

Project Manual

Bid Number 22B-2240

Project Number 22-020

Addition & Renovations Work

at

Winnebago County Animal Services

for

Winnebago County

Rockford, Illinois



**RICHARD L. JOHNSON
ASSOCIATES | ARCHITECTS**

4703 Charles Street
(815) 398-1231

Rockford, IL 61108
www.rljarch.com

PROJECT MANUAL

WINNEBAGO COUNTY BID NO. 22B-2240

RLJA PROJECT NO. 2022-020

**ADDITION & RENOVATIONS WORK
AT
WINNEBAGO COUNTY ANIMAL SERVICES
FOR
WINNEBAGO COUNTY
ROCKFORD, ILLINOIS**

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AUGUST 16, 2022

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DIVISION 00– PROCEDURAL & CONTRACTING REQUIREMENTS

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ADVERTISEMENT FOR BIDS

Sealed bids will be received by Winnebago County Purchasing Department, 404 Elm Street, Room 202, Rockford, IL 61101 for Addition & Renovations Work at Winnebago County Animal Services for Winnebago County-

The Owner's Bid Number is Bid #22B-2240.

The project consists of a single Contract for the Addition & Renovations Work at Winnebago County Animal Services Project designed by:
Richard L. Johnson Associates Architects (815) 398-1231.

Bids will be received by Purchasing Department 404 Elm Street, Room 202, Rockford, Illinois, 61101 until **2:00 P.M., Tuesday, September 13, 2022**. Immediately thereafter, the Bids will be opened in public, read aloud and recorded. Bids will be held good and may not be withdrawn for a period of ninety (90) calendar days.

General Contractor Bidders are **required** to attend a **MANDATORY** Pre-Bid meeting, scheduled for **9:00 A.M., Tuesday, August 30, 2022**, at Winnebago County Animal Services building, 4715 N. Main Street, Rockford, IL 61103. Subcontractors may voluntarily attend the Pre-Bid meeting.

General Contractor Bidders are **required** to make a visit to the site to survey existing conditions. These visits are **MANDATORY** for General Contractor Bidders and a pre-condition for Bidding. Visits **must** be acknowledged on the Bid Form by Bidder.

All requests for clarification and/or interpretations shall be made in writing to the Architect by the date specified and will be answered by written Addendum, when appropriate.

Commencement of the Work of this Contract shall begin no sooner than October 3, 2022 and be completed no later than September 8, 2023.

Owner reserves the right to waive any irregularities and to accept any or reject all bids when in the opinion of the Owner, such action will serve the best interest of the County.

Bids on all Work of this Contract shall be subject to the provisions of The Winnebago County Purchasing Ordinance. Compliance with this ordinance must be submitted to the Winnebago County Director of Purchasing by Contractor prior to start of construction. Each craft, type of worker and mechanic needed to execute the Contract shall be paid the prevailing wage rate for the locality in which the work is performed, in accordance with all federal laws and laws of the State as well as local ordinances and regulations applicable to the work hereunder and having force of law.

Bidders shall be required to complete all forms included within the Bid Form.

Bid Documents are on file for reference at:

Richard L. Johnson, Associates Architects.
Rockford, IL

Northern Illinois Building Contractors Association.

Rockford, IL

Bid Documents may be obtained free of charge from Architect, Richard L. Johnson Associates Architects, 4703 Charles Street, Rockford, IL 61108. 2 sets of Bidding Documents will be issued to Bidding Contractors.

Bid Documents are also available for **download online** at www.rljarch.com. Complete document request form under “Contractors” and email it to Char Holmberg at holmberg@rljarch.com.

Interpretations may be obtained from

Allan Johnson
Richard L. Johnson Associates Architects
Phone (815) 398-1231

By Ann Johns
Director of Purchasing
County of Winnebago
404 Elm Street, Room 202
Rockford, IL 61101

AIA® Document A701™ – 2018

Instructions to Bidders

for the following Project:

(Name, location, and detailed description)

Addition and Renovations at
Winnebago County Animal Services
4715 N. Main Street
Rockford, IL 61103

THE OWNER:

(Name, legal status, address, and other information)

Winnebago County
404 Elm Street, Room 202
Rockford, IL 61101

THE ARCHITECT:

(Name, legal status, address, and other information)

Richard L. Johnson Associates, Inc
4703 Charles Street
Rockford, IL 61108

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ADDITIONS AND DELETIONS:

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

FEDERAL, STATE, AND LOCAL LAWS MAY IMPOSE REQUIREMENTS ON PUBLIC PROCUREMENT CONTRACTS. CONSULT LOCAL AUTHORITIES OR AN ATTORNEY TO VERIFY REQUIREMENTS APPLICABLE TO THIS PROCUREMENT BEFORE COMPLETING THIS FORM.

It is intended that AIA Document G612™–2017, Owner's Instructions to the Architect, Parts A and B will be completed prior to using this document.

ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the Proposed Contract Documents. The Bidding Requirements consist of the advertisement or invitation to bid, Instructions to Bidders, supplementary instructions to bidders, the bid form, and any other bidding forms. The Proposed Contract Documents consist of the unexecuted form of Agreement between the Owner and Contractor and that Agreement's Exhibits, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda, and all other documents enumerated in Article 8 of these Instructions.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, or in other Proposed Contract Documents apply to the Bidding Documents.

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

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

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

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from, or that does not change, the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

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

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

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

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 By submitting a Bid, the Bidder represents that:

- .1 the Bidder has read and understands the Bidding Documents;
- .2 the Bidder understands how the Bidding Documents relate to other portions of the Project, if any, being bid concurrently or presently under construction;
- .3 the Bid complies with the Bidding Documents;
- .4 the Bidder has visited the site, become familiar with local conditions under which the Work is to be performed, and has correlated the Bidder's observations with the requirements of the Proposed Contract Documents;
- .5 the Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception; and
- .6 the Bidder has read and understands the provisions for liquidated damages, if any, set forth in the form of Agreement between the Owner and Contractor.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 Distribution

§ 3.1.1 Bidders shall obtain complete Bidding Documents, as indicated below, from the issuing office designated in the advertisement or invitation to bid, for the deposit sum, if any, stated therein.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall obtain Bidding Documents.)

§ 3.1.2 Any required deposit shall be refunded to Bidders who submit a bona fide Bid and return the paper Bidding Documents in good condition within ten days after receipt of Bids. The cost to replace missing or damaged paper documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the paper Bidding Documents, and the Bidder's deposit will be refunded.

§ 3.1.3 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the advertisement or invitation to bid, or in supplementary instructions to bidders.

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

§ 3.1.5 The Bidding Documents will be available for the sole purpose of obtaining Bids on the Work. No license or grant of use is conferred by distribution of the Bidding Documents.

§ 3.2 Modification or Interpretation of Bidding Documents

§ 3.2.1 The Bidder shall carefully study the Bidding Documents, shall examine the site and local conditions, and shall notify the Architect of errors, inconsistencies, or ambiguities discovered and request clarification or interpretation pursuant to Section 3.2.2.

