLOWANCES

- A. Stone Veneer is NOT part of the Face Brick Allowance. Stone Veneer shall be included in Base bid.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples for Verification: For each type and color of [stone] [and] [colored mortar].

1.4 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For each type and size of product.

1.5 QUALITY ASSURANCE

- A. Sample Panels: Build sample panels to verify selections made under Sample submittals and to demonstrate aesthetic effects. Comply with requirements in Section 014000 "Quality Requirements" for mockups.
  - 1. Build sample panels for [each type of exposed unit masonry construction] in sizes approximately [48 inches (1200 mm)] long by [48 inches (1200 mm)] high by full thickness.

SECTION 04 26 13  
MASONRY VENEER

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

04 26 13-2

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1.6 FIELD CONDITIONS

- A. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.
  - 1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is **40 deg F (4 deg C)** and higher and will remain so until masonry has dried, but not less than seven days after completing cleaning.
- B. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

PART 2 - PRODUCTS

2.1 UNIT MASONRY, GENERAL

- A. Masonry Standard: Comply with TMS 602/ACI 530.1/ASCE 6, except as modified by requirements in the Contract Documents.
- B. Stone Veneer to be Echelon Masonry Waterford Stone (Artisan Masonry Stone Veneers) with sheet membrane waterproofing on the concrete block behind the veneer..
  - 1. Colors: **[As selected by Architect from manufacturer's full range]**.

2.2 MORTAR MATERIALS

- A. Use mortar as recommended by manufacturer.

2.3 TIES AND ANCHORS

- A. General: Ties and anchors shall extend at least **1-1/2 inches (38 mm)** into veneer but with at least a **5/8-inch (16-mm)** cover on outside face.
- B. Materials: Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated:
  - 1. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A82/A82M, with ASTM A153/A153M, Class B-2 coating.
  - 2. Steel Sheet, Galvanized after Fabrication: ASTM A1008/A1008M, Commercial Steel, with ASTM A153/A153M, Class B coating.

SECTION 04 26 13  
MASONRY VENEER

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

04 26 13-3

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2.4 EMBEDDED FLASHING MATERIALS

- A. Metal Flashing: Provide metal flashing complying with SMACNA's "Architectural Sheet Metal Manual" and as follows:
1. Stainless Steel: ASTM A240/A240M or ASTM A666, Type 304, **0.016 inch (0.40 mm)** thick.
  2. Copper: ASTM B370, Temper H00, cold-rolled copper sheet, **16-oz./sq. ft. (4.9-kg/sq. m)** weight or **0.0216 inch (0.55 mm)** thick or ASTM B370, Temper H01, high-yield copper sheet, **12-oz./sq. ft. (3.7-kg/sq. m)** weight or **0.0162 inch (0.41 mm)** thick.
  3. Fabricate continuous flashings in sections **96 inches (2400 mm)** long minimum, but not exceeding **12 feet (3.7 m)**. Provide splice plates at joints of formed, smooth metal flashing.
  4. Fabricate metal drip edges from stainless steel. Extend at least **3 inches (76 mm)** into wall and **1/2 inch (13 mm)** out from wall, with outer edge bent down 30 degrees[ **and hemmed**].
  5. Fabricate metal sealant stops from stainless steel. Extend at least **3 inches (76 mm)** into wall and out to exterior face of wall. At exterior face of wall, bend metal back on itself for **3/4 inch (19 mm)** and down into joint **1/4 inch (6 mm)** to form a stop for retaining sealant backer rod.
- B. Flexible Flashing: Use[ **one of**] the following unless otherwise indicated:
- C. Solder and Sealants for Sheet Metal Flashings: As specified in Section 076200 "Sheet Metal Flashing and Trim."
- D. Adhesives, Primers, and Seam Tapes for Flashings: Flashing manufacturer's standard products or products recommended by flashing manufacturer for bonding flashing sheets to each other and to substrates.

2.5 MISCELLANEOUS MASONRY ACCESSORIES

- A. Compressible Filler: Premolded filler strips complying with ASTM D1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from [**neoprene**] [**urethane**] [**or**] [**PVC**].
- B. Weep/Vent Products: Use[ **one of**] the following unless otherwise indicated:
1. Cellular Plastic Weep/Vent: One-piece, flexible extrusion made from UV-resistant polypropylene copolymer, full height and width of head joint and depth **1/8 inch (3 mm)** less than depth of outer wythe, in color selected from manufacturer's standard.
    - a. [<Double click here to find, evaluate, and insert list of manufacturers and products.>](#)

SECTION 04 26 13  
MASONRY VENEER

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

04 26 13-4

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2. Mesh Weep/Vent: Free-draining mesh; made from polyethylene strands, full height and width of head joint and depth **1/8 inch (3 mm)** less than depth of outer wythe; in color selected from manufacturer's standard.
    - a. [<Double click here to find, evaluate, and insert list of manufacturers and products.>](#)
  3. Aluminum Weep Hole/Vent: Units made from sheet aluminum, designed to fit into a head joint and consisting of a vertical channel, with louvers stamped in web and with a top flap to keep mortar out of the head joint; factory primed and painted before installation to comply with Section 099113 "Exterior Painting" in color selected by Architect.
    - a. [<Double click here to find, evaluate, and insert list of manufacturers and products.>](#)
  4. Vinyl Weep Hole/Vent: Units made from flexible PVC, designed to fit into a head joint and consisting of a louvered vertical leg, flexible wings to seal against ends of masonry units, and a top flap to keep mortar out of the head joint; in color selected by Architect.
    - a. [<Double click here to find, evaluate, and insert list of manufacturers and products.>](#)
- C. Cavity Drainage Material: Free-draining mesh, made from polymer strands that will not degrade within the wall cavity.
1. [<Double click here to find, evaluate, and insert list of manufacturers and products.>](#)
  2. Configuration: Provide one of the following:
    - a. Strips, full depth of cavity and **10 inches (250 mm)** high, with dovetail-shaped notches **7 inches (175 mm)** deep that prevent clogging with mortar droppings.
    - b. Strips, not less than [**3/4 inch (19 mm)**] [**1-1/2 inches (38 mm)**] thick and **10 inches (250 mm)** high, with dimpled surface designed to catch mortar droppings and prevent weep holes from clogging with mortar.
    - c. Sheets or strips, full depth of cavity and installed to full height of cavity.

## 2.6 MASONRY CLEANERS

- A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.
  1. [<Double click here to find, evaluate, and insert list of manufacturers and products.>](#)

SECTION 04 26 13  
MASONRY VENEER

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

04 26 13-5

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2.7 MORTAR MIXES

- A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.
1. Do not use calcium chloride in mortar or grout.
  2. Use [**portland cement-lime**] [**or**] [**masonry cement**] mortar unless otherwise indicated.
  3. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.
- B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.
- C. Mortar for Unit Masonry: Comply with ASTM C270, Proportion Specification. Use Type N unless another type is indicated.
- D. Pigmented Mortar: Use colored cement product[ **or select and proportion pigments with other ingredients to produce color required. Do not add pigments to colored cement products**].
1. Pigments shall not exceed 10 percent of portland cement by weight.
  2. Pigments shall not exceed 5 percent of [**masonry cement**] [**or**] [**mortar cement**] by weight.
  3. Application: Use pigmented mortar for exposed mortar joints.
- E. Colored-Aggregate Mortar: Produce required mortar color by using colored aggregates and natural color or white cement as necessary to produce required mortar color.
1. Mix to match Architect's sample.
  2. Application: Use colored aggregate mortar for exposed mortar joints.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

SECTION 04 26 13  
MASONRY VENEER

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

04 26 13-6

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- B. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures. Mix units from several pallets or cubes as they are placed.
  - C. Wetting of Brick: Wet brick before laying if initial rate of absorption exceeds **30 g/30 sq. in. (30 g/194 sq. cm)** per minute when tested according to ASTM C67. Allow units to absorb water so they are damp but not wet at time of laying.

### 3.2 TOLERANCES

#### A. Dimensions and Locations of Elements:

- 1. For dimensions in cross section or elevation, do not vary by more than plus **1/2 inch (12 mm)** or minus **1/4 inch (6 mm)**.
- 2. For location of elements in plan, do not vary from that indicated by more than plus or minus **1/2 inch (12 mm)**.
- 3. For location of elements in elevation, do not vary from that indicated by more than plus or minus **1/4 inch (6 mm)** in a story height or **1/2 inch (12 mm)** total.

#### B. Lines and Levels:

- 1. For bed joints and top surfaces of bearing walls, do not vary from level by more than **1/4 inch in 10 feet (6 mm in 3 m)**, or **1/2 inch (12 mm)** maximum.
- 2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than **1/8 inch in 10 feet (3 mm in 3 m)**, **1/4 inch in 20 feet (6 mm in 6 m)**, or **1/2 inch (12 mm)** maximum.
- 3. For vertical lines and surfaces, do not vary from plumb by more than **1/4 inch in 10 feet (6 mm in 3 m)**, **3/8 inch in 20 feet (9 mm in 6 m)**, or **1/2 inch (12 mm)** maximum.
- 4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than **1/8 inch in 10 feet (3 mm in 3 m)**, **1/4 inch in 20 feet (6 mm in 6 m)**, or **1/2 inch (12 mm)** maximum.
- 5. For lines and surfaces, do not vary from straight by more than **1/4 inch in 10 feet (6 mm in 3 m)**, **3/8 inch in 20 feet (9 mm in 6 m)**, or **1/2 inch (12 mm)** maximum.

#### C. Joints:

- 1. For bed joints, do not vary from thickness indicated by more than plus or minus **1/8 inch (3 mm)**, with a maximum thickness limited to **1/2 inch (12 mm)**.
- 2. For exposed head joints, do not vary from thickness indicated by more than plus or minus **1/8 inch (3 mm)**. [ **Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch (3 mm)**. ]

SECTION 04 26 13  
MASONRY VENEER

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

04 26 13-7

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3.3 LAYING MASONRY WALLS

- A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.
- B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond; do not use units with less-than-nominal **4-inch (100-mm)** horizontal face dimensions at corners or jambs.
- C. Fill space between steel frames and masonry solidly with mortar unless otherwise indicated.

3.4 MORTAR BEDDING AND JOINTING

- A. Lay masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
- B. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.

3.5 ANCHORED MASONRY VENEERS

- A. Anchor masonry veneers to **[wall framing] [and] [concrete and masonry backup]** with **[seismic]** masonry-veneer anchors to comply with the following requirements:
  - 1. Fasten **[screw-attached] [and] [seismic]** anchors **[through sheathing to wall framing] [and] [to concrete and masonry backup]** with metal fasteners of type indicated. Use two fasteners unless anchor design only uses one fastener.
  - 2. Embed **[tie sections] [connector sections and continuous wire]** in masonry joints.
  - 3. Locate anchor sections to allow maximum vertical differential movement of ties up and down.
  - 4. Space anchors as indicated, but not more than **18 inches (458 mm)** o.c. vertically and **24 inches (610 mm)** o.c. horizontally, with not less than one anchor for each **2 sq. ft. (0.2 sq. m)** of wall area. Install additional anchors within **12 inches (305 mm)** of openings and at intervals, not exceeding **8 inches (203 mm)**, around perimeter.
  - 5. Space anchors as indicated, but not more than **16 inches (406 mm)** o.c. vertically and **25 inches (635 mm)** o.c. horizontally, with not less than one anchor for each **[2.67 sq. ft. (0.25 sq. m)] [3.5 sq. ft. (0.33 sq. m)]** of wall area. Install additional anchors within **12 inches (305 mm)** of openings and at intervals, not exceeding **36 inches (914 mm)**, around perimeter.

SECTION 04 26 13  
MASONRY VENEER

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

04 26 13-8

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6. Space anchors as indicated, but not more than **18 inches (458 mm)** o.c. vertically and horizontally. Install additional anchors within **12 inches (305 mm)** of openings and at intervals, not exceeding **24 inches (610 mm)**, around perimeter.
  - B. Provide not less than **[2 inches (50 mm)] [1 inch (25 mm)]** <Insert distance> of airspace between back of masonry veneer and face of **[sheathing] [insulation]**.

### 3.6 ANCHORING MASONRY TO STRUCTURAL STEEL AND CONCRETE

- A. Anchor masonry to structural steel and concrete, where masonry abuts or faces structural steel or concrete to comply with the following:
  1. Provide an open space not less than **[1/2 inch (13 mm)] [1 inch (25 mm)] [2 inches (50 mm)]** wide between masonry and structural steel or concrete unless otherwise indicated. Keep open space free of mortar and other rigid materials.
  2. Anchor masonry with anchors embedded in masonry joints and attached to structure.
  3. Space anchors as indicated, but not more than **24 inches (610 mm)** o.c. vertically and **36 inches (915 mm)** o.c. horizontally.

### 3.7 FLASHING, WEEP HOLES, AND VENTS

- A. General: Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges, other obstructions to downward flow of water in wall, and where indicated. **[ Install vents at shelf angles, ledges, and other obstructions to upward flow of air in cavities, and where indicated.]**
- B. Install flashing as follows unless otherwise indicated:
  1. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Where flashing is within mortar joint, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape **[ as recommended by flashing manufacturer]**.
  2. At lintels and shelf angles, extend flashing a minimum of **6 inches (150 mm)** into masonry at each end. At heads and sills, extend flashing **6 inches (150 mm)** at ends and turn up not less than **2 inches (50 mm)** to form end dams.
  3. Install metal drip edges beneath flexible flashing at exterior face of wall. Stop flexible flashing **1/2 inch (13 mm)** back from outside face of wall, and adhere flexible flashing to top of metal drip edge.
  4. Install metal flashing termination beneath flexible flashing at exterior face of wall. Stop flexible flashing **1/2 inch (13 mm)** back from outside face of wall, and adhere flexible flashing to top of metal flashing termination.

SECTION 04 26 13  
MASONRY VENEER

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

04 26 13-9

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- C. Install weep holes in veneers in head joints of first course of masonry immediately above embedded flashing.
    - 1. Use [**specified weep/vent products**] [**or**] [**open-head joints**] to form weep holes.
    - 2. Space weep holes **24 inches (600 mm)** o.c. unless otherwise indicated.
  - D. Place cavity drainage material in airspace behind veneers to comply with configuration requirements for cavity drainage material in "Miscellaneous Masonry Accessories" Article.
  - E. Install vents in head joints in exterior wythes at spacing indicated. Use [**specified weep/vent products**] [**or**] [**open-head joints**] to form vents.
    - 1. Close cavities off vertically and horizontally with blocking in manner indicated. Install through-wall flashing and weep holes above horizontal blocking.

### 3.8 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Owner will engage special inspectors to perform tests and inspections and prepare reports. Allow inspectors access to scaffolding and work areas as needed to perform tests and inspections. Retesting of materials that fail to comply with specified requirements shall be done at Contractor's expense.
- B. Inspections: Special inspections according to Level B in TMS 402/ACI 530/ASCE 5.
  - 1. Begin masonry construction only after inspectors have verified proportions of site-prepared mortar.
- C. Testing Prior to Construction: One set of tests.
- D. Clay Masonry Unit Test: For each type of unit provided, according to ASTM C67 for compressive strength.
- E. Concrete Masonry Unit Test: For each type of unit provided, according to ASTM C140 for compressive strength.
- F. Mortar Aggregate Ratio Test (Proportion Specification): For each mix provided, according to ASTM C780.

### 3.9 REPAIRING, POINTING, AND CLEANING

- A. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.

SECTION 04 26 13  
MASONRY VENEER

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

04 26 13-10

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- B. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
1. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes.
  2. Protect adjacent stone and nonmasonry surfaces from contact with cleaner.
  3. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
  4. Clean brick by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
  5. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.

3.10 MASONRY WASTE DISPOSAL

- A. Waste Disposal as Fill Material: Dispose of clean masonry waste, including excess or soil-contaminated sand, waste mortar, and broken masonry units, by crushing and mixing with fill material as fill is placed.
1. Do not dispose of masonry waste as fill within 18 inches (450 mm) of finished grade.
- B. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above or recycled, and other masonry waste, and legally dispose of off Owner's property.

END OF SECTION 042613

SECTION 06 10 00  
ROUGH CARPENTRY

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

06 10 00-1

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SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Framing with dimension lumber.
2. Framing with engineered wood products.
3. Shear wall panels.
4. Rooftop equipment bases and support curbs.
5. Wood blocking[, **cants**,] and nailers.
6. Wood furring[ **and grounds**].
7. Wood sleepers.
8. Plywood backing panels.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product.

1.3 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. Fire-retardant-treated wood.
  3. Engineered wood products.
  4. Shear panels.
  5. Power-driven fasteners.
  6. Post-installed anchors.
  7. Metal framing anchors

SECTION 06 10 00  
ROUGH CARPENTRY

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

06 10 00-2

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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, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber 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. Dress lumber, S4S, unless otherwise indicated.
- B. Maximum Moisture Content of Lumber: [**15 percent for 2-inch nominal (38-mm actual) thickness or less; 19 percent for more than 2-inch nominal (38-mm actual) thickness**] unless otherwise indicated.
- C. 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, as published by manufacturer, shall 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: AWWA U1; Use Category UC2[ **for interior construction not in contact with ground, Use Category UC3b for exterior construction not in contact with ground, and Use Category UC4a for items in contact with ground**].
1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.[ **Do not use inorganic boron (SBX) for sill plates.**]
- 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.

SECTION 06 10 00  
ROUGH CARPENTRY

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

06 10 00-3

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D. Application: Treat [**all rough carpentry unless otherwise indicated.**]

1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Wood sills, sleepers, blocking, [**furring,**] [**stripping,**] and similar concealed members in contact with masonry or concrete.
3. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.
4. Wood framing members that are less than **18 inches (460 mm)** above the ground in crawlspaces or unexcavated areas.
5. Wood floor plates that are installed over concrete slabs-on-grade.

2.3 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Where fire-retardant-treated materials are indicated, materials shall comply with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.
- B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than **10.5 feet (3.2 m)** beyond the centerline of the burners at any time during the test.
1. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for exterior locations and where indicated.
  2. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D 3201 at 92 percent relative humidity. Use where exterior type is not indicated.
- C. Kiln-dry lumber after treatment to maximum moisture content of 19 percent.[ **Kiln-dry plywood after treatment to maximum moisture content of 15 percent.**]
- D. Identify fire-retardant-treated wood with appropriate classification marking of qualified testing agency.
- E. Application: Treat [**all rough carpentry unless otherwise indicated.**]
1. Framing for raised platforms.
  2. Framing for stages.

SECTION 06 10 00  
ROUGH CARPENTRY

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

06 10 00-4

3. Concealed blocking.
4. Framing for non-load-bearing partitions.
5. Framing for non-load-bearing exterior walls.
6. Roof construction.
7. Plywood backing panels.

2.4 DIMENSION LUMBER FRAMING

A. Non-Load-Bearing Interior Partitions: [**Construction or No. 2**] grade.

1. Application: [**Interior partitions not indicated as load bearing**].
2. Species:
  - a. Southern pine or mixed southern pine; SPIB.
  - b. Northern species; NLGA.
  - c. Eastern softwoods; NeLMA.
  - d. Western woods; WCLIB or WWPA.

B. Framing Other Than Non-Load-Bearing Partitions: [**Construction or No. 2**] grade.

1. Application: Framing other than [**interior partitions not indicated as load bearing**].
2. Species:
  - a. Hem-fir (north); NLGA.
  - b. Southern pine; SPIB.
  - c. Douglas fir-larch; WCLIB or WWPA.
  - d. Southern pine or mixed southern pine; SPIB.
  - e. Spruce-pine-fir; NLGA.
  - f. Douglas fir-south; WWPA.
  - g. Hem-fir; WCLIB or WWPA.
  - h. Douglas fir-larch (north); NLGA.
  - i. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.

C. Framing Other Than Non-Load-Bearing Partitions: Any species and grade with a modulus of elasticity of at least [**1,500,000 psi (10 350 MPa)**] OR [**1,300,000 psi (8970 MPa)**] OR [**1,100,000 psi (7590 MPa)**] thickness and **12-inch nominal (286-mm actual)** width for single-member use.

1. Application: Framing other than [**interior partitions not indicated as load-bearing**].

D. Exposed Framing: Hand-select material 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.

SECTION 06 10 00  
ROUGH CARPENTRY

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

06 10 00-5

1. Species and Grade: As indicated above for load-bearing construction of same type.

## 2.5 ENGINEERED WOOD PRODUCTS

- A. Laminated-Veneer Lumber: Structural composite lumber made from wood veneers 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. Extreme Fiber Stress in Bending, Edgewise: [**3100 psi (21.3 MPa)**]OR [**2900 psi (20.0 MPa)**] depth members.
  2. Modulus of Elasticity, Edgewise: [**2,000,000 psi (13 700 MPa)**] OR [**1,800,000 psi (12 400 MPa)**]
- B. Wood I-Joists: Prefabricated units, I-shaped in cross section, made with solid or structural composite lumber flanges and wood-based structural panel webs, let into and bonded to flanges. Comply with material requirements of and with structural capacities established and monitored according to ASTM D 5055.
  1. Web Material: [**Either OSB or plywood, complying with DOC PS 1 or DOC PS 2, Exposure 1**]
  2. Structural Properties: Depths and design values not less than those indicated.
  3. Comply with APA PRI-400. Factory mark I-joists with APA-EWS trademark indicating nominal joist depth, joist class, span ratings, mill identification, and compliance with APA-EWS standard.
- C. Rim Boards: Product designed to be used as a load-bearing member and to brace wood I-joists at bearing ends, complying with research or evaluation report for I-joists.
  1. Manufacturer: Provide products by same manufacturer as I-joists.
  2. Material: [**product made from any combination solid lumber, wood strands, and veneers**].
  3. Thickness: [**1 inch (25 mm)**].
  4. Comply with APA PRR-401, [**rim board**] grade. Factory mark rim boards with APA-EWS trademark indicating thickness, grade, and compliance with APA-EWS standard.

## 2.6 SHEAR WALL PANELS

- A. Wood-Framed Shear Wall Panels: Prefabricated assembly consisting of wood perimeter framing, tie downs, and Exposure I, Structural I plywood or OSB sheathing.
- B. Steel-Framed Shear Wall Panels: Prefabricated assembly consisting of cold-formed galvanized-steel panel, steel top and bottom plates, and wood studs.

SECTION 06 10 00  
ROUGH CARPENTRY

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

06 10 00-6

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- C. Allowable design loads, as published by manufacturer, shall meet or exceed those of building codes and **[of products of manufacturers listed]**. 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.

2.7 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. Rooftop equipment bases and support curbs.
  4. Cants.
  5. Furring.
  6. Grounds.
- B. Dimension Lumber Items: **[Construction or No. 2]** grade lumber of any species.
- C. Concealed Boards: **[15]** percent maximum moisture content and **[any of ]**the following species and grades:
1. Mixed southern pine or southern pine; No. **[2]** grade; SPIB.
  2. Eastern softwoods; No. **[2]** Common grade; NeLMA.
  3. Northern species; No. **[2]** Common grade; NLGA.
  4. Western woods; **[Construction or No. 2 Common]** grade; WCLIB or WWPA.

2.8 PLYWOOD BACKING PANELS

- A. Equipment Backing Panels: Plywood, DOC PS 1, **[Exterior, A-C]** in thickness indicated or, if not indicated, not less than **[3/4-inch (19-mm)]** nominal thickness.

2.9 FASTENERS

- A. General: Fasteners shall be of size and type indicated and shall 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]**.

SECTION 06 10 00  
ROUGH CARPENTRY

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

06 10 00-7

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- B. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
  - C. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on **ICC-ES AC01** as appropriate for the substrate.

2.10 METAL FRAMING ANCHORS

- A. Allowable design loads, as published by manufacturer, shall meet or exceed those **[of products of manufacturers listed]**. 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. Framing anchors shall be punched for fasteners adequate to withstand same loads as framing anchors.
- B. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, **G60 (Z180)** coating designation.
  - 1. Use for interior locations unless otherwise indicated.
- C. Hot-Dip, Heavy-Galvanized Steel Sheet: ASTM A 653/A 653M; structural steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); **G185 (Z550)** coating designation; and not less than **0.036 inch (0.9 mm)** thick.
  - 1. Use for wood-preserved-treated lumber and where indicated.

2.11 MISCELLANEOUS MATERIALS

- A. Sill-Sealer Gaskets: Glass-fiber-resilient insulation, fabricated in strip form, for use as a sill sealer; **1-inch (25-mm)** nominal thickness, compressible to **1/32 inch (0.8 mm)**; selected from manufacturer's standard widths to suit width of sill members indicated.
- B. Sill-Sealer Gaskets: Closed-cell neoprene foam, **1/4 inch (6.4 mm)** thick, selected from manufacturer's standard widths to suit width of sill members indicated.
- C. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, **[butyl rubber]** compound, 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)**.
- D. Adhesives for Gluing **[Furring]** to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.

SECTION 06 10 00  
ROUGH CARPENTRY

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

06 10 00-8

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PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- B. Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.
- C. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate [**furring,** ]nailers, blocking, [**grounds,** ]and similar supports to comply with requirements for attaching other construction.
- D. Install shear wall panels to comply with manufacturer's written instructions.
- E. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.
- F. Do not splice structural members between supports unless otherwise indicated.
- G. Comply with AWWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
- H. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- I. Securely attach 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 (IBC).
  - 2. 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.
  - 3. ICC-ES evaluation report for fastener.

3.2 PROTECTION

- A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

SECTION 06 10 00  
ROUGH CARPENTRY

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

06 10 00-9

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- B. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes [**wet enough that moisture content exceeds that specified**], apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061000

SECTION 06 10 53  
MISCELLANEOUS ROUGH CARPENTRY

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

06 10 53-1

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SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Framing with dimension lumber.
2. Rooftop equipment bases and support curbs.
3. Wood blocking[, **cants**,] and nailers.
4. Wood furring[ **and grounds**].
5. Wood sleepers.
6. Utility shelving.
7. Plywood backing panels.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product.

1.3 INFORMATIONAL SUBMITTALS

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

1. Preservative-treated wood.
2. Fire-retardant-treated wood.
3. Power-driven fasteners.

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.

SECTION 06 10 53  
MISCELLANEOUS ROUGH CARPENTRY

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

06 10 53-2

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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**] [**or**] [**omit grade stamp and provide certificates of grade compliance issued by grading agency**].
  3. Dress lumber, S4S, unless otherwise indicated.

- B. Maximum Moisture Content of Lumber: [**15 percent for 2-inch nominal (38-mm actual) thickness or less, 19 percent for more than 2-inch nominal (38-mm actual) thickness**] unless otherwise indicated.

## 2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. Preservative Treatment by Pressure Process: AWP A U1; Use Category UC2[ **for interior construction not in contact with ground, Use Category UC3b for exterior construction not in contact with ground, and Use Category UC4a for items in contact with ground**].

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.[ **Do not use inorganic boron (SBX) for sill plates.**]

- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or 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.

- D. Application: Treat [**all miscellaneous carpentry unless otherwise indicated.**]

1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Wood sills, sleepers, blocking, [**furring,**] [**stripping,**] and similar concealed members in contact with masonry or concrete.
3. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.
4. Wood framing members that are less than **18 inches (460 mm)** above the ground in crawlspaces or unexcavated areas.
5. Wood floor plates that are installed over concrete slabs-on-grade.

## 2.3 FIRE-RETARDANT-TREATED MATERIALS

- A. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame

SECTION 06 10 53  
MISCELLANEOUS ROUGH CARPENTRY

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

06 10 53-3

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front not extending more than **10.5 feet (3.2 m)** beyond the centerline of the burners at any time during the test.

1. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for exterior locations and where indicated.
2. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D 3201 at 92 percent relative humidity. Use where exterior type is not indicated.
3. Design Value Adjustment Factors: Treated lumber shall be tested according to ASTM D 5664, and design value adjustment factors shall be calculated according to ASTM D 6841. **[ For enclosed roof framing, framing in attic spaces, and where high-temperature fire-retardant treatment is indicated, provide material with adjustment factors of not less than 0.85 modulus of elasticity and 0.75 for extreme fiber in bending for Project's climatological zone.]**

B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. **[ Kiln-dry plywood after treatment to a maximum moisture content of 15 percent.]**

C. Identify fire-retardant-treated wood with appropriate classification marking of qualified testing agency.

D. Application: Treat **[all miscellaneous carpentry unless otherwise indicated.]**

1. Framing for raised platforms.
2. Concealed blocking.
3. Roof framing and blocking.
4. Wood cants, nailers, curbs, equipment support bases, blocking, and similar members in connection with roofing.
5. Plywood backing panels.

#### 2.4 DIMENSION LUMBER FRAMING

A. Non-Load-Bearing Interior Partitions: **[ Construction or No. 2 ]** grade of any species.

B. Other Framing: **[ Construction, Stud, or No. 3 ]** grade of **[ the following ]** species:

1. Hem-fir (north); NLGA.
2. Southern pine; SPIB.
3. Douglas fir-larch; WCLIB or WWPA.
4. Southern pine or mixed southern pine; SPIB.
5. Spruce-pine-fir; NLGA.

SECTION 06 10 53  
MISCELLANEOUS ROUGH CARPENTRY

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

06 10 53-4

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6. Douglas fir-south; WWPA.
  7. Hem-fir; WCLIB or WWPA.
  8. Douglas fir-larch (north); NLGA.
  9. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.

## 2.5 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. Rooftop equipment bases and support curbs.
  4. Cants.
  5. Furring.
  6. Grounds.
  7. Utility shelving.
- B. Dimension Lumber Items: [**Construction or No. 2**] grade lumber of any species.
- C. Concealed Boards: [**15**] [**19**] percent maximum moisture content of [**any of the following**] species and grades:
  1. Mixed southern pine or southern pine, [**No. 2**] [**No. 3**] grade; SPIB.
  2. Eastern softwoods, [**No. 2**] [**No. 3**] Common grade; NELMA.
  3. Northern species, [**No. 2**] [**No. 3**] Common grade; NLGA.
  4. Western woods, [**Construction or No. 2 Common**] [**Standard or No. 3 Common**] grade; WCLIB or WWPA.

## 2.6 PLYWOOD BACKING PANELS

- A. Equipment Backing Panels: Plywood, DOC PS 1, [**Exterior, A-C**] in thickness indicated or, if not indicated, not less than [**3/4-inch (19-mm)**] nominal thickness.

## 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 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**].

SECTION 06 10 53  
MISCELLANEOUS ROUGH CARPENTRY

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

06 10 53-5

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- B. Screws for Fastening to Metal Framing: [ASTM C 1002], length as recommended by screw manufacturer for material being fastened.
  - C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

## 2.8 MISCELLANEOUS MATERIALS

- A. Adhesives for Gluing [**Furring**] [**and**] [**Sleepers**] to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.
  - 1. [<Double click to insert sustainable design text for VOC content of adhesive.>](#) Retain "Flexible Flashing" Paragraph below if required as a separator between preservative-treated wood and metal decking.
- B. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, [**butyl rubber**] compound, 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. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- B. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry accurately to other construction. Locate[ **furring,**] nailers, blocking, [**grounds,**] and similar supports to comply with requirements for attaching other construction.
- C. Install plywood backing panels by fastening to studs; coordinate locations with utilities requiring backing panels.
- D. Do not splice structural members between supports unless otherwise indicated.
- E. Comply with AWWA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
- F. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

SECTION 06 10 53  
MISCELLANEOUS ROUGH CARPENTRY

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

06 10 53-6

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1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
2. 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.
3. ICC-ES evaluation report for fastener.

3.2 PROTECTION

- A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061053

SECTION 06 17 53  
SHOP-FABRICATED WOOD TRUSSES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

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06 17 53-1

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
  - 1. Wood roof trusses.
  - 2. Wood girder trusses.