§ 3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Architect at least seven days prior to the date for receipt of Bids.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall submit requests for clarification and interpretation.)

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

§ 3.3 Substitutions

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

§ 3.3.2 Substitution Process

§ 3.3.2.1 Written requests for substitutions shall be received by the Architect at least ten days prior to the date for receipt of Bids. Requests shall be submitted in the same manner as that established for submitting clarifications and interpretations in Section 3.2.2.

§ 3.3.2.2 Bidders shall submit substitution requests on a Substitution Request Form if one is provided in the Bidding Documents.

§ 3.3.2.3 If a Substitution Request Form is not provided, requests shall include (1) the name of the material or equipment specified in the Bidding Documents; (2) the reason for the requested substitution; (3) a complete description of the proposed substitution including the name of the material or equipment proposed as the substitute, performance and test data, and relevant drawings; and (4) any other information necessary for an evaluation. The request shall include a statement setting forth changes in other materials, equipment, or other portions of the Work, including changes in the work of other contracts or the impact on any Project Certifications (such as LEED), that will result from incorporation of the proposed substitution.

§ 3.3.3 The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

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

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

§ 3.4 Addenda

§ 3.4.1 Addenda will be transmitted to Bidders known by the issuing office to have received complete Bidding Documents.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Addenda will be transmitted.)

§ 3.4.2 Addenda will be available where Bidding Documents are on file.

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

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

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 Preparation of Bids

§ 4.1.1 Bids shall be submitted on the forms included with or identified in the Bidding Documents.

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

§ 4.1.3 Sums shall be expressed in both words and numbers, unless noted otherwise on the bid form. In case of discrepancy, the amount entered in words shall govern.

§ 4.1.4 Edits to entries made on paper bid forms must be initialed by the signer of the Bid.

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

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall neither make additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name and legal status of the Bidder. As part of the documentation submitted with the Bid, the Bidder shall provide evidence of its legal authority to perform the Work in the jurisdiction where the Project is located. Each copy of the Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further name the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached, certifying the agent's authority to bind the Bidder.

§ 4.1.8 A Bidder shall incur all costs associated with the preparation of its Bid.

§ 4.2 Bid Security

§ 4.2.1 Each Bid shall be accompanied by the following bid security:

(Insert the form and amount of bid security.)

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

§ 4.2.3 If a surety bond is required as bid security, it shall be written on AIA Document A310™, Bid Bond, unless otherwise provided in the Bidding Documents. The attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of an acceptable power of attorney. The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 4.2.4 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until (a) the Contract has been executed and bonds, if required, have been furnished; (b) the specified time has elapsed so that Bids may be withdrawn; or (c) all Bids have been rejected. However, if no Contract has been awarded or a Bidder has not been notified of the acceptance of its Bid, a Bidder may, beginning days after the opening of Bids, withdraw its Bid and request the return of its bid security.

§ 4.3 Submission of Bids

§ 4.3.1 A Bidder shall submit its Bid as indicated below:

(Indicate how, such as by website, host site/platform, paper copy, or other method Bidders shall submit their Bid.)

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

§ 4.3.3 Bids shall be submitted by the date and time and at the place indicated in the invitation to bid. Bids submitted after the date and time for receipt of Bids, or at an incorrect place, will not be accepted.

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

§ 4.3.5 A Bid submitted by any method other than as provided in this Section 4.3 will not be accepted.

§ 4.4 Modification or Withdrawal of Bid

§ 4.4.1 Prior to the date and time designated for receipt of Bids, a Bidder may submit a new Bid to replace a Bid previously submitted, or withdraw its Bid entirely, by notice to the party designated to receive the Bids. Such notice shall be received and duly recorded by the receiving party on or before the date and time set for receipt of Bids. The receiving party shall verify that replaced or withdrawn Bids are removed from the other submitted Bids and not considered. Notice of submission of a replacement Bid or withdrawal of a Bid shall be worded so as not to reveal the amount of the original Bid.

§ 4.4.2 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids in the same format as that established in Section 4.3, provided they fully conform with these Instructions to Bidders. Bid security shall be in an amount sufficient for the Bid as resubmitted.

§ 4.4.3 After the date and time designated for receipt of Bids, a Bidder who discovers that it made a clerical error in its Bid shall notify the Architect of such error within two days, or pursuant to a timeframe specified by the law of the jurisdiction where the Project is located, requesting withdrawal of its Bid. Upon providing evidence of such error to the reasonable satisfaction of the Architect, the Bid shall be withdrawn and not resubmitted. If a Bid is withdrawn pursuant to this Section 4.4.3, the bid security will be attended to as follows:

(State the terms and conditions, such as Bid rank, for returning or retaining the bid security.)

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 Opening of Bids

If stipulated in an advertisement or invitation to bid, or when otherwise required by law, Bids properly identified and received within the specified time limits will be publicly opened and read aloud. A summary of the Bids may be made available to Bidders.

§ 5.2 Rejection of Bids

Unless otherwise prohibited by law, the Owner shall have the right to reject any or all Bids.

§ 5.3 Acceptance of Bid (Award)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest responsive and responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents. Unless otherwise prohibited by law, the Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's best interests.

§ 5.3.2 Unless otherwise prohibited by law, the Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the lowest responsive and responsible Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 Contractor's Qualification Statement

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request and within the timeframe specified by the Architect, a properly executed AIA Document A305™, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted for this Bid.

§ 6.2 Owner's Financial Capability

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

§ 6.3 Submittals

§ 6.3.1 After notification of selection for the award of the Contract, the Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, submit in writing to the Owner through the Architect:

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

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

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

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

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 Bond Requirements

§ 7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder.

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

§ 7.1.3 The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 7.1.4 Unless otherwise indicated below, the Penal Sum of the Payment and Performance Bonds shall be the amount of the Contract Sum.

(If Payment or Performance Bonds are to be in an amount other than 100% of the Contract Sum, indicate the dollar amount or percentage of the Contract Sum.)

§ 7.2 Time of Delivery and Form of Bonds

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

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312, Performance Bond and Payment Bond.

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

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

ARTICLE 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

§ 8.1 Copies of the proposed Contract Documents have been made available to the Bidder and consist of the following documents:

- .1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)

- .2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)

- .3 AIA Document A201™–2017, General Conditions of the Contract for Construction, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)

- .4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:
(Insert the date of the E203-2013.)

- .5 Drawings

- | Number | Title | Date | |
|--------|---|--------------|--------------------------|
| .6 | Specifications | | |
| | Section | Title | Date Pages |
| .7 | Addenda: | | |
| | Number | Date | Pages |
| .8 | Other Exhibits:
<i>(Check all boxes that apply and include appropriate information identifying the exhibit where required.)</i> | | |
| | [] AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:
<i>(Insert the date of the E204-2017.)</i> | | |
| | [] The Sustainability Plan: | | |
| | Title | Date | Pages |
| | [] Supplementary and other Conditions of the Contract: | | |
| | Document | Title | Date Pages |
| .9 | Other documents listed below:
<i>(List here any additional documents that are intended to form part of the Proposed Contract Documents.)</i> | | |

DIVISION 00 PROCEDURAL AND CONTRACTING REQUIREMENTS

SECTION 002213

SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

GENERAL

- A. The standard American Institute of Architects (AIA) Document A701, "Instructions to Bidders," 1997 Edition, attached hereto, shall apply in full except for the modifications and supplementary instructions specified in this Section.
- B. Owner requests Stipulated Sum Base Bids for work contemplated, as covered by the Project Manual and accompanying Drawings.
- C. The laws of Illinois shall govern the solicitation and award of the Contract.