1.2 ALLOWANCES

- A. Provide wood truss bracing under the Metal-Plate-Connected Truss Bracing Allowance as specified in Section 012100 "Allowances."

1.3 ACTION SUBMITTALS

- A. Product Data: For metal-plate connectors, metal truss accessories, and fasteners.
- B. Shop Drawings: Show fabrication and installation details for trusses.
  - 1. Show location, pitch, span, camber, configuration, and spacing for each type of truss required.
  - 2. Indicate sizes, stress grades, and species of lumber.
  - 3. Indicate locations of permanent bracing required to prevent buckling of individual truss members due to design loads.
  - 4. Indicate locations, sizes, and materials for permanent bracing required to prevent buckling of individual truss members due to design loads.
  - 5. Indicate type, size, material, finish, design values, orientation, and location of metal connector plates.
  - 6. Show splice details and bearing details.
- C. Delegated-Design Submittal: For metal-plate-connected wood trusses indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

SECTION 06 17 53  
SHOP-FABRICATED WOOD TRUSSES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

06 17 53-2

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1.4 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For metal-plate-connected wood trusses, signed by officer of truss-fabricating firm.
- B. Evaluation Reports: For the following, from ICC-ES:
  - 1. Metal-plate connectors.
  - 2. Metal truss accessories.

1.5 QUALITY ASSURANCE

- A. Wood Truss Shop Drawing submittal to contain all layouts, details, connections, etc. Drawings shall bear the stamp of a Georgia Registered Structural Engineer.
- B. Metal Connector-Plate Manufacturer Qualifications: A manufacturer that is a member of TPI and that complies with quality-control procedures in TPI 1 for manufacture of connector plates.
  - 1. Manufacturer's responsibilities include providing professional engineering services needed to assume engineering responsibility.
  - 2. Engineering Responsibility: Preparation of Shop Drawings and comprehensive engineering analysis by a qualified professional engineer.
- C. Fabricator Qualifications: Shop that **[participates in a recognized quality-assurance program, complies with quality-control procedures in TPI 1, and involves third-party inspection by an independent testing and inspecting agency acceptable to Architect and authorities having jurisdiction]**

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Handle and store trusses to comply with recommendations in SBCA BCSI, "Building Component Safety Information: Guide to Good Practice for Handling, Installing, Restraining, & Bracing Metal Plate Connected Wood Trusses."

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design metal-plate-connected wood trusses.

SECTION 06 17 53  
SHOP-FABRICATED WOOD TRUSSES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

06 17 53-3

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- B. Structural Performance: Metal-plate-connected wood trusses shall be capable of withstanding design loads within limits and under conditions indicated. Comply with requirements in TPI 1.
  - C. Comply with applicable requirements and recommendations of TPI 1, TPI DSB, and SBCA BCSI.
  - D. Wood Structural Design Standard: Comply with applicable requirements in AF&PA's "National Design Specifications for Wood Construction" and its "Supplement."

## 2.2 DIMENSION LUMBER

- A. Lumber: DOC PS 20 and applicable rules of any rules-writing agency certified by the American Lumber Standard Committee (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. Provide dry lumber with [15] [19] percent maximum moisture content at time of dressing.
- B. Permanent Bracing: Provide wood bracing that complies with requirements for miscellaneous lumber in [Section 061000 "Rough Carpentry."]

## 2.3 METAL CONNECTOR PLATES

- A. General: Fabricate connector plates to comply with TPI 1.
- B. Hot-Dip Galvanized-Steel Sheet: ASTM A 653/A 653M; Structural Steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G60 (Z180) coating designation; and not less than 0.036 inch (0.9 mm) thick.

## 2.4 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
  - 1. Provide fasteners for use with metal framing anchors that comply with written recommendations of metal framing manufacturer.
  - 2. Where trusses are exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
- B. Nails, Brads, and Staples: ASTM F 1667.

SECTION 06 17 53  
SHOP-FABRICATED WOOD TRUSSES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

06 17 53-4

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2.5 METAL FRAMING ANCHORS AND ACCESSORIES

- A. Allowable design loads, as published by manufacturer, shall comply with or exceed those [indicated or required by the current edition of the International Building Code] .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. Framing anchors shall be punched for fasteners adequate to withstand same loads as framing anchors.
- B. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 (Z180) coating designation.

2.6 FABRICATION

- A. Assemble truss members in design configuration indicated; use jigs or other means to ensure uniformity and accuracy of assembly, with joints closely fitted to comply with tolerances in TPI 1. Position members to produce design camber indicated.
  - 1. Fabricate wood trusses within manufacturing tolerances in TPI 1.
- B. Connect truss members by metal connector plates located and securely embedded simultaneously in both sides of wood members by air or hydraulic press.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install wood trusses only after supporting construction is in place and is braced and secured.
- B. If trusses are delivered to Project site in more than one piece, assemble trusses before installing.
- C. Hoist trusses in place by lifting equipment suited to sizes and types of trusses required, exercising care not to damage truss members or joints by out-of-plane bending or other causes.
- D. Install and brace trusses according to TPI recommendations and as indicated.
- E. Anchor trusses securely at bearing points; use metal truss tie-downs or floor truss hangers as applicable. Install fasteners through each fastener hole in metal framing anchors according to manufacturer's fastening schedules and written instructions.
- F. Securely connect each truss ply required for forming built-up girder trusses.

SECTION 06 17 53  
SHOP-FABRICATED WOOD TRUSSES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

06 17 53-5

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- G. Install and fasten permanent bracing during truss erection and before construction loads are applied. Anchor ends of permanent bracing where terminating at walls or beams.
    - 1. Install bracing to comply with [**Section 061000 "Rough Carpentry."**] [**Section 061053 "Miscellaneous Rough Carpentry."**]
    - 2. Install and fasten strongback bracing vertically against vertical web of parallel-chord floor trusses at centers indicated.
  - H. Install wood trusses within installation tolerances in TPI 1.
  - I. Do not alter trusses in field. Do not cut, drill, notch, or remove truss members.
  - J. Replace wood trusses that are damaged or do not comply with requirements.

END OF SECTION 061753

SECTION 07 21 00  
BUILDING INSULATION

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

072010-1

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
1. Polyisoanurate Boards – Provide 4” board on top of ceiling access door to mechanical deck.
  2. R-19 Batt insulation.
  3. R-40 Batt or blown Insulation.
- B. Related Sections: The following sections contain requirements that relate to this section:
1. "Gypsum Drywall"

1.3 DEFINITIONS

- A. Thermal Resistivity: Where the thermal resistivity of insulation products are designated by "r-values," they represent the reciprocal of thermal conductivity (k-values). Thermal conductivity is the rate of heat flow through a homogenous material exactly 1 inch thick. Thermal resistivities are expressed by the temperature difference in degrees F between the two exposed faces required to cause one BTU to flow through one square foot per hour at mean temperatures indicated.

1.4 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Product data for each type of insulation product specified.
- C. Samples for verification purposes in full-size units of each type of exposed insulation indicated for each color specified.
- D. Product test reports from and based on tests performed by qualified independent testing laboratory evidencing compliance of insulation products with requirements including r-values (aged values for plastic foam insulations), fire performance characteristics, perm ratings, water absorption ratings, and other properties, based on comprehensive testing of current products.

1.5 QUALITY ASSURANCE

- A. Fire Performance Characteristics: Provide insulation materials identical to those whose indicated fire

SECTION 07 21 00  
BUILDING INSULATION

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

072010-2

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performance characteristics have been determined per the ASTM test method indicated below, by UL or other testing and inspecting organizations acceptable to authorities having jurisdiction.

Identify products with appropriate markings of applicable testing and inspecting organization.

1. Surface Burning Characteristic: ASTM E 84
2. Fire Resistance Ratings: ASTM E 119
3. Combustion Characteristics: ASTM E 136

**1.6 DELIVERY, STORAGE, AND HANDLING**

- A. Protect insulation materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's recommendations for handling, storage, and protection during installation.
- B. Protect plastic insulation as follows:
  1. Do not expose to sunlight, except to extent necessary for period of installation and concealment.
  2. Protect against ignition at all times. Do not deliver plastic insulating materials to project site ahead of installation time.
  3. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

**PART 2 - PRODUCTS**

**2.1 MANUFACTURERS**

- A. Manufacturers: Subject to compliance with requirements, provide insulation products of one of the following:
  1. Blown or batt Insulation (batt insulation in walls to provide moisture control – CertainTeed Smartbatt or equal:
    - a. CertainTeed Corp.
    - b. Owens Corning
    - c. Dow Industrives
    - d. OR EQUAL

**2.2 INSULATING MATERIALS**

- A. Polyisoanurate Boards –
- B. Kor-fil Block insulation or equal.

SECTION 07 21 00  
BUILDING INSULATION

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

072010-3

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- C. R-40 Batt Insulation. R- 19 in walls.

**PART 3 - EXECUTION**

**3.1 EXAMINATION**

- A. Examine substrates and conditions with Installer present, for compliance with requirements of the Sections in which substrates and related work are specified and to determine if other conditions affecting performance of insulation are satisfactory. Do not proceed with installation of insulation until unsatisfactory conditions have been corrected.

**3.2 PREPARATION**

- A. Clean substrates of substances harmful to insulations or vapor retarders, including removal of projections that might puncture vapor retarders.

**3.3 INSTALLATION, GENERAL**

- A. Comply with insulation manufacturer's instructions applicable to products and application indicated. If printed instructions are not available or do not apply to project conditions, consult manufacturer's technical representative for specific recommendations before proceeding with installation of insulation.
- B. Extend insulation full thickness as indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation. Remove projections that interfere with placement.
- C. Apply a single layer of insulation of required thickness, unless otherwise shown or required to make up total thickness.

**3.4 INSTALLATION OF GENERAL BUILDING INSULATION**

- A. Apply insulation units to substrate by method indicated, complying with manufacturer's recommendations. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.
- B. Set vapor retarder faced units with vapor retarder to warm side of construction, except as otherwise indicated. Do not obstruct ventilation spaces, except for firestopping.

1. Tape joints and ruptures in vapor retarder, and seal each continuous area of insulation to surrounding construction to ensure airtight installation.

**3.5 PROTECTION**

- A. General: Protect installed insulation and vapor retarders from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation will be subject to abuse and cannot be concealed and protected by permanent construction

SECTION 07 21 00  
BUILDING INSULATION

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

072010-4

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immediately after installation.

END OF SECTION

SECTION 07 50 00  
METAL ROOF PANELS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 50 00-1

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SECTION 07 41 13- STANDING-SEAM METAL ROOF PANELS

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 standing-seam metal roof panels.
- B. Related Sections:
1. Section 074293 "Soffit Panels" for metal panels used in horizontal soffit applications.
  2. Section 077253 "Snow Guards" for prefabricated devices designed to hold snow on the roof surface, allowing it to melt and drain off slowly.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at **[Project site]**
1. Meet with Owner, Architect, Owner's insurer if applicable, metal panel Installer, metal panel manufacturer's representative, structural-support Installer, and installers whose work interfaces with or affects metal panels, including installers of roof accessories and roof-mounted equipment.
  2. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
  3. Review methods and procedures related to metal panel installation, including manufacturer's written instructions.
  4. Examine support conditions for compliance with requirements, including alignment between and attachment to structural members.
  5. Review structural loading limitations of **[deck]** **[purlins and rafters]** during and after roofing.
  6. Review flashings, special details, drainage, penetrations, equipment curbs, and condition of other construction that affect metal panels.
  7. Review governing regulations and requirements for insurance, certificates, and tests and inspections if applicable.

SECTION 07 50 00  
METAL ROOF PANELS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 50 00-2

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8. Review temporary protection requirements for metal panel systems during and after installation.
  9. Review procedures for repair of metal panels damaged after installation.
  10. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of panel and accessory.
- B. Sustainable Design Submittals:
  1. Product Test Reports: For roof materials, documentation indicating that roof materials comply with Solar Reflectance Index requirements.
  2. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
- C. Shop Drawings:
  1. Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.
  2. Accessories: Include details of the flashing, trim, and anchorage systems, at a scale of not less than **3 inches per 12 inches (1:5)**.
- D. Calculations:
  1. Include calculations with registered engineer seal, verifying roof panel and attachment method resist wind pressures imposed on it pursuant to applicable building codes.
- E. Samples for Initial Selection: For each type of metal panel indicated with factory-applied color finishes.
  1. Include similar Samples of trim and accessories involving color selection.
- F. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below.
  1. Metal Panels: **12 inches (305 mm)** long by actual panel width. Include clips, fasteners, closures, and other metal panel accessories.

SECTION 07 50 00  
METAL ROOF PANELS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 50 00-3

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1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Manufacturer and Installer.
- B. Product Test Reports: For each product, for tests performed by a qualified testing agency.
- C. Field quality-control reports.
- D. Sample Warranties: For special warranties.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For metal panels to include in maintenance manuals.

1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in architectural sheet metal products.
- B. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
- C. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.
  - 1. Build mockup of typical roof area and eave[, **including fascia,**] [**and soffit**] as shown on Drawings; approximately **48 inches (1200 mm)** square by full thickness, including attachments[, **underlayment,**] and accessories.
  - 2. Build mockups for typical roof area only, including accessories.
    - a. Size: **48 inches (1200 mm)** by **48 inches (1200 mm)**.
    - b. **[Each type of exposed seam and seam termination**
  - 3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
  - 4. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver components, metal panels, and other manufactured items so as not to be damaged or deformed. Package metal panels for protection during transportation and handling.

SECTION 07 50 00  
METAL ROOF PANELS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 50 00-4

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- B. Unload, store, and erect metal panels in a manner to prevent bending, warping, twisting, and surface damage.
  - C. Stack metal panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal panels to ensure dryness, with positive slope for drainage of water. Do not store metal panels in contact with other materials that might cause staining, denting, or other surface damage.
  - D. Retain strippable protective covering on metal panels until installation. Remove as panels are being installed. Verify film is not left on installed panels.

1.9 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of metal panels to be performed according to manufacturers' written instructions and warranty requirements.

1.10 COORDINATION

- A. Coordinate sizes and locations of roof curbs, equipment supports, and roof penetrations with actual equipment provided.
- B. Coordinate metal panel installation with rain drainage work, flashing, trim, construction of soffits, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.11 WARRANTY

- A. Special Galvalume Substrate Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Structural failures including rupturing, or perforating.
    - b. Deterioration of metals and other materials beyond normal weathering.
  - 2. Warranty Period: 20 years and 6 months from date of Substantial Completion.
- B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.
  - 1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:

SECTION 07 50 00  
METAL ROOF PANELS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 50 00-5

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- a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
  - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
  - c. Cracking, chipping, peeling, or failure of paint to adhere to bare metal.
2. Finish Warranty Period: 20 years from date of Substantial Completion.
- C. Special Watertightness Warranty: Manufacturer's **[standard form]** **[no dollar limit form]** in which manufacturer agrees to repair or replace standing-seam metal roof panel assemblies that fail to remain watertight, including leaks, within specified warranty period.
1. Warranty Period: **[20]** years from date of Substantial Completion.
  2. Shop drawings must be provided to, reviewed, and approved by panel manufacturer prior to panel system installation.
  3. Inspections by panel system manufacturer technical representative are required. Perform first inspection when underlayment and flashing are in place and second inspection when the roof is complete.
- D. Special Installer Warranty: Furnish a written warranty signed by the Panel Applicator guaranteeing materials and workmanship for watertightness of the roofing system, flashings, penetrations, and against all leaks.
1. Warranty Period: Two years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 29 percent.
- B. Solar Reflectance Index (SRI): Three-year-aged SRI not less than **[64]** **[32]** or initial SRI not less than **[82]** **[39]** when calculated according to ASTM E 1980, based on testing identical products by a qualified testing agency.
- C. Energy Performance: Provide roof panels that are listed on the EPA/DOE's ENERGY STAR "Roof Product List" for **[low]** **[steep]**-slope roof products.
- D. Energy Performance: Provide roof panels according to one of the following when tested according to CRRC-1:
  1. Three-year, aged solar reflectance of not less than **[0.55]** **<Insert value>** and emissivity of not less than **[0.75]** **<Insert value>**.

SECTION 07 50 00  
METAL ROOF PANELS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 50 00-6

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2. Three-year, aged Solar Reflectance Index of not less than [64] <Insert value> when calculated according to ASTM E 1980.
- E. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to [ASTM E 1592] [UL 580]:
1. Wind Loads: As indicated on Drawings.
  2. Other Design Loads: [As REQUIRED BY CODE.>.
  3. Deflection Limits: For wind loads, no greater than [1/240] of the span.
  4. .
- F. Air Infiltration: Air leakage of not more than 0.06 cfm/sq. ft. (0.3 L/s per sq. m) when tested according to ASTM E 1680 and ASTM E 283 at the following test-pressure difference:
1. Test-Pressure Difference: 6.24 lbf/sq. ft. (300 Pa).
- G. Water Penetration under Static Pressure: No water penetration when tested according to ASTM E 1646 and ASTM E 331 at the following test-pressure difference:
1. Test-Pressure Difference: 15 lbf/sq. ft. (718.2 Pa).
- H. Wind-Uplift Resistance: Provide metal roof panel assemblies that comply with UL 580 for wind-uplift-resistance class indicated.
1. Uplift Rating: UL 90.
- I. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
1. Temperature Change (Range): [120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces]

## 2.2 STANDING-SEAM METAL ROOF PANELS

- A. General: Provide factory-formed metal roof panels designed to be installed by lapping and interconnecting raised side edges of adjacent panels with joint type indicated and mechanically attaching panels to supports using concealed clips in side laps. Include clips, cleats, pressure plates, and accessories required for weathertight installation.
1. Steel Panel Systems: Unless more stringent requirements are indicated, comply with ASTM E 1514.

SECTION 07 50 00  
METAL ROOF PANELS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 50 00-7

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2. Aluminum Panel Systems: Unless more stringent requirements are indicated, comply with ASTM E 1637.
- B. Vertical-Rib, Snap-Joint, Standing-Seam Metal Roof Panels : Formed with vertical ribs at panel edges and a **flat pan** between ribs; designed for sequential installation by mechanically attaching panels to supports using concealed clips located under one side of panels, engaging opposite edge of adjacent panels, and snapping panels together.
1. **Basis-of-Design Product: Subject to compliance with requirements, provide Berridge Manufacturing Company; Cee-lock 22 gauge 11 ½” coverage or comparable product by one of the following:**
    - a. AEP Span; A BlueScope Steel Company.
    - b. ATAS International, Inc.
    - c. Berridge Roofing
    - d. CENTRIA Architectural Systems.
    - e. Fabral.
    - f. Garland Company, Inc. (The).
    - g. IMETCO.
    - h. MBCI; a division of NCI Group, Inc.
    - i. McElroy Metal, Inc.
    - j. Merchant & Evans Inc.
    - k. Metal Sales Manufacturing Corporation.
    - l. VICWEST.
    - m. Exterior Finish: Kynar/Hylar.
    - n. Painted materials shall have a removable plastic film to protect the paint during roll forming, shipping and handling.
    - o. Color: **As selected by Architect from manufacturer's full range**>.
    - p. Painted materials shall have a removable plastic film to protect the paint during roll forming, shipping and handling.
  2. Clips: **Continuous cee-rib clips.**
    - a. Material: **[0.029 inch (0.74 mm)]** nominal thickness, aluminum-zinc alloy-coated steel sheet.
  3. Panel Coverage: **[11.5 inches (292 mm)]**.
  4. Panel Height: **1.5 inches (38 mm)**.

2.3 UNDERLAYMENT MATERIALS

- A. Provide Ice and Water Shield on entire roof. Self-Adhering, High-Temperature Underlayment: Provide self-adhering, cold-applied, sheet underlayment, a minimum of **40 mils (1.02 mm)** thick,

SECTION 07 50 00  
METAL ROOF PANELS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 50 00-8

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consisting of slip-resistant, polyethylene-film top surface laminated to a layer of butyl or SBS-modified asphalt adhesive, with release-paper backing. Provide primer when recommended by underlayment manufacturer.

1. Thermal Stability: Stable after testing at **240 deg F (116 deg C)**; ASTM D 1970.
2. Low-Temperature Flexibility: Passes after testing at minus **20 deg F (29 deg C)**; ASTM D 1970.
3. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. Mid-States Asphalt Quick Stick HT Pro
  - b. Polyglass Polystick MTS
  - c. Soprema Lastobond Shield HT
  - d. Tamko TW Underlayment or TW Metal & Tile Underlayment
  - e. **<Insert manufacturer's name>**.

#### 2.4 MISCELLANEOUS MATERIALS

- A. Miscellaneous Metal Subframing and Furring: ASTM C 645; cold-formed, metallic-coated steel sheet, ASTM A 653/A 653M, **G90 (Z275 hot-dip galvanized)** coating designation or ASTM A 792/A 792M, **Class AZ50 (Class AZM150)** coating designation unless otherwise indicated. Provide manufacturer's standard sections as required for support and alignment of metal panel system.
- B. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.
  1. Closures: Provide closures at eaves and ridges, fabricated of same metal as metal panels.
  2. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
- C. Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent metal panels.
- D. Gutters: 6" box gutters formed from same material as roof panels, complete with end pieces, outlet tubes, and other special pieces as required. Fabricate in minimum **96-inch (2400-mm)** long sections, of size and metal thickness according to SMACNA's "Architectural Sheet Metal Manual." Furnish gutter supports spaced a maximum of **36 inches (914 mm)** o.c., fabricated from same metal as gutters. Provide wire ball strainers of compatible metal at outlets. Finish gutters to match either **metal roof panels** or **roof fascia and rake trim**.

SECTION 07 50 00  
METAL ROOF PANELS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 50 00-9

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- E. Downspouts: 6" diameter round formed from same material as roof panels. Fabricate in 10-foot (3-m) long sections, complete with formed elbows and offsets, of size and metal thickness according to SMACNA's "Architectural Sheet Metal Manual." Finish downspouts to match gutters.
  - F. Roof Curbs: Fabricated from same material as roof panels, [0.029 inch (0.74mm)] nominal thickness; galvalume or stainless steel; supply an integral full-length cricket for curbs wider than 24 inches (610 mm) supported by a structural metal deck. Fabricate curb flashing [0.029 inch (0.74mm)]. On open framing, provide roof underlayment and decking at and about roof curb per roofing manufacturer's requirements. Maintain a minimum of 1/2 of roofing panel width on each side of roof curb, and start panels a minimum of 9 inches (229 mm) up slope of roof curb, flashing roofing panels to roof curb per roofing manufacturer's requirements.. Fabricate curb and subframing to withstand indicated loads of size and height of roof top equipment. Where required insulate roof curbs with rigid insulation.
  - G. Panel Fasteners: Zinc-coated steel, corrosion resisting steel, zinc cast head, or nylon capped steel, type and size as approved for the applicable loading requirements.
  - H. Panel Sealants: Provide sealant type recommended by manufacturer that are compatible with panel materials, are nonstaining, and do not damage panel finish.
    - 1. Joint Sealant: Silicone sealant; of type, grade, class, and use classifications required to seal joints in metal panels and remain weathertight; and as recommended in writing by metal panel manufacturer.

## 2.5 FABRICATION

- A. General: Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.
- B. On-Site Fabrication: Subject to compliance with requirements of this Section, metal panels may be fabricated on-site using factory set, non-adjustable, portable roll-forming equipment if panels are of same profile and warranted by manufacturer to be equal to factory-formed panels. Fabricate according to equipment manufacturer's written instructions and to comply with details shown.
- C. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.
- D. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.

SECTION 07 50 00  
METAL ROOF PANELS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 50 00-10

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1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
  2. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate sealant and to comply with SMACNA standards.
  3. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal recommended in writing by metal panel manufacturer.
    - a. Size: As recommended by SMACNA's "Architectural Sheet Metal Manual" or metal panel manufacturer for application, but not less than thickness of metal being secured.

## 2.6 FINISHES

- A. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in same piece are unacceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- C. Steel Panels and Accessories:
  1. Kynar/Hylar Two-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat applied by panel manufacturer on a continuous coil coating line, with a top side dry film thickness of  $0.75 \pm 0.05$  mil ( $0.0013$  mm) over  $0.2 \pm 0.05$  mil ( $0.0013$  mm) primer coat, to provide a total dry film thickness of  $0.95 \pm 0.10$  mil ( $0.024$  mm). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal panel supports, and other conditions affecting performance of the Work.

SECTION 07 50 00  
METAL ROOF PANELS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 50 00-11

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1. Examine primary and secondary roof framing to verify that rafters, purlins, angles, channels, and other structural panel support members and anchorages have been installed within alignment tolerances required by metal roof panel manufacturer.
  2. Examine solid roof sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances required by metal roof panel manufacturer.
    - a. Verify that air- or water-resistive barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
  - B. Examine roughing-in for components and systems penetrating metal panels to verify actual locations of penetrations relative to seam locations of metal panels before installation.
  - C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C 754 and metal panel manufacturer's written recommendations.

### 3.3 UNDERLAYMENT INSTALLATION

- A. Self-Adhering Sheet Underlayment: Apply primer if required by manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation. Apply ICE AND WATER SHIELF at ALL ROOF locations. Provide wrinkle free, in shingle fashion to shed water, and with end laps of not less than 6 inches (152 mm) staggered 24 inches (610 mm) between courses. Overlap side edges not less than 36 inches (914.4 mm).[ **Extend underlayment into gutter trough.**] Roll laps with roller. Cover underlayment within 14 days or as directed by the underlayment product manufacturer.
  1. Apply over the entire roof surface.
- B. Flashings: Install flashings to cover underlayment to comply with requirements specified in Section 076200 "Sheet Metal Flashing and Trim."

### 3.4 METAL PANEL INSTALLATION

- A. General: Install metal panels according to manufacturer's written instructions in orientation, sizes, and locations indicated. Install panels perpendicular to supports unless otherwise indicated.

SECTION 07 50 00  
METAL ROOF PANELS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 50 00-12

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Anchor metal panels and other components of the Work securely in place, with provisions for thermal and structural movement.

1. Shim or otherwise plumb substrates receiving metal panels to be level to **1/4 inch in 20 ft. (6 mm in 6.1 m)**.
  2. Flash and seal metal panels at perimeter of all openings. Do not begin installation until air- or water-resistive barriers and flashings that will be concealed by metal panels are installed.
  3. Locate and space fastenings in uniform vertical and horizontal alignment.
  4. Install flashing and trim as metal panel work proceeds.
  5. Panels should be continuous without end laps.
  6. Align bottoms of metal panels and fasten.
  7. Provide weathertight escutcheons for pipe- and conduit-penetrating panels.
- B. Fasteners:
1. Steel Panels: Use stainless-steel fasteners for surfaces exposed to the exterior; use galvanized-steel fasteners for surfaces exposed to the interior.
  2. Aluminum Panels: Use stainless-steel fasteners for surfaces exposed to the exterior; use stainless-steel fasteners for surfaces exposed to the interior.
- C. Anchor Clips: Anchor metal roof panels and other components of the Work securely in place, using manufacturer's approved fasteners according to manufacturers' written instructions.
- D. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action as recommended in writing by metal panel manufacturer.
- E. Standing-Seam Metal Roof Panel Installation: Fasten metal roof panels to supports with concealed clips at each standing-seam joint at location, spacing, and with fasteners recommended in writing by manufacturer.
1. Install clips to supports with self-tapping fasteners.
  2. Install pressure plates, if required, at locations indicated in manufacturer's written installation instructions.
  3. Snap Joint: Nest standing seams and fasten together by interlocking and completely engaging factory-applied vinyl weatherseal.
- F. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.
1. Install components required for a complete metal panel system including trim, copings, corners, seam covers, flashings, sealants, gaskets, fillers, and similar items. Provide types indicated by metal roof panel manufacturers; or, if not indicated, types recommended by metal roof panel manufacturer.

SECTION 07 50 00  
METAL ROOF PANELS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 50 00-13

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- G. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.
1. Install exposed flashing and trim that is without buckling and tool marks, and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and achieve waterproof and weather-resistant performance.
  2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim.
- H. Gutters: Join sections with riveted and soldered or lapped and sealed joints. Attach gutters to eave with gutter hangers spaced not more than **36 inches (914 mm)** o.c. using manufacturer's standard fasteners. Provide end closures and seal watertight with sealant. Provide for thermal expansion.
- I. Downspouts: Join sections with telescoping joints. Provide fasteners designed to hold downspouts securely **1 inch (25 mm)** away from walls; locate fasteners at top and bottom and at approximately **60 inches (1524 mm)** o.c. in between.
1. Provide elbows at base of downspouts to direct water away from building.
  2. Connect downspouts to underground drainage system indicated.
- J. Roof Curbs: Install flashing around bases where they meet metal roof panels.
- K. Pipe Flashing: Form flashing around pipe penetration and metal roof panels. Fasten and seal to metal roof panels as recommended by manufacturer.

3.5 ERECTION TOLERANCES

- A. Installation Tolerances: Shim and align metal panel units within installed tolerance of **1/4 inch in 20 feet (6 mm in 6 m)** on slope and location lines as indicated and within **1/8-inch (3-mm)** offset of adjoining faces and of alignment of matching profiles.

3.6 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect metal roof panel installation, including accessories. Report results in writing.
- B. Remove and replace applications of metal roof panels where tests and inspections indicate that they do not comply with specified requirements.
- C. Additional tests and inspections, at Contractor's expense, are performed to determine compliance of replaced or additional work with specified requirements.

SECTION 07 50 00  
METAL ROOF PANELS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 50 00-14

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- D. Prepare test and inspection reports.

3.7 CLEANING AND PROTECTION

- A. Remove temporary protective coverings and strippable films, if any, as metal panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.
- B. Replace metal panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

**END OF SECTION**

SECTION 07 42 13  
PREFORMED METAL WALL PANELS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

074213-1

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**SECTION 07 42 13  
PREFORMED METAL WALL PANELS**

**PART 1 - GENERAL**

**1.1 DESCRIPTION OF WORK**

- A. This section covers the pre-finished, pre-fabricated Architectural metal wall panel system. All metal trim, accessories, fasteners, insulation and sealants indicated on the drawings as part of this section.
- B. Drawings and general provisions of the Contract, including general and Supplementary Conditions and Division 01 Specifications, apply to this section.

**1.2 SUMMARY**

- A. Section Includes
  - 1. 1. Factory formed metal wall panels
- B. Related work specified elsewhere. (Note: select from the below or add appropriate sections)
  - 1. Metal Roof Deck: Division 5 - Metal Deck Sections
  - 2. Wood Framing and Decking: Division 6 Roof Carpentry Section
  - 3. Flashing and Trim: Division 7- Flashing and Sheet Metal
  - 4. Coping and Gravel Stops: Division 7 Roof Specialties and Accessories
  - 5. Sealants: Division 7 Joint Sealers Sections

**1.3 DEFINITIONS**

- A. Metal Wall Panel Assembly: Metal wall panels, attachment system components, miscellaneous metal framing, thermal, and accessories necessary for a complete weathertight system.

**1.4 QUALITY ASSURANCE**

- A. Petersen Aluminum Corp, Acworth, GA, 800-272-4482 products establish a minimum of quality required.
- B. Manufacturer and erector shall demonstrate experience of a minimum of five (5) years in this type of project.
- C. Sheet Metal Industry Standard: Comply with Sheet Metal and Air Conditioning Contractors National Association (SMACNA) Architectural Sheet Metal Manual.

SECTION 07 42 13  
PREFORMED METAL WALL PANELS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

074213-1

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- D. Panels shall be factory-produced only. No portable, installer-owned or installer-rented machines will be permitted.

### 1.5 SUBSTITUTIONS

- A. The material, products and equipment specified in this section establish a standard for required function, dimension, appearance and quality to be met by any proposed substitution.