2.1.3 EXISTING CONDITIONS

- A. Bidders must visit the site to survey existing conditions. Site visit is a mandatory requirement for General Contractor Bidders and must be acknowledged on Bid Form.
- B. Subcontractors are urged to visit the site to survey existing conditions, but it is not a mandatory requirement for them in submitting prices to General Contractor Bidders.
- C. During the Bidding Period, the site will be available to Bidders' inspection during weekday daytime hours, upon request to Brett J. Frazier: Phone: 815-319-4114.

2.1.5 PERMITS AND FEES

- A. The Owner (Winnebago County) will pay for any permit fees required by the City of Rockford.

2.1.6 TAXES

- A. Sales Tax: According to Tax Rule #15 (Illinois Retailer's Occupational Tax, 2-1-69), supplies and materials used on this project are exempt from the Retailer's Occupational Tax and therefore said tax shall not be included in bid amounts.
- B. This project is exempt from Federal Excise Tax

2.1.7 EMPLOYMENT AND WAGES PAID

- A. Wage Rules:
 - 1. Each craft, type of worker and mechanic needed to execute the Contract shall be paid the prevailing wage rate for the locality in which the work is performed, in accordance with all federal laws and laws of the State as well as ordinances and regulations applicable to the work hereunder and having force of law.
 - 2. If, during the course of the Contract, the Department of Labor revises the prevailing wage rates, the Contractor shall have the sole responsibility and duty to ensure that wages paid, whether to employees of the Contractor or any subcontractor, are paid according to the revised prevailing rates. Revisions of the prevailing wage rates shall not be cause for an increase in the Contract Sum.
 - 3. Each Bidder may obtain a copy of the Prevailing Wage Rates for Winnebago County from the Illinois Department of Labor.

3.2 INTERPRETATION OR CORRECTION OF THE BIDDING DOCUMENTS

Add to 3.2.2:

- .1 Bidders shall address questions and correspondence to the following for:

Bidding Procedures & General Construction Technical Specifications

Mr. Allan Johnson

Richard L. Johnson Associates Architects

4703 Charles Street

Rockford, Illinois 61108

Phone: (815) 398-1231

Mr. Trevor Larson E.I.

Chastain & Associates LLC

6832 Salter Drive, Suite 100

Rockford, Illinois 61108

Phone: (815) 489-0050

3.3 SUBSTITUTIONS

Delete items 3.3.1, 3.3.2, 3.3.3 and 3.3.4 as written and substitute the following:

- 3.3.1 Bids shall be based upon the items, materials and manufacturers indicated by the Specifications and Drawings, with only such modifications as are made by Addenda.
- 3.3.2 Bidders desiring to make substitutions for items indicated by the Drawings, Specifications and Addenda, shall list such proposed substitutions in the Substitutions space included in the Bid Form, together with the amounts to be added to or deducted from their Base Bid should any such proposed substitutions be acceptable. Substitutions so listed will not be a determining factor in the award of the Contract.
- 3.3.3 Materials reviewed by the Architect during the bid period and not mentioned in an Addendum may be listed as substitutions to be considered for inclusion into the Contract.
- 3.3.4 Substitutions initiated by the Contractor and not listed on the Bid Form will NOT be reviewed by the Architect after opening of Bids.

4.1 FORM AND STYLE OF BIDS

Add to 4.1.1

- .1 Bids shall be submitted in triplicate on furnished forms.

4.1.5 ALTERNATE BIDS

- A. Only such Alternate Bids as are specifically requested on the Bid Form will be considered.
- B. The amount proposed for any Alternate Bid requested shall be held valid for a minimum of 90 days beyond time allowed for withdrawal of bids.

4.1.8 TIME OF PERFORMANCE

- A. Work shall commence upon notification by the Owner to proceed.
- B. Work shall be substantially complete in the number of calendar days stated on the Bid Form.

4.2 BID SECURITY

- A. Bid Security in the amount of 5% of the sum of the Base Bid and all add alternates that can apply shall be submitted with the Bid in the form of a certified check, cashier's check, bank draft, or bid bond from a bonding company with a Best rating of "B" or better, payable to the Owner.

4.3 SUBMISSION OF BIDS

Add to 4.3.1

- .1 Submit Bids To:
Ann Johns
Director of Purchasing
Room 202
Winnebago County Administrative Building,
404 Elm Street, Rockford, Illinois, 61101

Add to 4.3.2

- .1 Bids will be received until 2:00 P.M., Wednesday, August 17, 2022.

4.3.1 RECEIVING BIDS

- A. All Bids shall be submitted in a sealed envelope boldly labeled with the words "SEALED BID ENCLOSED FOR **"22B-2240 ADDITION & RENOVATIONS WORK AT WINNEBAGO COUNTY ANIMAL SERVICES, ROCKFORD, ILLINOIS"**.
- B. Bids received before the time set for receipt of Bids will be securely kept unopened. No responsibility will attach to the Owner or the Architect for premature opening of a Bid not properly identified.

5.2.2 REJECTION OF BIDS

- A. The Contract will be awarded to the lowest qualified bidder complying with the conditions of the Bidding Documents, provided that the lowest bid submitted is reasonable and that it is to the interest of the Owner to accept it. Award will not be based on any substitutions other than those solicited in the descriptions of Alternates.
- B. Negligence on the part of the Bidder in preparing his Bid shall confer no right of withdrawal or modification of his Bid after the Bid has been opened.
- C. Bidders may be required to cooperate with the Owner and Architect by providing a detailed breakdown of prices bid in order to show, in the manner and form required by the Architect, the division of costs between the several divisions of the Work.
- D. The Owner reserves the right to reject any and all bids and to waive any irregularities in bids received whenever such rejection or waiver is in the interest of the Owner. The Owner also reserves the right to reject the bid of any bidder who has previously failed to perform properly or complete on time contracts of a similar nature; who is not in a position to perform the contract; or who has habitually and without just cause neglected the payment of bills or otherwise disregarded any obligation to subcontractors, material suppliers or employees. In determining the successful bidder, the following elements, in addition to those mentioned above, will be considered: Whether the bidder involved
 - (a) maintains a permanent place of business;
 - (b) has adequate plant equipment to do the work properly and expeditiously;