### 1.6 SYSTEM DESCRIPTION

- A. Material to comply with:
  - 1. ASTM A792/A792M Standard Specification for Sheet Steel, 55% Aluminum-Zinc Alloy Coated by the Hot-Dip process

### 1.7 ROOF SYSTEM PERFORMANCE TESTING

- A. General Performance: Metal wall panels shall comply with performance requirements without failure due to defective manufacture, fabrication, installation or other defects in construction.
- B. Panels to meet:
  - 1. Metal Wall or Metal Soffit System shall be designed to meet applicable Local Building Code and the Soffit System shall have been tested by the Manufacturer per ASTM E-330 and have the applicable Load Tables published from this Air Bag testing for negative loads.

### 1.8 WARRANTIES

- A. Finish warranty: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal wall panels that show evidence of deterioration of factory-applied finish within specified warranty period.
  - 1. Exposed Panels Finish - deterioration includes the following:
    - a. Color fading more than 5 hunter units when tested according to ASTM D 2244
    - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214
    - c. Cracking, checking, peeling or failure of a paint to adhere to a bare metal.
  - 2. Warranty Period: 20 Years from the date of substantial completion

SECTION 07 42 13  
PREFORMED METAL WALL PANELS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

074213-1

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- B. Applicator shall furnish written warranty for a two (2) year period from date of substantial completion of building covering repairs required to maintain roof and flashings in watertight condition

### 1.9 SUBMITTALS

- A. Furnish detailed drawings showing profile and gauge of exterior sheets, location and type of fasteners, location, gauges, shape and method of attachment of all trim locations and types of sealants, and any other details as may be required for a weather-tight installation.
- B. Provide finish samples of all colors specified.
- C. Shop drawings: Show fabrication and installation layouts of metal wall panels or metal soffit panels, details of edge conditions, panel profiles, corners, anchorages, trim, flashings, closures and accessories, and special details. Distinguish between factory and field-assembled work
- D. Coordination Drawings: Plans, drawn to scale, on which the following are shown and coordinated with each other, based on input from installer of the items involved.
- E. LEED Submittals
  - 1. Product data for Credit MR 4.1 and credit MR 4.2: Indicating the percentages by weight of postconsumer and preconsumer recycled content for products having recycled content.

### 1.10 DELIVERY, STORAGE AND HANDLING

- A. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
- B. Deliver components, sheets, metal wall panels and other manufactured items so as not to be damaged or deformed. Package metal wall panels for protection during transportation and handling.
- C. Unload, store and erect metal wall panels in a manner to prevent bending, warping, twisting and surface damage.
- D. Stack metal wall panels on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal wall panels to ensure dryness. Do not store metal wall panels in contact with other materials that might cause staining, denting or other surface damage.
- E. Protect strippable protective coating on any metal coated product from exposure to sunlight and high humidity, except to the extent necessary for material installation.

### 1.11 PROJECT CONDITIONS

SECTION 07 42 13  
PREFORMED METAL WALL PANELS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

074213-1

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- A. Weather Limitations: proceed with installation only when existing and forecasted weather conditions permit metal wall panel work to be performed.
  - B. Field Measurements: Verify actual dimensions of construction contiguous with metal roof panels by field measurements before fabrication.

## **PART 2 - PRODUCTS**

### **2.1 PANEL DESIGN**

- A. General: Provide factory-formed metal wall panels designed for wall, soffit and fascia applications where a flush or flat appearance is desired. A round interlock leg and concealed fastening system act to improve the flush appearance while providing additional strength.
- B. Wall panels shall be Flush in 12" widths with 1" height.
- C. Panels to be produced Smooth - Factory Standard.  
Specifier note: Factory standard is smooth unless specified.  
Specifier Note: Depending on producing factory, panels may be specified with venting strips or perforated, aluminum panels only, for soffit applications. Check with local factory for capabilities.
- D. Forming: Use continuous end rolling method. No end laps on panels. No portable rollforming machines will be permitted on this project, no installer-owned or installer-rented machines will be permitted. It is the intent of the Architect to provide Factory-Manufactured panel systems only for this project.

### **2.2 ACCEPTABLE MANUFACTURERS**

- A. This project is detailed around the metal wall product of Petersen Aluminum Corp, Acworth, GA, 800-272-4482, Flush Wall Panel.

### **2.3 MATERIALS AND FINISHES**

- A. Preformed metal panels shall be fabricated of 22 GA, and shall be Herr-Voss corrective leveled for flat appearance.
- B. Color shall be Dark Bronze
- C. Finish shall be Kynar 500 or Hylar 5000 Fluorocarbon coating with a top side film thickness of 0.70 to 0.90 mil over a 0.25 to 0.3 mil prime coat to provide a total dry film thickness of 0.95 to 1.25 mil, to meet AAMA 621. Bottom side shall be coated with a primer with a dry film thickness of 0.25 mil. Finish shall conform to all tests for

SECTION 07 42 13  
PREFORMED METAL WALL PANELS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

074213-1

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adhesions, flexibility and longevity as specified by Kynar 500 or Hylar 5000 finish supplier.

- D. If Strippable coating to be applied on the pre-finished panels to the top side to protect the finish during fabrication, shipping and handling, film shall be removed before installation.
- E. Trim: Trim shall be fabricated of the same material and finish to match the profile, and will be press broken in lengths of 10 to 12 feet. Trim shall be formed only by the manufacturer of their approved dealer. Trim to be erected in overlapped condition. Use lap strips only as indicated on drawings. Miter conditions shall be factory welded material to match the sheeting.
- F. Accessories/Fasteners: Fasteners shall be of type, material, size, corrosion resistance, holding power and other properties required to fasten miscellaneous framing members to substrates. Accessories and their fasteners shall be capable of resisting the specified design wind uplift forces and shall allow for thermal movement of the wall panel system. Exposed fasteners shall not restrict free movement of the roof panel system resulting from thermal forces, except at designed points of roof panel fixity
- G. Substrate shall be Nailbase
- H. Underlayment
  - 1. On all surfaces to be covered with metal wall panels, furnish and install a 40 mil "Peel & Stick membrane", required as outlined by metal panel manufacturer. Membrane to be a minimum of 40 mil thickness, smooth, non-granular, by one of the following manufacturers:
    - a. W.R Grace "Ice & Water Shield"
    - b. Cetco Strongseal
    - c. Carlisle CCW WIP 300HT
    - d. Interwrap Titanium PSU
    - e. MFM Corp "Wind & Water Shield"
    - f. Polyguard Deck Guard HT of Polyglas HT
    - g. Tamko TW Tile and Metal Underlayment
- I. Sealants
  - 1. Provide two-part polysulfide class B non-sag type for vertical and horizontal joints or
  - 2. One part polysulfide not containing pitch or phenolic extenders or
  - 3. Exterior grade silicone sealant recommended by roofing manufacturer or
  - 4. One part non-sag, gun grade exterior type polyurethane recommended by the roofing manufacturer.

## 2.4 FABRICATION

SECTION 07 42 13  
PERFORMED METAL WALL PANELS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

074213-1

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- A. Comply with dimensions, profile limitations, gauges and fabrication details shown and if not shown, provide manufacturer's standard product fabrication.
    - 1. Max panel length is 25'.
  - B. Fabricate components of the system in factory, ready for field assembly.
  - C. Fabricate components and assemble units to comply with fire performance requirements specified.
  - D. Apply specified finishes in conformance with manufacturer's standard, and according to manufacturer's instructions.

### **PART 3 - EXECUTION**

#### **3.1 INSPECTION**

- A. Examine alignment of structural steel and related supports, primary and secondary roof framing, solid roof sheathing, prior to installation.
- B. For the record, prepare written report, endorsed by installer, listing conditions detrimental to performance of the Work.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

#### **3.2 FASTENERS**

- A. Secure units to supports
- B. Place fasteners as indicated in manufacturer's standards.

#### **3.3 INSTALLATION**

- A. Compliance: Comply with manufacturer's product data, recommendations and installation instructions for substrate verification, preparation requirements and installation.
- B. Panels shall be installed plumb and true in a proper alignment and in relation to the structural framing. The erector must have at least five years successful experience with similar applications.
- C. Install metal panels, fasteners, trim and related sealants in accordance with approved shop drawings and as may be required for a weather-tight installation.
- D. Provide uniform, neat seams.
- E. Fasteners: Conceal fasteners where possible in exposed work. Cover and seal fasteners and anchors for watertight and leakproof installation.
- F. Remove all strippable coating and provide a dry-wipe down cleaning of the panels as they are erected.

SECTION 07 42 13  
PREFORMED METAL WALL PANELS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

074213-1

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**3.4 DAMAGED MATERIAL**

- A. Upon determination of responsibility, repair or replace damaged metal panels and trim to the satisfaction of the Architect and Owner.

**3.5 CLEANING**

- A. Cleaning: Remove temporary coverings and protection of adjacent work areas. Repair or replace damage installed products. Clean installed products in accordance with manufacturer's instruction prior to owner's acceptance. Remove construction debris from project site and legally dispose of debris.

**END OF SECTION**

SECTION 07 72 00  
ROOF ACCESSORIES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 7200-1

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SECTION 07720 - ROOF ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:

- 1. Roof curbs.
- 2. Equipment supports.
- 3. Relief vents.
- 4. Ridge vents.
- 5. Heat-and-smoke vents.

- B. Related Sections include the following:

- 1. Division 5 Section "Metal Fabrications" for ladders and miscellaneous metal framing and supports.
- 2. Division 6 Section "Rough Carpentry" for roof sheathing, wood cants, and wood nailers.
- 3. Division 6 Section "Wood Decking" for wooden roof decks.
- 4. Division 7 Section "Sheet Metal Flashing and Trim" for shop- and field-fabricated metal flashing and counterflashing, scuppers, gutters and downspouts, fasciae, roof expansion-joint covers, valleys, and miscellaneous sheet metal trim and accessories.
- 5. Division 7 Section "Manufactured Roof Specialties" for fasciae, copings, gravel stops, and roof expansion-joint covers.
- 6. Division 7 Section "Roof Expansion Assemblies" for roof expansion-joint covers.
- 7. Division 7 Section "Plastic Unit Skylights" for small individual skylights.
- 8. Division 7 Sections for roofing accessories included as part of roofing Work.
- 9. Division 9 Section "Painting" for shop primers and field painting.
- 10. Division 15 Section "Power Ventilators" for power roof-mounted ventilators.

1.3 SUBMITTALS

SECTION 07 72 00  
ROOF ACCESSORIES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 7200-2

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- A. Product Data: For each type of product indicated. Include construction details, materials, dimensions of individual components and profiles, and finishes.
  - B. Shop Drawings: Show fabrication and installation details. Indicate dimensions, weights, loadings, required clearances, method of field assembly, and components. Include plans, elevations, sections, details, and attachments to other Work.
  - C. Coordination Drawings: Roof plans drawn to scale and coordinating penetrations and roof-mounted items. Show the following:
    - 1. Size and location of roof accessories specified in this Section.
    - 2. Method of attaching roof accessories to roof or building structure.
    - 3. Other roof-mounted items including mechanical and electrical equipment, ductwork, piping, and conduit.
  - D. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available for roof accessories with factory-applied color finishes.
  - E. Samples for Verification: For each type of exposed finish required, prepared on Samples in manufacturer's standard sizes, and of same thickness and material indicated for the Work. If finishes involve normal color or shade variations, include sample sets showing the full range of variations expected.

1.4 QUALITY ASSURANCE

- A. Standards: Comply with the following:
  - 1. SMACNA's "Architectural Sheet Metal Manual" details for fabrication of units, including flanges and cap flashing to coordinate with type of roofing indicated.
  - 2. NRCA's "Roofing and Waterproofing Manual" details for installing units.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Roof Curbs and Equipment Supports:
    - a. AES Industries, Inc.
    - b. Colony Custom Curbs.

SECTION 07 72 00  
ROOF ACCESSORIES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 7200-3

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- c. Commodity Products Company, Inc.
  - d. Conn-Fab Sales, Inc.
  - e. Curbs Plus, Inc.
  - f. Custom Curb, Inc.
  - g. Gieske Custom Metal Fabricators.
  - h. Goeller Enterprises.
  - i. LMCurbs.
  - j. Loren Cook Company.
  - k. Metallic Products Corporation.
  - l. Pate Co.(The).
  - m. Roof Products & Systems Corp.
  - n. ThyCurb, Inc.
  - o. Uni-Curb, Inc.
  - p. Vent Products Co., Inc.
2. Relief Vents:
- a. Aura Ventilation, Inc.
  - b. Bristolite Skylights.
  - c. Commodity Products Company, Inc.
  - d. Dowco Products Group.
  - e. Dur-Red Products, Inc.
  - f. Goeller Enterprises.
  - g. Metallic Products Corporation.
  - h. Solar Group (The).
  - i. ThyCurb, Inc.
  - j. Trimco, Inc.
  - k. Vent Products Co., Inc.
  - l. Western Canwell.
3. Ridge Vents:
- a. Air Vent, Inc.
  - b. Alcoa Building Products.
  - c. Commodity Products Company, Inc.
  - d. Cor-A-Vent, Inc.
  - e. GAF Materials Corporation.
  - f. Klauer Manufacturing Co.
  - g. Metallic Products Corporation.
  - h. Mid-America Building Products Corporation.
  - i. Niff-Corr, Inc.
  - j. Obdyke: Benjamin Obdyke, Inc.
  - k. Petersen Aluminum Corp.
  - l. Plyco Corporation.
  - m. Solar Group (The).

SECTION 07 72 00  
ROOF ACCESSORIES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 7200-4

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- n. ThyCurb, Inc.
  - o. Trimco, Inc.
  - p. Trimline Roof Ventilation Systems.
  - q. Western Canwell.
  - r. Nystrom Products Co.
  - s. O'Keeffe's Inc.
  - t. Precision Stair Corporation.
  - u. Roof Products & Systems Corp.
  - v. ThyCurb, Inc.
  - w. Trimco, Inc.
  - x. Wasco Products, Inc.
4. Roof Walkways:
- a. GS Metals Corp.
  - b. Unistrut Corporation.
5. Hatch-Type Heat-and-Smoke Roof Vents:
- a. Babcock-Davis Hatchways, Inc.
  - b. Bilco Company.
  - c. Bristolite Skylights.
  - d. Custom Curb, Inc.
  - e. Dur-Red Products, Inc.
  - f. Goeller Enterprises.
  - g. Hi Pro International, Inc.
  - h. Milcor, Inc.
  - i. Naturalite Skylight Systems.
  - j. Nystrom Products Co.
  - k. O'Keeffe's Inc.
  - l. ThyCurb, Inc.
  - m. Wasco Products, Inc.
6. Drop-out, Dome-Type Heat-and-Smoke Vents:
- a. C/S Groups.
  - b. Custom Curb, Inc.
  - c. Dur-Red Products, Inc.
  - d. Goeller Enterprises.
  - e. Hi Pro International, Inc.
  - f. Milcor, Inc.
  - g. Naturalite Skylight Systems.
  - h. O'Keeffe's Inc.
  - i. Pate Co. (The).
  - j. Plasteco, Inc.

SECTION 07 72 00  
ROOF ACCESSORIES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 7200-5

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k. Wasco Products, Inc.