- (c) has a suitable financial status to meet the obligations incidental to the work; and
 - (d) has appropriate technical experience.
- E. In case of a discrepancy between the prices quoted in words and those quoted in numbers, the prices quoted in words shall govern.
- F. **IMPORTANT NOTE TO ALL BIDDERS**
1. In regards to the Bid Requirements for Equal Employment Opportunity and Affirmative Action, all forms must be completely filled out and signed or your bid will not be considered or read.
 2. This especially applies to the “Contractor or Vendor workforce Data Form.”
 3. The categories must all be filled out. They include:
 - a. Job Classifications.
 - b. Pay Range.
 - c. Males.
 - d. Females.
 - e. Racial.
 4. Bids which fail to address any of these categories will not be considered and will not be read.
 5. Below are the Federal definitions of the following racial groups accepted as minorities by the County of Winnebago.
 - a. **Black:** A person having origins in any of the Black racial groups or Africa, not of Hispanic origin.
 - b. **Hispanic:** A person of Spanish or Portuguese culture with origins in Mexico, South or Central America, or the Caribbean Islands, regardless of race.
 - c. **Asian:** A person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands. This area includes for example: China, Japan, Korea, the Philippine Republic and Samoa.
 - d. **America Indian or Alaskan Native:** A person having origins in any of the original peoples of North America.
 6. Falsification of any required Equal Employment Opportunity or Affirmative Action information on the part of the bidder could result in rejection of the bid submitted or in the case where a contract has already been awarded, in the cancellation of said contract.
 7. Should you have any questions regarding any Affirmative Action of EEO requirements, please contact the Equal Opportunity Compliance Officer at (815) 987- 3034, or write to Equal Opportunity Compliance Division, Winnebago County, 404 Elm Street, Rockford, Illinois 61101.

5.3.1 **AWARD OF CONTRACT**

- A. The bidder to whom the award is to be made will be notified at the earliest possible date.
- B. The Bid, if accepted by the Owner, shall be awarded as a single contract to a General Contractor for all work of the project, including all subcontractor’s work.

4.

7.1 PERFORMANCE BOND AND PAYMENT BOND

7.1 - Bond Requirements:

Add Section 7.1.1.1:

7.1.1.1 - Both a Performance Bond and a Payment Bond will be required, each in an amount equal to 100% of the Contract Sum.

7.2 - Time of Delivery and Form of Bonds:

Delete the first sentence of Section 7.2.1 and insert the following:

The Bidder shall deliver the required bonds to Owner no later than 10 days after the date of Notice of Intent to Award and no later than the date of execution of the Contract, whichever occurs first. Owner may deem the failure of the Bidder to deliver required bonds within the period of time allowed a default.

Delete Section 7.2.3 and insert the following:

7.2.3 - Bonds shall be executed and be in force on the date of the execution of the Contract

END SUPPLEMENTARY INSTRUCTIONS TO BIDDERS.

BIDS SUBMITTED BY _____

Date _____

To: Ann Johns
Director of Purchasing
County of Winnebago
404 Elm Street, Room 202
Rockford, Illinois 61101

Gentlemen:

The undersigned, having become familiar with the local conditions affecting cost of work and with the Bidding Documents, including Advertisement for Bids, Instructions to Bidders, Supplementary Instructions to Bidders, General Conditions, Drawings and Specifications, and Addenda issued thereto, as prepared by Richard L. Johnson Associates, Inc., Architects•Interior Designers, 4703 Charles Street, Rockford, Illinois 61108, hereby agrees to furnish all labor, material and equipment necessary for the Addition & Renovations Work for Winnebago County Animal Services, 4715 North Main Street, Rockford, Illinois for the prices hereinafter stated.

BASE BID

The undersigned agrees to do all the work required, exclusive of work called for in Alternate Bids, for the sum of: _____ DOLLARS (\$ _____) and that such work will be substantially complete in the following number of calendar days: _____.

ALTERNATE BIDS (*Bidders must fill in all Alternate Bids as listed.*)

ALTERNATE BID NO. 1:

The undersigned agrees to do all the work required for demolition and remodeling work associated with new rooms Reception A1, Waiting A2 and Office A3 for an Add to the Base Bid of:

ADD _____ DOLLARS (\$ _____).

ALTERNATE BID NO. 2:

The undersigned agrees to do all the work required for Replacement of Site Lighting for an Add to the Base Bid of:

ADD _____ DOLLARS (\$ _____).

ALTERNATE BID NO. 3:

The undersigned agrees to do all the work associated with Replacement of existing rooftop units RTU 1, RTU-2 and RTU-3 for an Add to the Base Bid of:

ADD _____ DOLLARS (\$ _____).

ALTERNATE BID NO. 4:

The undersigned agrees to do all the work associated with Providing electronic air filtering system to existing rooftop units RTU 1, RTU-2 and RTU-3 for an Add to the Base Bid of:

ADD _____ DOLLARS (\$ _____).

ALTERNATE BID NO. 5:

The undersigned agrees to provide a 100% Performance & Payment Bond for an Add to the Base Bid of:

ADD _____ DOLLARS (\$ _____).

SUBSTITUTIONS

All bids shall be based on the items, materials and manufacturers indicated by the Specifications and Drawings, with only such modifications as are made by Addenda.

Bidders desiring to use items other than those indicated by the Drawings, Specifications and Addenda shall list such proposed substitutions in the spaces below, together with the amounts to be added to or deducted from the amount(s) bid should any such proposed substitution be found acceptable after opening of Bids.

NOTE: Manufacturers' names and materials reviewed by Architect during bidding period, but not included in an Addendum, must be listed below if said materials are to be considered. NO EXCEPTIONS.

<u>BRAND OR MODEL SPECIFIED</u>	<u>PROPOSED SUBSTITUTION</u>	<u>ADD</u>	<u>DEDUCT</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

NOTICE TO BIDDERS: If sufficient space is not available on this form for the information required, attach typewritten sheets with the necessary information.

SUBCONTRACTORS

If the undersigned is awarded the Contract, the below listed subcontractors will be employed for their respective parts of the Work.

<u>SUBCONTRACT</u>	<u>SUBCONTRACTOR'S NAME</u>
Demolition Work	_____
Gravel Base Work	_____
Concrete Pavement, Walk & Curb Work	_____
Cast-In-Place Concrete for Building Structure Work	_____
Unit Masonry Work	_____
Metal Fabrications Work	_____
Wood Trusses Work	_____
Building Insulation Work	_____
Asphalt Shingles Roofing Work	_____
EPDM Roofing Work	_____
Sheet Metal Work	_____
Joint Sealants Work	_____
Hollow Metal Doors & Frames Work	_____
Flush Wood Doors Work	_____
Overhead Sectional Doors Work	_____
Aluminum Framed Entrance Work	_____
Aluminum Storefront Windows Work	_____
Finish Hardware Work	_____
Glazing Work	_____
Gypsum Board Work	_____
Ceramic Tile Base Work	_____
Acoustical Ceilings & Wall Panels Work	_____
Resilient Flooring & Base Work	_____
Painting Work	_____
Metal Casework Work	_____
Earth Moving for Building Work	_____
Plumbing Work	_____
HVAC Work	_____
Electrical Work	_____

NOTICE TO BIDDERS: The above list of Subcontractors will be required to be completed and submitted with the Bid. RLJ-22-020 and WC-22B-2240

ADDENDA RECEIVED

Contractor acknowledges that it incorporates the following Addenda in its Bid.