2.2 MATERIALS, GENERAL

- A. Aluminum Sheet: **ASTM B 209 (ASTM B 209M)** for alclad alloy 3005H25 or alloy and temper required to suit forming operations, with mill finish, unless otherwise indicated.
- B. Extruded Aluminum: **ASTM B 221 (ASTM B 221M)** alloy 6063-T52 or alloy and temper required to suit structural and finish requirements, with mill finish, unless otherwise indicated.
- C. Galvanized Steel Sheet: ASTM A 653/A 653M with **G90 (Z275)** coating designation; commercial quality, unless otherwise indicated.
  - 1. Structural Quality: **Grade 40 (Grade 275)**, where indicated or as required for strength.
- D. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A 792/A 792M with Class **AZ-50 (AZ-150)** coating, structural quality, **Grade 40 (Grade 275)**, or as required for strength.
- E. Fasteners: Same metal as metals being fastened, or nonmagnetic stainless steel or other noncorrosive metal as recommended by manufacturer. Match finish of exposed fasteners with finish of material being fastened.
- F. Gaskets: Manufacturer's standard tubular or fingered design of neoprene, EPDM, or PVC; or flat design of foam rubber, sponge neoprene, or cork.
- G. Bituminous Coating: SSPC-Paint 12, solvent-type bituminous mastic, nominally free of sulfur and containing no asbestos fibers, compounded for **15-mil (0.4-mm)** dry film thickness per coating.
- H. Mastic Sealant: Polyisobutylene; nonhardening, nonskinning, nondrying, nonmigrating sealant.
- I. Elastomeric Sealant: Generic type recommended by unit manufacturer that is compatible with joint surfaces; ASTM C 920, Type S, Grade NS, Class 25, and Uses NT, G, A, and, as applicable to joint substrates indicated, O.
- J. Roofing Cement: ASTM D 4586, nonasbestos, fibrated asphalt cement designed for trowel application or other adhesive compatible with roofing system.

2.3 ROOF CURBS

SECTION 07 72 00  
ROOF ACCESSORIES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 7200-6

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- A. General: Provide roof curbs capable of supporting superimposed live and dead loads, including equipment loads and other construction to be supported on roof curbs. Coordinate dimensions with rough-in information or Shop Drawings of equipment to be supported.
  - B. Fabrication: Unless otherwise indicated or required for strength, fabricate units from minimum ~~0.0747-inch~~ (1.9-mm-) thick, structural-quality, hot-dip galvanized or aluminum-zinc alloy-coated steel sheet; factory primed and prepared for painting with welded or sealed mechanical corner joints.
    - 1. On ribbed or fluted metal roofs, form flange at perimeter bottom to conform to roof profile.
    - 2. Provide manufacturer's standard rigid or semirigid insulation where indicated.
    - 3. Provide formed cants and base profile coordinated with roof insulation thickness.
    - 4. Fabricate units to minimum height of 8 inches (200 mm), unless otherwise indicated.
    - 5. Sloping Roofs: Where slope of roof deck exceeds 1/4 inch per foot (1:48), fabricate curb units with water diverter or cricket and with height tapered to match slope to level tops of units.

#### 2.4 EQUIPMENT SUPPORTS

- A. General: Provide equipment supports capable of supporting superimposed live and dead loads, including equipment loads and other construction to be supported. Coordinate dimensions with rough-in information or Shop Drawings of equipment to be supported.
- B. Fabrication: Unless otherwise indicated or required for strength, fabricate units from minimum ~~0.0747-inch~~ (1.9-mm-) thick, structural-quality, hot-dip galvanized or aluminum-zinc alloy-coated steel sheet; factory primed and prepared for painting with welded or sealed mechanical corner joints.
  - 1. On ribbed or fluted metal roofs, form flange at perimeter bottom to conform to roof profile.
  - 2. Fabricate units to minimum height of 8 inches (200 mm), unless otherwise indicated.
  - 3. Sloping Roofs: Where slope of roof deck exceeds 1/4 inch per foot (1:48), fabricate support units with height tapered to match slope to level tops of units.

#### 2.5 RELIEF VENTS

- A. Low-Profile Gravity Ventilators: Provide units of sizes, style, and profile indicated; fabricated from the following materials and including the following features:
  - 1. Material: Galvanized steel sheet.
  - 2. Material: Aluminum sheet.
    - a. Finish: Prime painted.
    - b. Finish: Baked enamel.

SECTION 07 72 00  
ROOF ACCESSORIES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 7200-7

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- c. Finish: High-performance organic coating.
  - d. Finish: Clear anodic.
  - e. Finish: Color anodic.
3. Bird Screens: **1/2-inch- (13-mm-)** square mesh with **0.062-inch- (1.6-mm-)** diameter, stainless-steel wire.
  4. Insect Screens: **14-by-18 (1.5-by-1.1-mm)** mesh with **0.0123-inch- (0.3-mm-)** diameter, anodized aluminum wire in removable, rewirable frames.
  5. Manual Dampers: Designed for operation from floor directly below ventilator unit.
  6. Roof Curb Construction: Provide curb-mount units designed for installing **1-1/2-inch- (38-mm-)** thick wood curbs.
  7. Roof Curb Construction: Provide self-flashing units with integral self-supporting double-wall aluminum curb, enclosing minimum **1-inch- (25-mm-)** thick, glass-fiber board insulation (or equivalent), and with minimum **3-inch (75-mm)** roof flanges.

## 2.6 RIDGE VENTS

- A. General: Ventilating ridge cap with ventilating mesh providing a minimum net free area of **18 sq. in./ft. (380 sq. cm/m)**, of manufacturer's standard design.
  1. Aluminum: Fabricate from sheet aluminum with baffles to prevent snow and rain entering and with weep holes to allow water to drain to roof. Provide required splice plates and end caps.
    - a. Finish: Clear anodic.
    - b. Finish: Color anodic.
    - c. Finish: Baked enamel.
    - d. Finish: High-performance organic coating.

## 2.7 ROOF WALKWAYS

- A. Metal-Grating Type: Formed-metal plank gratings consisting of C-shaped channels rolled from heavy sheet metal of thickness indicated, and punched in serrated diamond shape to produce raised slip-resistant surface and drainage holes. Provide support framing, brackets, connectors, nosings, and other accessories and components needed for complete installation. Include step units for changes in elevation.
  1. Material: **0.07-inch (1.8-mm)**, structural-quality, galvanized steel sheet.
  2. For Flat Roofs: Provide resilient, hard rubber pads under each support unit to isolate supports from and protect roof membrane.

## 2.8 FINISHES, GENERAL

SECTION 07 72 00  
ROOF ACCESSORIES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 7200-8

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- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
  - B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
  - C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

## 2.9 ALUMINUM FINISHES

- A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
- B. Conversion-Coated and Factory-Primed Finish: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid-chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below).
  - 1. Organic Coating: Air-dried primer of not less than 2.0-mil (0.5-mm) dry film thickness.
- C. Class I, Clear Anodic Finish: AA-M12C22A41 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker) complying with AAMA 607.1.
- D. Class I, Color Anodic Finish: AA-M12C22A42/A44 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, integrally colored or electrolytically deposited color coating 0.018 mm or thicker) complying with AAMA 606.1 or AAMA 608.1.
  - 1. Color: As selected by Architect from the full range of industry colors and color densities.
- E. Baked-Enamel Finish: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid-chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below). Apply baked enamel complying with paint manufacturer's specifications for cleaning, conversion coating, and painting.
  - 1. Color: As selected by Architect from manufacturer's full range.
- F. High-Performance Organic Finish: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid-chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

SECTION 07 72 00  
ROOF ACCESSORIES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 7200-9

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1. Fluoropolymer Two-Coat System: Manufacturer's standard two-coat, thermocured system consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight.
  2. Fluoropolymer Three-Coat System: Manufacturer's standard three-coat, thermocured system consisting of specially formulated inhibitive primer, fluoropolymer color coat, and clear fluoropolymer topcoat, with both color coat and clear topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight.
    - a. Color and Gloss: As selected by Architect from manufacturer's full range.

## 2.10 GALVANIZED STEEL SHEET FINISHES

- A. Surface Preparation: Clean surfaces with nonpetroleum solvent so surfaces are free of oil and other contaminants. After cleaning, apply a conversion coating suited to the organic coating to be applied over it. Clean welds, mechanical connections, and abraded areas, and apply galvanizing repair paint specified below to comply with ASTM A 780.
  1. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds in steel, complying with SSPC-Paint 20.
  2. Shop Primer: Exterior galvanized metal primer per Division 9 Section "Painting."
- B. High-Performance Organic Finish: Cleaned and primed with inhibitive primer and organic coating as specified below. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
  1. Fluoropolymer Three-Coat System: Manufacturer's standard three-coat, thermocured system consisting of specially formulated inhibitive primer, fluoropolymer color coat, and clear fluoropolymer topcoat, with both color coat and clear topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 621 for coil-coated sheets.
    - a. Color and Gloss: As selected by Architect from manufacturer's full range.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. General: Comply with manufacturer's written instructions. Coordinate installation of roof accessories with installation of roof deck, roof insulation, flashing, roofing membranes, penetrations, equipment, and other construction involving roof accessories to ensure that each element of the Work performs properly and that combined elements are waterproof and weathertight. Anchor roof accessories securely to supporting structural substrates so they are capable of withstanding lateral and thermal stresses, and inward and outward loading pressures.

SECTION 07 72 00  
ROOF ACCESSORIES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 7200-10

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- B. Install roof accessory items according to construction details of NRCA's "Roofing and Waterproofing Manual," unless otherwise indicated,
  - C. Separation: Separate metal from incompatible metal or corrosive substrates, including wood, by coating concealed surfaces, at locations of contact, with bituminous coating or providing other permanent separation.
  - D. Flange Seals: Unless otherwise indicated, set flanges of accessory units in a thick bed of roofing cement to form a seal.
  - E. Cap Flashing: Where required as component of accessory, install cap flashing to provide waterproof overlap with roofing or roof flashing (as counterflashing). Seal overlap with thick bead of mastic sealant.
  - F. Operational Units: Test-operate units with operable components. Clean and lubricate joints and hardware. Adjust for proper operation.
  - G. Heat-and-Smoke Vents: Locate, install, and test according to NFPA 204M.
  - H. Ridge Vents: Install according to manufacturer's written instructions.

3.2 CLEANING AND PROTECTION

- A. Clean exposed surfaces according to manufacturer's written instructions. Touch up damaged metal coatings.

END OF SECTION 07720

SECTION 07 72 01  
GUTTERS AND DOWNSPOUTS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

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07 72 01-1

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Roof accessories of the following types:
  - 1. Gutters and downspouts.
  - 2. Gutters protection.

1.2 RELATED SECTIONS

- A. Section 06 10 00 - Rough Carpentry.

1.3 REFERENCES

1.4 SUBMITTALS

- A. Submit Shop Drawings.
- 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. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- D. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square representing actual product, color, and patterns.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum 5 year experience manufacturing similar products.
- B. Installer Qualifications: Minimum 2 year experience installing similar products.
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
  - 1. Finish areas designated by Architect.
  - 2. Do not proceed with remaining work until workmanship is approved by Architect.
  - 3. Refinish mock-up area as required to produce acceptable work.
- D. Provide 20-year no leak warranty and 20-year material warranty.

1.6 PRE-INSTALLATION MEETINGS

- A. Convene minimum two weeks prior to starting work of this section.

1.7 DELIVERY, STORAGE, AND HANDLING

SECTION 07 72 01  
GUTTERS AND DOWNSPOUTS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 72 01-2

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- A. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
  - B. Handling: Handle materials to avoid damage.

1.8 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 recommended limits.

1.9 SEQUENCING

- A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Custom
- B. Substitutions: equals accepted..
- C. Requests for substitutions will be considered.

2.2 GUTTERS AND DOWNSPOUTS

- A. Gutter: Custom formed ogee steel gutters 22 gauge galvanized and painted with Kynar finish. Provide 6" box gutter.
- B. Mitered Corners:
  - Miter Inside & Outside Corners.
- C. Downspouts & Elbows:
  - 1. Material Thickness: .22 gauge steel.
  - 2. Finish: Dark Bronze Anodized
  - 3. Profile: 4" round galvanized painted aluminum downspouts.
- D. Finish: Dark Bronze
- E. Accessories: Exposed finish to match gutters and downspouts. Material: .019 inch (0.48 mm) aluminum.
  - 1. End Caps: As required.
  - 2. Brick Ledge Jumper: As required.
  - 3. Pipe Clips: As required.
  - 4. Ferrule: As required.
  - 5. Spike: As required.
  - 6. Diamond Pipe Band : As required.
  - 7. Wrap Around Hangers: As required.

SECTION 07 72 01  
GUTTERS AND DOWNSPOUTS

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

07 72 01-3

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2.3 GUTTER PROTECTION

A. Gutter Protection:

1. Product: TruGuard Gutter Protection as manufactured by Quality Edge.
  - a. Forward Nose - Maximum amount of surface tension, 14-3/16 inches (360 mm) handling more water.
  - b. Tri-Sectioned Rib Debris Separator - Allows debris to fall off at three different points.
  - c. Patented Smart Clip Bracket using Bridge Technology - Strengthens existing gutters and gives consistent surface tension.
  - d. Sustainable Material - Recycled aluminum alloy. 0.024 inch (0.61 mm) thick.
  - e. UV Paint System - Offers the best UV protection using a Kynar paint finish resisting fading and chalking ensuring consistent surface tension.
  - f. Brackets and accessories as required for a complete functioning system.
  - g. Panel: TruGuard Gutter Protection Panels.
  - h. Panel: High-Capacity Ported Panels.

PART 3 EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install roofing accessories per manufacturer's instructions and requirements to provide performance as designed and maintain warranties offered.

3.4 PROTECTION

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

END OF SECTION

SECTION 08 11 13  
STANDARD STEEL DOORS AND FRAMES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

08 11 13-1

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**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

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

**1.2 SUMMARY**

- A. This Section includes the following products manufactured in accordance with SDI Recommended Standards:
1. Doors: Seamless, hollow or composite construction standard steel doors for interior and exterior locations.
  2. Frames: Pressed steel frames for doors, transoms, sidelights, mullions, interior glazed panels, and other interior and exterior openings of following type:
    - a. Welded unit type
  3. Assemblies: Provide standard steel door and frame assemblies as required for the following:
    - a. Labeled and fire rated.
  4. Provide factory primed doors and frames to be field painted.
  5. Provide steel frames and ¼" tempered glass at all interior doors with windows.
  5. Provide steel frames and insulated glass at all exterior doors with windows.
- B. Painting and special coating of primed doors and frames is specified in Division 9.
- C. Wood doors are specified in another Division 8 Section.
- D. Door hardware is specified in another Division 8 Section.
- E. Glass and Glazing ARE TO BE TEMPERED IN ALL DOORS.
- F. Building in of anchors and grouting of frames in masonry construction is specified in Division 4.

**1.3 SUBMITTALS**

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Product data for each type of door and frame specified, including details of construction, materials, dimensions, hardware preparation, core, label compliance, sound ratings, profiles, and finishes.
- C. Shop drawings showing fabrication and installation of standard steel doors and frames. Include details of each frame type, elevations of door design types, conditions at openings, details of construction, location and installation requirements of door and frame hardware and reinforcements, and details of joints and connections. Show anchorage and accessory items.
1. Provide schedule of doors and frames using same reference numbers for details and openings as those on contract drawings.
  2. Indicate coordinate of glazing frames and stops with glass and glazing requirements.
- D. Label Construction Certification: For door assemblies required to be fire-rated and exceeding limitations of labeled assemblies, submit manufacturer's certification that each door and frame assembly has been constructed to conform to design, materials and construction equivalent to requirements for labeled construction.

**1.4 QUALITY ASSURANCE**

- A. Provide doors and frames complying with Steel Door Institute "Recommended Specifications Standard

SECTION 08 11 13  
STANDARD STEEL DOORS AND FRAMES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

08 11 13-2

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Steel Doors and Frames" ANSI/SDI-100 and as herein specified.

- B. Fire-Rated Door Assemblies: Units that comply with NFPA 80, are identical to door and frame assemblies whose fire resistance characteristics have been determined per ASTM E 152 and which are labeled and listed by UL, Factory Mutual, Warnock Hersey, or other testing and inspecting organization acceptable to authorities having jurisdiction.

**1.5 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver doors and frames cardboard-wrapped or crated to provide protection during transit and job storage.
- B. Inspect doors and frames upon delivery for damage. Minor damages may be repaired provided refinished items are equal in all respects to new work and acceptable to Architect; otherwise, remove and replace damaged items as directed.
- C. Store doors and frames at building site under cover. Place units on minimum 4-inches high wood blocking. Avoid use of non-vented plastic or canvas shelters which could create humidity chamber. If cardboard wrapper on door becomes wet, remove carton immediately. Provide 1/4-inches space between stacked doors to promote air circulation.

**PART 2 - PRODUCTS**

**2.1 ACCEPTABLE MANUFACTURERS**

- A. Manufacturer: Subject to compliance with requirements, provide standard steel doors and frames by one of the following:

1. Standard Steel Doors and Frames:
  - a. Amweld Building Products, Inc.
  - b. Ceco Corp
  - c. Copco Door Co.
  - d. Curries Company
  - e. Deansteel Manufacturing Co.
  - f. Fenestra Corp
  - g. Kewanee Corp
  - h. Mesker Door Co.
  - i. Pioneer Industries
  - j. Premier Products, Inc. (Formerly Dittco)
  - k. Republic Builders Products
  - l. Steelcraft Manufacturing Co.
  - m. Willco Hollow Metal

**2.2 MATERIALS**

- A. Hot-Rolled Steel Sheets and Strips: Commercial quality carbon steel, pickled and oiled, complying with ASTM A 569 and ASTM A 568.

SECTION 08 11 13  
STANDARD STEEL DOORS AND FRAMES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.

08 11 13-3

WHITFIELD COUNTY ANIMAL SHELTER

SEPTEMBER 04, 2020

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- B. Cold-Rolled Steel Sheets: Commercial quality carbon steel, complying with ASTM A 366 and ASTM A 568.
- C. Galvanized Steel Sheets: Zinc-coated carbon steel sheets of commercial quality, complying with ASTM A 526, or drawing quality, ASTM A 642, hot dipped galvanized in accordance with ASTM A 525, with A60 or G60 coating designation, mill phosphatized.
- D. Supports and Anchors: Fabricate of not less than 18-gage sheet steel; galvanized where used in galvanized frames.
- E. Inserts, Bolts, and Fasteners: Manufacturer's standard units. Where items are to be built into exterior walls, hot-dip galvanize in compliance with ASTM A 153, Class C or D as applicable.
- F. Shop Applied Paint: Apply after fabrication.
  - 1. Primer: Rust-inhibitive enamel or paint, either air-drying or baking, suitable as a base for specified finish paints complying with ANSI A224.1, "Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames."

**2.3 DOORS**

- A. Provide metal doors of types and styles or grades and models indicated on drawings or schedules.
- B. Provide metal doors of SDI grades and models specified below or as indicated on drawings or schedules:
  - 1. Interior Doors: ANSI/SDI-100, Grade II, heavy-duty, Model 3 or 4, minimum 18-gage cold-rolled sheet steel faces.
  - 2. Exterior Doors: ANSI/SDI-100, Grade III, extra heavy-duty, Model 4, minimum 16-gage galvanized steel faces.
- C. Door Louvers: Provide sightproof stationary louvers for interior doors where indicated, constructed of inverted V-shaped blades formed of 24-gage cold-rolled steel set into minimum 20-gage steel frame.

**2.4 FRAMES**

- A. Provide metal frames for doors, transoms, sidelights, borrowed lights, and other openings, of types and styles as shown on drawings and schedules. Conceal fastenings, unless otherwise indicated. Fabricate frames of minimum 16-gage cold-rolled steel.
  - 1. Fabricate frames with mitered, coped, or welded corners.
  - 2. Form exterior frames from 14-gage galvanized steel.
- B. Door Silencers: Except on weatherstripped frames, drill stops to receive 3 silencers on strike jambs of single-door frames and 2 silencers on heads of double-door frames.

**2.5 FABRICATION**

- A. Fabricate steel door and frame units to be rigid, neat in appearance and free from defects, warp or buckle. Wherever practicable, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory-assembled before shipment, to assure proper assembly at project site. Comply with ANSI/SDI-100 requirements.
  - 1. Internal Construction: Manufacturer's standard honeycomb, polyurethane, polystyrene, unitized steel grid, vertical steel stiffeners, or rigid mineral fiber core with internal sound deadener on inside of face sheets where appropriate in accordance with SDI standards.
  - 2. Clearances: Not more than 1/8 inch at jambs and heads except between non-fire-rated pairs of doors not more than 1/4 inch. Not more than 3/4 inch at bottom.
- B. Fabricate exposed faces of doors and panels, including stiles and rails of nonflush units, from only cold-

SECTION 08 11 13  
STANDARD STEEL DOORS AND FRAMES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

08 11 13-4

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- rolled steel.
- C. Tolerances: Comply with SDI 117 "Manufacturing Tolerances Standard Steel Doors and Frames."
  - D. Fabricate frames, concealed stiffeners, reinforcement, edge channels, louvers and moldings from either cold-rolled or hot-rolled steel.
  - E. Fabricate exterior doors, panels, and frames from galvanized sheet steel in accordance with SDI-112. Close top and bottom edges of exterior doors as integral part of door construction or by addition of minimum 16-gage inverted steel channels.
  - F. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat or oval heads for exposed screws and bolts.
  - G. Thermal-Rated (Insulating) Assemblies: At exterior locations and elsewhere as shown or scheduled, provide doors fabricated as thermal insulating door and frame assemblies and tested in accordance with ASTM C 236 OR ASTM C 976 on fully operable door assemblies.
    - 1. Unless otherwise indicated, provide thermal-rated assemblies with U factor of 0.41 Btu/(hr x sq ft x deg F.) or better.
  - H. Hardware Preparation: Prepare doors and frames to receive mortised and concealed hardware in accordance with final Door Hardware Schedule and templates provided by hardware supplier. Comply with applicable requirements of ANSI A115 Series Specifications for door and frame preparation for hardware.
  - I. Reinforce doors and frames to receive surface-applied hardware. Drilling and tapping for surface-applied hardware may be done at project site.
  - J. Locate hardware as indicated on final shop drawings or, if not indicated, in accordance with "Recommended Locations for Builder's Hardware on Standard Steel Doors and Frames," published by Door and Hardware Institute.
  - K. Shop Painting: Clean, treat, and paint exposed surfaces of steel door and frame units, including galvanized surfaces.
    - 1. Clean steel surfaces of mill scale, rust, oil, grease, dirt, and other foreign materials before application of paint.
    - 2. Apply shop coat of prime paint of even consistency to provide a uniformly finished surface ready to receive finish paint.
  - L. Glazing Stops: Minimum 20 gage steel.
    - 1. Provide non-removable stops on outside of exterior doors and on secure side of interior doors for glass, louvers, and other panels in doors.
    - 2. Provide screw applied removable glazing beads on inside of glass, louvers, and other panels in doors.

**PART 3 - EXECUTION**

**3.1 INSTALLATION**

- A. General: Install standard steel doors, frames, and accessories in accordance with final shop drawings, manufacturer's data, and as herein specified.
- B. Placing Frames: Comply with provisions of SDI-105 "Recommended Erection Instructions For Steel Frames," unless otherwise indicated.
  - 1. Except for frames located at existing concrete, masonry or drywall installations, place frames prior to construction of enclosing walls and ceilings. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is

SECTION 08 11 13  
STANDARD STEEL DOORS AND FRAMES

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

08 11 13-5

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- completed, remove temporary braces and spreaders leaving surfaces smooth and undamaged.
2. In masonry construction, locate 3 wall anchors per jamb adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb. Acceptable anchors include masonry wire anchors and masonry Tee anchors.
  3. At existing concrete or masonry construction, provide 3 completed opening anchors per jamb adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb, set frames and secure to adjacent construction with bolts and masonry anchorage devices.
  4. Install fire-rated frames in accordance with NFPA Standard No. 80.
  5. In metal stud partitions, install at least 3 wall anchors per jamb at hinge and strike levels. In closed steel stud partitions, attach wall anchors to studs with screws.
  6. In in-place drywall partitions install knock down slip-on drywall frames.
- C. Door Installation: Fit hollow metal doors accurately in frames, within clearances specified in ANSI/SDI-100.
1. Install fire-rated doors with clearances as specified in NFPA Standard No. 30.
- 3.2 **ADJUST AND CLEAN**
- A. Prime Coat Touch-up: Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touch-up of compatible air-drying primer.
  - B. Final Adjustments: Check and readjust operating hardware items, leaving steel doors and frames undamaged and in complete and proper operating condition.

**END OF SECTION**

SECTION 085113  
ALUMINUM WINDOWS

08 51 13-1

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:

- 1. Exterior operable aluminum windows.

- a. Glazing is retained mechanically with gaskets on four sides. WINDOWS TO BE CONFIGURED AS SHOWN ON ELEVATIONS. SINGLE-HUNG OPERABLE BOTTOM SASH. COLOR TO BE SELECTED FROM MANUFACTURER'S FULL RANGE OF COLORS.

- B. Related Sections include the following:

- 1. Division 7 Section "Building Insulation" for insulation materials field installed with aluminum-framed systems.
  - 2. Division 7 Section "Joint Sealants" for installation of joint sealants installed with aluminum-framed systems and for sealants to the extent not specified in this Section.
  - 3. Division 8 Section "Door Hardware" for hardware to the extent not specified in this Section.
  - 4. Division 8 Section "Glazing" for glazing requirements to the extent not specified in this Section.

1.3 PERFORMANCE REQUIREMENTS

- A. General: Provide aluminum-framed systems, including anchorage, capable of withstanding, without failure, the effects of the following:

- 1. Structural loads.

SECTION 085113  
ALUMINUM WINDOWS

08 51 13-2

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

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2. Thermal movements.
  3. Movements of supporting structure indicated on Drawings including, but not limited to, story drift and deflection from uniformly distributed and concentrated live loads.
  4. Dimensional tolerances of building frame and other adjacent construction.
  5. Failure includes the following:
    - a. Deflection exceeding specified limits.
    - b. Thermal stresses transferred to building structure.
    - c. Framing members transferring stresses, including those caused by thermal and structural movements, to glazing.
    - d. Glazing-to-glazing contact.
    - e. Noise or vibration created by wind and thermal and structural movements.
    - f. Loosening or weakening of fasteners, attachments, and other components.
    - g. Sealant failure.
    - h. Failure of operating units to function properly.
- B. Structural Sealant: Capable of withstanding tensile and shear stresses imposed by aluminum-framed systems without failing adhesively or cohesively. Provide sealant that fails cohesively before sealant releases from substrate when tested for adhesive compatibility with each substrate and joint condition required.
1. Adhesive failure occurs when sealant pulls away from substrate cleanly, leaving no sealant material behind.
  2. Cohesive failure occurs when sealant breaks or tears within itself but does not separate from each substrate because sealant-to-substrate bond strength exceeds sealant's internal strength.
- C. Structural-Sealant Joints: Designed to produce tensile or shear stress in structural-sealant joints of less than 20 psi (138 kPa).
- D. Structural Loads:
1. Wind Loads: [As indicated on Drawings] .
  2. Seismic Loads: [As indicated on Drawings] .

SECTION 085113  
ALUMINUM WINDOWS

08 51 13-3

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

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- E. Deflection of Framing Members:
1. Deflection Normal to Wall Plane: Limited to [1/175 of clear span for spans up to 13 feet 6 inches (4.1 m) and to 1/240 of clear span plus 1/4 inch (6.35 mm) for spans greater than 13 feet 6 inches (4.1 m)] or an amount that restricts edge deflection of individual glazing lites to 3/4 inch (19 mm), whichever is less.
  2. Deflection Parallel to Glazing Plane: Limited to [1/360 of clear span or 1/8 inch (3.2 mm), whichever is smaller] [amount not exceeding that which reduces glazing bite to less than 75 percent of design dimension and that which reduces edge clearance between framing members and glazing or other fixed components directly below to less than 1/8 inch (3.2 mm) and clearance between members and operable units directly below to less than 1/16 inch (1.5 mm)].
- F. Structural-Test Performance: Provide aluminum-framed systems tested according to ASTM E 330 as follows:
1. When tested at positive and negative wind-load design pressures, systems do not evidence deflection exceeding specified limits.
  2. When tested at [150] percent of positive and negative wind-load design pressures, systems, including anchorage, do not evidence material failures, structural distress, and permanent deformation of main framing members exceeding [0.2] percent of span.
  3. Test Durations: As required by design wind velocity but not less than 10 seconds.
- G. Windborne-Debris-Impact-Resistance-Test Performance: Provide aluminum-framed systems that pass large and small missile-impact tests and cyclic-pressure tests according to.
- H. Story Drift: Provide aluminum-framed systems that accommodate design displacement of adjacent stories indicated.
1. Design Displacement.
  2. Test Performance: Meeting criteria for passing based on building occupancy type when tested according to AAMA 501.4 at design displacement[ and 1.5 times design displacement].

SECTION 085113  
ALUMINUM WINDOWS

08 51 13-4

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

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- I. Thermal Movements: Provide aluminum-framed systems that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
  2. Test Performance: No buckling; stress on glass; sealant failure; excess stress on framing, anchors, and fasteners; or reduction of performance when tested according to AAMA 501.5.
    - a. Test High Exterior Ambient-Air Temperature: That which produces an exterior metal-surface temperature of [180 deg F (82 deg C)] .
    - b. Test Low Exterior Ambient-Air Temperature: [0 deg F (minus 18 deg C)] .
    - c. Test Interior Ambient-Air Temperature: [75 deg F (24 deg C)] ASTM E 283 requires using a static-air-pressure difference of 1.57 lbf/sq. ft. (75 Pa), unless otherwise indicated, which is equivalent to a 25-mph (40-km/h) wind. Static-air-pressure difference of 6.24 lbf/sq. ft. (300 Pa) is equivalent to a 50-mph (80-km/h) wind.
- J. Air Infiltration: Provide aluminum-framed systems with maximum air leakage through fixed glazing and framing areas of [0.06 cfm/sq. ft. (0.03 L/s per sq. m)] of fixed wall area when tested according to ASTM E 283 at a minimum static-air-pressure difference of [1.57 lbf/sq. ft. (75 Pa)] [6.24 lbf/sq. ft. (300 Pa)] .
- K. Water Penetration Under Static Pressure: Provide aluminum-framed systems that do not evidence water penetration through fixed glazing and framing areas when tested according to ASTM E 331 at a minimum static-air-pressure difference of [20 percent of positive wind-load design pressure, but not less than 6.24 lbf/sq. ft. (300 Pa)] .
- L. Water Penetration Under Dynamic Pressure: Provide aluminum-framed systems that do not evidence water leakage through fixed glazing and framing areas when tested according to AAMA 501.1 under dynamic pressure equal to [20 percent of positive wind-load design pressure, but not less than 6.24 lbf/sq. ft. (300 Pa)] .

SECTION 085113  
ALUMINUM WINDOWS

08 51 13-5

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

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1. Maximum Water Leakage: [According to AAMA 501.1] [No uncontrolled water penetrating systems or appearing on systems' normally exposed interior surfaces from sources other than condensation]. Water controlled by flashing and gutters that is drained to exterior and cannot damage adjacent materials or finishes is not considered water leakage.
  
- M. Condensation Resistance: Provide aluminum-framed systems with fixed glazing and framing areas having condensation-resistance factor (CRF) of not less than [53] <Insert CRF> when tested according to AAMA 1503.
  
- N. Average Thermal Conductance: Provide aluminum-framed systems with fixed glazing and framing areas having average U-factor of not more than [0.69 Btu/sq. ft. x h x deg F (3.92 W/sq. m x K)] when tested according to AAMA 1503.
  
- O. Sound Transmission: Provide aluminum-framed systems with fixed glazing and framing areas having minimum STC [32] according to ASTM E 413 and an OITC [26] according to ASTM E 1332, as determined by testing according to ASTM E 90.

1.4 SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of product indicated.
  
- B. Shop Drawings: For aluminum-framed systems. Include plans, elevations, sections, details, and attachments to other work.
  1. Include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
  2. Include details of provisions for system expansion and contraction and for draining moisture occurring within the system to the exterior.
  3. For entrances, include hardware schedule and indicate operating hardware types, functions, quantities, and locations.
  