Addendum #	Date	Addendum #	Date	Addendum #	Date

PRE-BID MEETING ATTENDANCE

The undersigned attended the mandatory Pre-Bid Meeting. YES ___ NO ___

SITE INSPECTION

Existing premises and conditions were checked by an on-site inspection? YES ___ NO ___

ADDITIONAL INFORMATION & FORMS REQUIRED

Federal Tax Identification Number: _____

Contractor's State License Number (if applicable): _____

VENDOR REGISTRATION FORM

SUSPENSION/DEBARMENT CERTIFICATION FORM

W-9 FORM

BUSINESS REFERENCE FORM

The Undersigned agrees to furnish for the Owner's approval the following information, complete and in the form prescribed, prior to commencement of Work. The Undersigned further agrees that failure to furnish such information will be construed to be an unauthorized deviation by the Undersigned from the Contract Documents and as such will because to withhold any and all payment which may become due Undersigned.

Details of insurance coverages outlined in "Insurance" in the Supplementary Conditions.

Submittal and Material Schedule.

NON-COLLUSION AFFIDAVIT

The Bidder, by its officers and _____ agent or representatives present at the time of filing this Bid, being duly sworn, on their oaths say that neither they nor any of them, have in any way, directly or indirectly, entered into any arrangement or agreement with any other Bidder, or with any public officer or the County of Winnebago, Illinois, whereby such affiant or affiants or either of them, has paid or is to pay to such other Bidder or public officer any sum of money, or has given or is to give other Bidder or public officer anything of value whatsoever, or such affiant or affiants or either of them has not, directly or indirectly, entered into any arrangement or agreement with any other Bidder or Bidders, which tends to or does lessen or destroy free competition in the letting of the Contract sought by the attached Bids; that no inducement of any form or character other than that which appears upon the face of the Bid will be suggested, offered, paid, or delivered to any person whomsoever to influence the acceptance of the said Bid or awarding of the Contract; nor has this Bidder any agreement or understanding of any kind whatsoever, with any person, whomsoever to pay, deliver to, or share with any other person in any way or manner, any of the proceeds of the Contract sought by this Bid.

SUBSCRIBED and sworn to before me by _____

this ____ day of _____ 2022. My Commission Expires _____

COMMENCEMENT AND COMPLETION OF CONTRACT

The undersigned agrees, if awarded the Contract, to commence the contract work upon authorization by the Owner and to complete the Work without delay. The undersigned further agrees to execute the Contract in strict accordance with the Contract Documents prepared by Richard L. Johnson Associates, Inc., Architects•Interior Designers, 4703 Charles Street, Rockford, IL 61108.

NON-DISCRIMINATION

The Contractor shall comply the Public Works Employment Discrimination Act, 775 ILCS 10/0.01 et seq., as amended. The Contractor must have a written sexual harassment policy, which meets Illinois State Statutes, 775 ILCS, 15/3.

PREVAILING WAGE

The State of Illinois requires that all wages paid by the Contractor and each subcontractor must be in compliance with The Prevailing Wage Act (820 ILCS 130), as amended. This requires payment of the general prevailing rate for each craft or type of worker, including payment of the general prevailing rate for legal holiday and overtime work. The Illinois Department of Labor publishes the prevailing wage rates on its website. The Contractor must review the wage rates applicable to the work of the contract at regular intervals in order to ensure the timely payment of current wage rates. The Contractor agrees that no additional notice is required. The Contractor must be responsible to notify each subcontractor of the wage rates set forth in this contract and any revisions thereto. A copy of the prevailing wage rates is posted on the County website. If wage rates change during the course of the project, the new rates will be available online at www.state.il.us/agency/idol.

If this Bid requires Prevailing Wages: please visit the IDOL website for instructions. It is the responsibility of the Awarded Vendor to submit Certified Payrolls to the State. <https://www2.illinois.gov/idol/Laws-Rules/CONMED/Pages/prevailing-wage-act.aspx>

EMPLOYMENT OF ILLINOIS WORKERS ON PUBLIC WORKS ACT

Pursuant to (30 ILCS 570/3) the “Employment of Illinois Workers in Public Works Act,” whenever there is “a period of excessive unemployment” in Illinois, defined by any month immediately following two consecutive calendar months during which the level of employment in the state has exceeded 5%, then any person or entity working in a Public Works project for the county shall employ at least 90% Illinois laborers on such project. The County expects all contractors on Public Works projects to abide by this act in addition to prevailing wage until the provisions of this act are lifted by the State of Illinois. More information about the Employment of Illinois Workers on Public Works Act can be found here: <http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=549&ChapterID=7>

CERTIFIED PAYROLL REQUIREMENTS

The certified payroll records must include for every worker employed on the public works project the name, address, telephone number, social security number, job classification, hourly wages paid in each pay period, number of hours worked each day, and starting and ending time of work each day. These certified payroll records are considered public records and public bodies must make these records available to the public under the Freedom of Information Act, with the exception of the employee's address, telephone number and social security number. Any contractor who fails to submit a certified payroll or knowingly files a false certified payroll is guilty of a Class B misdemeanor.

HOLD HARMLESS CLAUSE

The successful bidder will agree to indemnify, save harmless and defend the County of Winnebago, its agents, Board members, servants, and employees, and each of them against and hold it and them harmless from any and all lawsuits, claims, demands, liabilities, losses and expenses, including court costs and attorney's fees, for or on account of any injury to any person, or any death at any time resulting from such injury, or any damage to property, which may arise or which may be alleged to have arisen out of or in connection with the work covered by this contract upon award. The foregoing indemnity shall apply except if such injury, death or damage is caused directly by the willful and wanton conduct of the County of Winnebago, its agents, Board members, servants, or employees or any other person indemnified hereunder.

BID RESPONSE

It is required that the bidder completely read the Bid prior to filling out to become acquainted with terms and conditions of the bid document and merchandise requirements. No relief will be allowed from the bid conditions unless you take written exception to that condition on your bid.

GENERAL CONDITIONS

This bid shall be firm for at least 150 days after the latest time specified for submission for bids and thereafter until written notice is received from the bidder.

AWARD OF ORDER

The County will award a purchase order to the lowest responsive, responsible bidder meeting the County's requirements as listed in this document. The County will be the sole judge of acceptability of any products and services offered.

EXCEPTIONS

The bid speaks for itself. Bidders taking exception to any terms, conditions or specifications of this bid must clearly state in writing such exception(s) either on or with their bid. The County will be the sole judge of the acceptability of any exception noted, and is not bound to consider any bid submitted with exceptions.