- C. Samples for Initial Selection: For units with factory-applied color finishes.

SECTION 085113  
ALUMINUM WINDOWS

08 51 13-6

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

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- D. Samples for Verification: For each type of exposed finish required, in manufacturer's standard sizes.
- E. Fabrication Sample: Of each vertical-to-horizontal intersection of systems, made from 12-inch (300-mm) lengths of full-size components and showing details of the following:
  - 1. Joinery.
  - 2. Anchorage.
  - 3. Expansion provisions.
  - 4. Glazing.
  - 5. Flashing and drainage.
- F. Welding certificates.
- G. Qualification Data: For Installer [and testing agency].
- H. Preconstruction Sealant Test Reports: For structural-sealant-glazed systems, compatibility and adhesion test reports from sealant manufacturer indicating that materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with sealants. Include sealant manufacturer's interpretation of test results for sealant performance and recommendations for primers and substrate preparation needed to obtain adhesion.
- I. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for aluminum-framed systems.
- J. Structural-Sealant-Glazing Quality-Control Program: Developed specifically for Project.
- K. Structural-Sealant-Glazing Quality-Control Program Reports: Documenting quality-control procedures and verifying results for aluminum-framed systems.
- L. Field quality-control test and inspection reports.
- M. Maintenance Data: For aluminum-framed systems to include in maintenance manuals.
- N. Warranties: Special warranties specified in this Section.

1.5 QUALITY ASSURANCE

SECTION 085113  
ALUMINUM WINDOWS

08 51 13-7

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

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- A. Installer Qualifications: Capable of assuming engineering responsibility and performing work of this Section and who is acceptable to manufacturer.
  - 1. Engineering Responsibility: Preparation of data for aluminum-framed systems including Shop Drawings based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project and submission of reports of tests performed on manufacturer's standard assemblies.
    - a. Include structural-sealant-glazing quality-control program development and reporting complying with ASTM C 1401 recommendations including, but not limited to, system material qualification procedures, preconstruction sealant-testing program, and procedures and intervals for system fabrication and installation reviews and checks.
  
- B. Testing Agency Qualifications: An independent agency qualified according to ASTM E 699 for testing indicated.
  
- C. Product Options: Information on Drawings and in Specifications establishes requirements for systems' aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or more methods including preconstruction testing, field testing, and in-service performance.
  - 1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.
  
- D. Preconstruction Sealant Testing: For structural-sealant-glazed systems, perform sealant manufacturer's standard tests for compatibility and adhesion of sealants with each material that will come in contact with sealants and each condition required by aluminum-framed systems.
  - 1. Test a minimum of five samples of each metal, glazing, and other material.
  - 2. Prepare samples using techniques and primers required for installed systems.
  - 3. For materials that fail tests, determine corrective measures required to prepare each material to ensure compatibility with and adhesion of sealants, including, but not limited to,

SECTION 085113  
ALUMINUM WINDOWS

08 51 13-8

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

---

specially formulated primers. After performing these corrective measures on the minimum number of samples required for each material, retest materials.

- E. Accessible Entrances: Comply with the Georgia Accessibility Code, [the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG)."] [ICC/ANSI A117.1.] [FED-STD-795, "Uniform Federal Accessibility Standards."] Delete first paragraph below if no welding. Retain "Welding certificates" Paragraph in "Submittals" Article if retaining below.
- F. Welding: Qualify procedures and personnel according to AWS D1.2, "Structural Welding Code-- Aluminum."
- G. Structural-Sealant Glazing: Comply with recommendations in ASTM C 1401, "Guide for Structural Sealant Glazing."
- H. Structural-Sealant Joints: Design reviewed and approved by structural-sealant manufacturer.
- I. Mockups: Build mockups to demonstrate aesthetic effects and set quality standards for fabrication and installation.
  - 1. Build mockup of typical wall area as shown on Drawings.
  - 2. Field testing shall be performed on mockups according to requirements in Part 3 "Field Quality Control" Article.
  - 3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 PROJECT CONDITIONS

- A. Field Measurements: Verify actual locations of structural supports for aluminum-framed systems by field measurements before fabrication and indicate measurements on Shop Drawings.
  - 1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating aluminum-framed systems without field measurements. Coordinate construction to ensure that actual dimensions correspond to established dimensions.

SECTION 085113  
ALUMINUM WINDOWS

08 51 13-9

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

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1.7 WARRANTY

A. Special Assembly Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of aluminum-framed systems that do not comply with requirements or that deteriorate as defined in this Section within specified warranty period.

1. Failures include, but are not limited to, the following:

- a. Structural failures including, but not limited to, excessive deflection.
- b. Noise or vibration caused by thermal movements.
- c. Deterioration of metals[, metal finishes,] and other materials beyond normal weathering.
- d. Adhesive or cohesive sealant failures.
- e. Water leakage through fixed glazing and framing areas.
- f. Failure of operating components to function properly.

2. Warranty Period: 10 years from date of Substantial Completion.

B. Special Finish Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components on which finishes fail within specified warranty period. Warranty does not include normal weathering.

1. Warranty Period: [20] years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product: The design for aluminum-framed systems is based on per the manufacturer listed below.. Color to be Dark Bronze. Subject to compliance with requirements, provide the named product or a comparable product by one of the following:

1. Quaker – Keystone Series Double Hung. Provide Glass green-tinted, lowE, Argon gas, 5/8" insulated. Single-hung and fixed windows with simulated true-divided lite with configurations as shown on drawings.
2. Equal

SECTION 085113  
ALUMINUM WINDOWS

08 51 13-10

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

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2.2 MATERIALS

- A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish to be *Bronze Anodized*.
1. Sheet and Plate: **ASTM B 209** (ASTM B 209M).
  2. Extruded Bars, Rods, Profiles, and Tubes: **ASTM B 221** (ASTM B 221M).
  3. Extruded Structural Pipe and Tubes: ASTM B 429.
  4. Structural Profiles: ASTM B 308/B 308M.
  5. Welding Rods and Bare Electrodes: AWS A5.10/A5.10M.
- B. Steel Reinforcement: With manufacturer's standard corrosion-resistant primer complying with SSPC-PS Guide No. 12.00 applied immediately after surface preparation and pretreatment. Select surface preparation methods according to recommendations in SSPC-SP COM and prepare surfaces according to applicable SSPC standard.
1. Structural Shapes, Plates, and Bars: ASTM A 36/A 36M.
  2. Cold-Rolled Sheet and Strip: ASTM A 1008/A 1008M.
  3. Hot-Rolled Sheet and Strip: ASTM A 1011/A 1011M.

2.3 FRAMING SYSTEMS

- A. Framing Members: Manufacturer's standard extruded-aluminum framing members of thickness required and reinforced as required to support imposed loads.
1. Construction: [Framing members are composite assemblies of two separate extruded-aluminum components permanently bonded by an elastomeric material of low thermal conductance]
- B. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.
- C. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.

SECTION 085113  
ALUMINUM WINDOWS

08 51 13-11

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

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1. Where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration, use self-locking devices.
  2. Reinforce members as required to receive fastener threads.
  3. Use exposed fasteners with countersunk Phillips screw heads, finished to match framing system.
- D. Concrete and Masonry Inserts: Hot-dip galvanized cast-iron, malleable-iron, or steel inserts complying with ASTM A 123/A 123M or ASTM A 153/A 153M requirements.
- E. Flashing: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding flashing compatible with adjacent materials. Form exposed flashing from sheet aluminum finished to match framing and of sufficient thickness to maintain a flat appearance without visible deflection.
- F. Framing System Gaskets and Sealants: Manufacturer's standard recommended by manufacturer for joint type.

2.4 GLAZING SYSTEMS

- A. Glazing: As specified in Division 8 Section "Glazing."
- B. Glazing Gaskets: Manufacturer's standard compression types, replaceable, molded or extruded, that maintain uniform pressure and watertight seal.
- C. Spacers and Setting Blocks: Manufacturer's standard elastomeric types.
- D. Bond-Breaker Tape: Manufacturer's standard TFE-fluorocarbon or polyethylene material to which sealants will not develop adhesion.
- E. Glazing Sealants: For structural-sealant-glazed systems, as recommended by manufacturer for joint type and as follows:
1. Structural Sealant: ASTM C 1184, neutral-curing silicone formulation compatible with system components with which it comes in contact, specifically formulated and tested for use as structural sealant, and approved by structural-sealant manufacturer for use in aluminum-framed systems indicated.
    - a. Color: Black.

SECTION 085113  
ALUMINUM WINDOWS

08 51 13-12

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

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2. Weather-seal Sealant: ASTM C 920 for Type S, Grade NS, Class 25, Uses NT, G, A, and O; neutral-curing silicone formulation compatible with structural sealant and other system components with which it comes in contact; and recommended by structural- and weather-seal-sealant and aluminum-framed system manufacturers for this use.

a. Color: Matching structural sealant.

## 2.5 ACCESSORY MATERIALS

A. Insulating Materials: As specified in Division 7 Section "Building Insulation."

B. Joint Sealants: For installation at perimeter of aluminum-framed systems, as specified in Division 7 Section "Joint Sealants."

C. Bituminous Paint: Cold-applied asphalt-mastic paint complying with SSPC-Paint 12 requirements except containing no asbestos, formulated for 30-mil (0.762-mm) thickness per coat.

## 2.6 FABRICATION

A. Form aluminum shapes before finishing.

B. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.

C. Framing Members, General: Fabricate components that, when assembled, have the following characteristics:

1. Profiles that are sharp, straight, and free of defects or deformations.

2. Accurately fitted joints with ends coped or mitered.

3. Means to drain water passing joints, condensation occurring within framing members, and moisture migrating within the system to exterior.

4. Physical and thermal isolation of glazing from framing members.

5. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.

6. Provisions for field replacement of glazing from [exterior] [interior] [interior for vision glass and exterior for spandrel glazing or panels].

SECTION 085113  
ALUMINUM WINDOWS

08 51 13-13

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

---

- 7. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.
  
- D. Mechanically Glazed Framing Members: Fabricate for flush glazing (without projecting stops).
  
- E. Structural-Sealant-Glazed Framing Members: Include accommodations for using temporary support device (dutchman) to retain glazing in place while structural sealant cures.
  
- F. Storefront Framing: Fabricate components for assembly using shear-block system.

2.7 ALUMINUM FINISHES

Aluminum Storefront and Doors to be *Bronze Anodized* finish.

- A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
  
- B. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
  
- C. Class II, Clear Anodic Finish: AA-M12C22A31 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class II, clear coating 0.010 mm or thicker) complying with AAMA 611.
  
- D. Class I, Clear Anodic Finish: AA-M12C22A41 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker) complying with AAMA 611.
  
- E. Class II, Color Anodic Finish: AA-M12C22A32/A34 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class II, integrally colored or electrolytically deposited color coating 0.010 mm or thicker) complying with AAMA 611.
  
- F. Class I, Color Anodic Finish: AA-M12C22A42/A44 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, integrally colored or electrolytically deposited color coating 0.018 mm or thicker) complying with AAMA 611.

SECTION 085113  
ALUMINUM WINDOWS

08 51 13-14

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

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PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.
  - 1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General:
  - 1. Comply with manufacturer's written instructions.
  - 2. Do not install damaged components.
  - 3. Fit joints to produce hairline joints free of burrs and distortion.
  - 4. Rigidly secure non-movement joints.
  - 5. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration.
  - 6. Seal joints watertight, unless otherwise indicated.
- B. Metal Protection:
  - 1. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape or installing nonconductive spacers as recommended by manufacturer for this purpose.
  - 2. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.
- C. Install components to drain water passing joints, condensation occurring within framing members, and moisture migrating within the system to exterior.
- D. Set continuous sill members and flashing in full sealant bed as specified in Division 7 Section "Joint Sealants" and to produce weather-tight installation.
- E. Install components plumb and true in alignment with established lines and grades, without warp or rack.

SECTION 085113  
ALUMINUM WINDOWS

08 51 13-15

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

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- F. Install glazing as specified in Division 8 Section "Glazing."
  - 1. Structural-Sealant Glazing:
    - a. Prepare surfaces that will contact structural sealant according to sealant manufacturer's written instructions to ensure compatibility and adhesion. Preparation includes, but is not limited to, cleaning and priming surfaces.
    - b. Install weather-seal sealant according to Division 7 Section "Joint Sealants" and according to sealant manufacturer's written instructions to produce weatherproof joints. Install joint filler behind sealant as recommended by sealant manufacturer.
  
- G. Entrances: Install to produce smooth operation and tight fit at contact points.
  - 1. Exterior Entrances: Install to produce tight fit at weather stripping and weathertight closure.
  - 2. Field-Installed Hardware: Install surface-mounted hardware according to hardware manufacturers' written instructions using concealed fasteners to greatest extent possible.
  
- H. Install insulation materials as specified in Division 7 Section "Building Insulation."
  
- I. Install perimeter joint sealants as specified in Division 7 Section "Joint Sealants" and to produce weather-tight installation.
  
- J. Erection Tolerances: Install aluminum-framed systems to comply with the following maximum tolerances:
  - 1. Location and Plane: Limit variation from true location and plane to **1/8 inch in 12 feet (3 mm in 3.7 m)**; **1/4 inch (6 mm)** over total length.
  - 2. Alignment:
    - a. Where surfaces abut in line, limit offset from true alignment to **1/16 inch (1.5 mm)**.
    - b. Where surfaces meet at corners, limit offset from true alignment to **1/32 inch (0.8 mm)**.
  - 3. Diagonal Measurements: Limit difference between diagonal measurement to **1/8 inch (3 mm)**.

SECTION 085113  
ALUMINUM WINDOWS

08 51 13-16

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

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3.3 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.
  
- B. Testing Services: Testing and inspecting of representative areas to determine compliance of installed systems with specified requirements shall take place as follows and in successive stages as indicated on Drawings. Do not proceed with installation of the next area until test results for previously completed areas show compliance with requirements.
  - 1. Structural-Sealant Compatibility and Adhesion: Structural sealant shall be tested according to recommendations in ASTM C 1401.
    - a. Destructive test method, Method A, Hand Pull Tab (Destructive) in ASTM C 1401, Appendix X2 shall be used.
      - 1) A minimum of [two] [four] [six] <Insert number> areas on each building face shall be tested.
      - 2) Repair installation areas damaged by testing.
  
  - 2. Structural-Sealant Glazing Inspection: After installation of aluminum-framed systems is complete, structural-sealant glazing shall be inspected and evaluated according to ASTM C 1401 recommendations.
  
  - 3. Air Infiltration: Areas shall be tested for air leakage of [1.5 times the rate specified for laboratory testing under Part 1 "Performance Requirements" Article, but not more than 0.09 cfm/sq. ft. (0.03 L/s per sq. m),] <Insert rate> of fixed wall area when tested according to ASTM E 783 at a minimum static-air-pressure difference of [1.57 lbf/sq. ft. (75 Pa)] [6.24 lbf/sq. ft. (300 Pa)] <Insert pressure>.
  
  - 4. Water Penetration: Areas shall be tested according to ASTM E 1105 at a minimum [uniform] [and] [cyclic] static-air-pressure difference of [0.67 times the static-air-pressure difference specified for laboratory testing under Part 1 "Performance Requirements" Article, but not less than 4.18 lbf/sq. ft. (200 Pa),] <Insert pressure> and shall not evidence water penetration.

SECTION 085113  
ALUMINUM WINDOWS

08 51 13-17

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.  
WHITFIELD COUNTY ANIMAL SHELTER  
SEPTEMBER 04, 2020

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5. Water Spray Test: Before installation of interior finishes has begun, a minimum area of **75 feet (23 m)** by 1 story of aluminum-framed systems designated by Architect shall be tested according to AAMA 501.2 and shall not evidence water penetration.
- C. Repair or remove work where test results and inspections indicate that it does not comply with specified requirements.
- D. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.4 ADJUSTING

- A. Entrances: Adjust operating hardware for smooth operation according to hardware manufacturers' written instructions.

END OF SECTION 08510