TERMINATION

Failure to comply with the terms and conditions as herein stated shall be cause for cancellation of the contract. The County will give written notice of unsatisfactory performance and the contractor will be allowed thirty (30) days to take corrective action and accomplish satisfactory control. If at the end of the thirty days, the County deems the contractor's performance still unsatisfactory, the contract shall be canceled. The exercise of its right of cancellations shall not limit the County's right to seek any other remedies allowed by law.

The successful bidder will agree that the resulting contract is made subject to available budgetary appropriations and shall not create any obligation on behalf of the County in excess of such appropriations. In the event that no funds or insufficient funds are appropriated and budgeted, this Contract shall terminate without penalty or expense to the County thirty (30) days after written notification of termination from the County.

The successful bidder will agree that pursuant to requirements imposed under Illinois law, the County shall have 120 days after each election of county board members to terminate this Agreement, without cause and without penalty.

GOVERNING LAW

The contract will be governed by and construed in accordance with the laws of the State of Illinois without regard for the conflict of law provisions. Venue is proper only in the County of Winnebago.

APPLICABLE CODES AND ORDINANCES

Contractor hereby certifies that all materials used conform to all articles and sections of all current applicable National Building Codes and other relevant construction-related codes. Workmanship and materials shall conform to all local applicable codes and ordinances.

ASSUMPTION OF RISK

Until the completion and final acceptance by the County of all work under or implied by this Contract, the work shall be under the Contractor's care and charge and he shall be responsible, therefore. Contract shall rebuild, replace, repair, restore and make good all injuries, damages, re-erection, and repairs rendered necessary by causes, of any nature, to all or any portion of the work.

DRUG FREE WORKPLACE

The Contractor (whether an individual or company) agrees to provide a drug free workplace as provided for in 30 ILCS 580/1 et seq.

PAYMENT

Original invoices must be presented for payment in accordance with instructions contained on the Purchase Order including reference to Purchase Order number and submitted to the correct address for processing. The County shall pay all invoices pursuant to 50 ILCS 505, "Local Government Prompt Payment Act".

RESERVATION OF RIGHTS

The County of Winnebago reserves the right to reject any or all bids failing to meet the County's specifications or requirements and to waive technicalities. If in the County of Winnebago's opinion, the lowest bid is not the most responsible bid, considering value received for monies expended, the right is reserved to make awards as determined solely by the judgment of the County of Winnebago. In determining the lowest responsible bidder, the County shall take into consideration the qualities of the articles and services supplied, their conformity with the specifications, and their suitability to the requirements of the County and the delivery terms. Intangible factors, such as the Bidder's reputation and past performance, will also be weighed.

INSURANCE REQUIREMENTS

The Contractor and Subcontractors or Partners will purchase and maintain insurance for the coverages for a minimum of three (3) years after completion of the Contract.

Upon notice of acceptance of Bid, the successful bidder shall, within fifteen (15) calendar days of said notice, furnish to the Director of Purchasing a certificate of Insurance and provide policy endorsements evidencing specific coverage of the types of insurance in the amounts specified below. Such coverage shall be placed with a responsible company acceptable to Winnebago County licensed to do business in the State of Illinois, and with a minimum insurance rating of A: VII as found in the current edition of A M Best’s Key Rating Guide. Each policy shall bear an endorsement precluding the cancellation or reduction of said policies without providing Winnebago County thirty (30) days prior notice thereof in writing. All required insurance shall be maintained by the contractor in full force and effect during the life of the contract, and until all work has been approved and accepted by Winnebago County. The Proposer is responsible for all insurance deductibles and Self-Insured Retentions.

TYPE OF INSURANCE	MINIMUM LIMITS LIABILITY
1. Workers Compensation	Statutory
2. Employers Liability	\$1,000,000
A. Each Accident & Disease	
3. *Commercial General Liability	\$4,000,000
4. *Umbrella Excess Liability (over primary) Retention for Self-Insured Hazards (each occurrence)	\$4,000,000
5. *Business Auto Liability	\$2,000,000

Contractor shall procure an appropriate clause in, or endorsement on, each of its policies for the fire or extended coverage insurance and on all other forms of property damage insurance covering the Contractor’s personal property, materials or equipment whereby the insurer waives subrogation or consents to a waiver of right of recovery against Agent and Owner, and having obtained such waiver or subrogation or waiver of the right to recovery, Contractor hereby agrees that it will not make any claim against or seek to recover from Agent or Owner for any loss or damage of property of the type covered by such insurance.

***ALSO Required in addition to a Certificate of Insurance are the following Endorsements for BOTH Commercial and Auto Liability:**

1. An Additional Insured Endorsement
2. Waiver of Subrogation for Insurance is Primary and Non-Contributory to additional insured insurance coverage

If any policy or coverage is written as "claims made" then coverage must be maintained for 4 years after project completion.

At all times during the term of the contract, the Proposer and its independent contractors shall maintain, at their sole expense, insurance coverage for the Proposer, its employees, officers and independent contractors, as follows:

- It is the responsibility of Proposer to provide a copy of this BID to their insurance
- It may also be required that the Proposer’s insurer and coverage be approved by Winnebago County prior to execution of the Contract.
- No work shall be started until receipt of Certificate of Insurance.

The County of Winnebago shall be named as additionally insured on all certificates of insurance. Insurance certificates shall also reference project name and BID NUMBER. Insurance Certificates with required endorsements should be emailed to purchasing@purchasing.wincoil.gov

The insurance carrier of the insured is required to notify the County of termination of any of these coverage's, prior to the completion of any contract, at least 30 days prior to expiration.

CHANGES IN OR TERMINATION OF, INSURANCE COVERAGE

The insurance carrier of the insured is required to notify the County of termination of any of these coverage's, prior to the completion of any contract, at least 30 days prior to expiration.

INSURANCE RATING

All the above-specified types of insurance shall be obtained from companies that have at least an A rating in Best's Guide or the equivalent.

SURVIVAL OF INDEMNIFICATION

The indemnification described above shall not be limited due to the enumeration of any insurance coverage herein provided, and indemnification shall survive the termination of the Contract.

NOTICE OF LAWSUIT

Within 60 days of service of process, the County shall notify the Proposer of any lawsuit involving the indemnification provided for above. Failure to provide such notice shall not relieve the Proposer of its obligation to provide indemnification. However, the County shall be responsible for any additional costs of defense incurred due to their failure to provide such notice within 60 days.

CHOICE OF LEGAL COUNSEL

The Proposer shall provide coverage as provided in the contract and retains the right to choose legal counsel subject to the approval of the County, and appointment by the State's Attorney.

RIGHTS RETAINED

Notwithstanding the foregoing, nothing contained herein shall be deemed to constitute a waiver of any defenses or immunities otherwise available to the County.

STATEMENT OF BIDDER'S BUSINESS ORGANIZATION

This Statement is part of the Proposal for the entire work.

PROJECT _____

SUBMITTED BY _____

If the Proposal is submitted by an individual, execute the following form:

Firm Name _____

Owner and Official Address _____

Dated this _____ day of _____ 2022

By _____

If the Proposal is submitted by a partnership, execute the following form:

Firm Name _____

Firm Address: _____

All Partner Names:

Dated this _____ day of _____ 2022

By _____

If this Proposal is submitted by a corporation, execute the following form:

Corporate Name _____

State and City in which Incorporated _____

If incorporated in another state, are you authorized to do business in the State of Illinois? Yes _____ No _____

Name and Address of registered agent in Illinois:

(Title)

(Title)

CORPORATE SEAL

Dated this _____ day of _____ 2022

By _____ Title _____

NOTE: ALL ENTRIES MUST BE IN INK.

CONTRACTOR QUALIFICATION STATEMENT

Contractor Contact: _____

Telephone: _____ Email: _____

CONTRACTOR MUST SUBMIT THIS BID FORM ALONG WITH REQUESTED SUBMITTALS IN ORDER TO BID ON THIS PROJECT. ANY CHANGES MUST BE SUBMITTED TO WINNEBAGO COUNTY BEFORE BID OPENING ON ANY PROJECT.

Submit:

- 1. **Federal Employer Tax Identification Number or Social Security Number:** _____
- 2. **Contractors State License Number** (if applicable): _____
- 3. **VENDOR REGISTRATION FORM**
- 4. **SUSPENSION/DEBARMENT CERTIFICATION FORM**
- 5. **W-9 FORM**
- 6. **BUSINESS REFERENCE FORM** will need to be completed

PLEASE PROVIDE ANSWERS TO THE FOLLOWING:

YEARS IN BUSINESS _____

ANNUAL SALES _____

PROVIDE A BRIEF DESCRIPTION OF YOUR BUSINESS (i.e. General Contractor, construction material supplier, plumbing, electrical, etc.)

1.01. SIGNATURES

Authorized signature in affirmation of the above statements and submittals:

_____	_____
(Name of Corporation)	(Authorized Signature) (Title)
_____	_____
(State of Incorporation) (Date)	(Print Name of Signer)

NOTE: This information will be reviewed for each bid to determine contractor eligibility.

END BID FORM



WINNEBAGO COUNTY

ILLINOIS

VENDOR REGISTRATION FORM

Vendor (or Individual) Legal Name: _____

DBA/Alternative Vendor Name: _____

ADDRESS(ES)		
	Physical	Remittance, if different from physical
Street 1		
Street 2		
City		
State		
ZIP		
CONTACT(S)		
	Sales Representative	Accounts Receivable
Name		
Phone		
Email		
Web Address		
GENERAL INFORMATION		
Scope of work to be performed or provided: <input type="checkbox"/> Services and/or <input type="checkbox"/> Goods <input type="checkbox"/> Other _____		Type of Service/Goods _____ Do you have a current contract <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Winnebago County Employee: <input type="checkbox"/> Yes or <input type="checkbox"/> No If yes: <input type="checkbox"/> Current or <input type="checkbox"/> Former Dept. _____		
Name of Department/Person requesting your service or goods: _____		
CLASSIFICATION(S)		
If applicable, check those boxes that apply:		<i>(All Certifications must be included with this completed form)</i>
<input type="checkbox"/> Minority-Owned Business:	<input type="checkbox"/> Certified	<input type="checkbox"/> Self-Certified
<input type="checkbox"/> Woman-Owned Business:	<input type="checkbox"/> Certified	<input type="checkbox"/> Self-Certified
<input type="checkbox"/> Veteran-Owned Business:	<input type="checkbox"/> Certified	<input type="checkbox"/> Self-Certified
SIGNATURE		
You affirm the above information is true and correct.		
Authorized Signature: _____		Date Signed: _____
OFFICE USE ONLY		
Approved by: _____		Assigned Vendor Number: _____
Verification Completed: <input type="checkbox"/> Sam.gov <input type="checkbox"/> OFAC <input type="checkbox"/> IRS TIN Match <input type="checkbox"/> W-9 Uploaded		Date Entered: _____



WINNEBAGO COUNTY

— ILLINOIS —

SUSPENSION/DEBARMENT CERTIFICATION FORM

Non-Federal entities are prohibited from contracting with or making sub-awards under covered transactions to parties that are suspended or debarred or whose principals are suspended or debarred. Covered transactions include procurement for goods or services equal to or in excess of \$25,000.00. Contractors receiving individual awards for \$25,000.00 or more and all sub-recipients must certify that the organization and its principals are not suspended or debarred.

By submitting response to this solicitation and signing this form, the Bidder/Proposer certifies to the best of its knowledge and belief, that the company and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any Federal, State or local governmental entity, department or agency;
2. Have not within a three-year period preceding this solicitation been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction, or convicted of or had a civil judgment against them for a violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (2) of this certification; and
4. Have not within a three-year period preceding the signing of this certificate had one or more public transactions (Federal, State or local) terminated for cause or default.

If the Bidder/Proposer is unable to certify to any of the statements in this certification, Bidder/Proposer shall attach an explanation to this certification.

Vendor Name: _____

Address: _____

City: _____ ZIP: _____

Telephone: _____ Email Address: _____

Authorized Signature: _____

(Print) Name: _____ Title of Official: _____

Signature Date: _____

Purchasing Department | 404 Elm St, Rm 202, Rockford, IL 61101 | www.wincoil.us

Phone: (815) 319- 4380 | Email: purchasing@purchasing.wincoil.gov

Request for Taxpayer Identification Number and Certification

Give Form to the requester. Do not send to the IRS.

► Go to www.irs.gov/FormW9 for instructions and the latest information.

Print or type. See Specific Instructions on page 3.	<p>1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.</p>	
	<p>2 Business name/disregarded entity name, if different from above</p>	
	<p>3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only one of the following seven boxes.</p> <p><input type="checkbox"/> Individual/sole proprietor or single-member LLC <input type="checkbox"/> C Corporation <input type="checkbox"/> S Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Trust/estate</p> <p><input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ► Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is not disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.</p> <p><input type="checkbox"/> Other (see instructions) ►</p>	<p>4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):</p> <p>Exempt payee code (if any) _____</p> <p>Exemption from FATCA reporting code (if any) _____</p> <p><small>(Applies to accounts maintained outside the U.S.)</small></p>
	<p>5 Address (number, street, and apt. or suite no.) See instructions.</p>	Requester's name and address (optional)
	<p>6 City, state, and ZIP code</p>	
	<p>7 List account number(s) here (optional)</p>	

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number to Give the Requester* for guidelines on whose number to enter.

Social security number									
Or									
Employer identification number									

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here	Signature of U.S. person ►	Date ►
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General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to www.irs.gov/FormW9.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)

~~Form 1099-DIV (dividends, including those from stocks or mutual funds)~~

- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, later.

BUSINESS REFERENCES

The Bidder must list references for the last three (3) completed projects, listing company, name, address, contact person, telephone number and date of completion. If Bidder is a new business, provide references that will enable the County to determine if Bidder is responsible.

NAME	
CONTACTPERSON	
ADDRESS	
CITY, STATE, ZIP	
TELEPHONE	
EMAIL	

Project Dates(s) _____ Project Value _____

NAME	
CONTACTPERSON	
ADDRESS	
CITY, STATE, ZIP	
TELEPHONE	
EMAIL	

Project Dates(s) _____ Project Value _____

NAME	
CONTACTPERSON	
ADDRESS	
CITY, STATE, ZIP	
TELEPHONE	
EMAIL	

Project Dates(s) _____ Project Value _____

NUMBER OF YEARS IN BUSINESS	
CURRENT NUMBER OF PERSONNEL ON STAFF	



AIA® Document A201® – 2007

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

Addition and Renovations at
Winnebago County Animal Services
4715 N. Main Street
Rockford, IL 61103

THE OWNER:

(Name, legal status and address)

Winnebago County
404 Elm Street, Room 202
Rockford, IL 61101

THE ARCHITECT:

(Name, legal status and address)

Richard L. Johnson Associates, Inc.
4703 Charles Street
(Paragraphs deleted)
Rockford, IL 61108

(Paragraphs deleted)

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding requirements.

§ 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

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.

Init.

§ 1.1.3 THE WORK

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

§ 1.1.4 THE PROJECT

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

§ 1.1.5 THE DRAWINGS

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

§ 1.1.6 THE SPECIFICATIONS

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

§ 1.1.7 INSTRUMENTS OF SERVICE

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

§ 1.1.8 INITIAL DECISION MAKER

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

1.1.9 Where the word "building," "project" or "work" occurs, it shall be construed as applying to all portions of the Work.

1.1.10 The term "General Work" shall mean the portion of the Work other than Mechanical and Electrical Work.

1.1.11 The term "Mechanical Work" shall refer to any Plumbing, Heating, Ventilating or Air Conditioning Work described by the Mechanical Drawings and/or Division 15 of the Specifications and includes like work specified in Division 1.

1.1.12 The term "Electrical Work" shall mean the Electrical Work described by the Electrical Drawings and/or Division 16 of the Specifications and includes like work specified in Division 1.

1.1.13 The term "General Contractor" shall mean the Contractor as defined in Article 3. The terms "General Contractor," "Plumbing Contractor," "Fire Protection," "Heating Contractor," "Electrical Contractor," etc., may appear in the Construction Documents to help identify responsibilities associated with their respective segments of the Work.

1.1.15 The term "Engineer" shall mean an engineering professional or entity employed by the Architect, except as stated or clearly implied otherwise.

1.1.16 The term "provide" shall mean "furnish and install in place" except as stated otherwise.

1.1.17 The term "equal" shall mean equal in accordance with the determination of the Architect, except as clearly indicated otherwise.

1.1.18 The terms "approved," "approval," etc., shall refer to approval by the Architect given in writing, except as specifically indicated otherwise.

§ 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 requirements for how pipes, ducts, cables and conduits are to penetrate walls and partitions, as set forth in Specifications Section 07840 - Firestopping, shall supercede requirements described and/or drawn elsewhere.

1.2.1.2 Ambiguity or conflict in description of quality or quantity shall be resolved in favor of the better quality or greater quantity.

1.2.1.3 The Contractor shall provide all work and materials which any section or part of the Drawings, Specifications or Conditions require him to provide regardless of whether such requirement is or is not faithfully repeated in other parts of documents thereof to which the provision might be appropriate.

1.2.1.4 In all cases where a device, material, unit, or part of equipment is referred to as singular in number, it is intended that such reference shall apply to as many such devices as are required to complete the work referenced.

1.2.1.5 As is the custom, persons and entities appearing in the Contract Documents may be referred to as though masculine in gender, irrespective of actual gender. When the context so requires, the masculine gender includes the female and/or neuter, and a singular number includes the plural as does the plural the singular.

1.2.1.6 Where a Specifications Section contains a "Work includes" list, the list shall merely serve as a table of contents for items described in the Section and does not necessarily set the limits of work required.

1.2.1.7 Where a material is listed only by description, ASTM, or Fed. Spec. numbers, any product meeting or exceeding requirements of such specification will be acceptable if material does not alter details shown on Drawings. If requested by Architect, evidence shall be furnished showing that material meets requirements of the Specifications.

§ 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.

1.2.3.1 Acronyms and abbreviations that have well known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

1.2.3.2 Where reference is made to a standard of a government, manufacturers' association or professional society, the pertinent sections of the latest edition (as of the time of bidding) of the referenced standard shall apply, unless otherwise specified, and shall have the same force and effect as if set forth in full.

§ 1.3 CAPITALIZATION

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

§ 1.4 INTERPRETATION

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

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

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment

suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

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

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

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

ARTICLE 2 OWNER

§ 2.1 GENERAL

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 The Owner shall at the written request of the Contractor prior to commencement of the Work and thereafter, furnish to the Contractor reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. Furnishing of such evidence shall be a condition precedent to commencement or condition of the Work. After such evidence has been furnished, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

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

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

2.2.5.1 After award of the Contract, the Architect will furnish without charge to the Contractor, 5 complete sets of Contract Drawings and Project Manuals, covering all Divisions of Work.

Init.

2.2.5.2 Contractor may secure extra sets of Drawings, at a cost per set to cover printing and handling, check made payable to the Architect. No refund.

2.2.5.3 Contractor may secure extra sets of the Project Manual (Specifications) at a cost per set to cover printing and handling, check made payable to the Architect. No refund.

§ 2.3 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

2.3.1 The reasonable cost to be deducted for correcting such deficiencies may also include costs for testing, engineering, accounting, consulting services and attorneys' fees and expenses.

2.3.2 The Owner's actions pursuant to this subparagraph shall not operate as a release of any obligation of a Surety upon its Performance and Labor and Material Payments Bonds.

§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

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

ARTICLE 3 CONTRACTOR

§ 3.1 GENERAL

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

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

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

§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

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

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the

Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

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

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

3.2.5 The Contractor shall advise the Architect of any condition in the Contract Documents that might affect a product's warranty.

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage.

§ 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.

3.4.1.1 Where materials are listed by manufacturer and trade name with no qualifying statement, comparable materials of other manufacturers complying with or exceeding the specifications for the named item, as appropriate to the intended use, may be submitted for the Architect's approval by listing the proposed item on the substitutions list found in the Bid Form.

3.4.1.2 After award of the Contract, substitutions initiated by the Contractor will not be considered except under one of more of the following conditions:

3.4.1.2.1 Required for compliance with subsequent interpretation of code requirements or insurance regulations.

Init.

3.4.1.2.2 Unavailability of specified products, through no fault of the Contractor.

3.4.1.2.3 Subsequent information discloses inability of specified products to perform properly or to fit in designated space.

3.4.1.2.4 When it is clearly seen, in the judgment of the Architect, that a substitution would be substantially to the Owner's best interests, in terms of cost, time or other considerations.

3.4.1.3 By submitting a substitution, Contractor assumes responsibility for any changes or modifications required in the construction directly related to the substitution as well as in any other items of work affected by such substitution, including warranties, irrespective of Architect's acceptance of the substitution.

§ 3.4.2 Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

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

3.4.3.1 It will be the duty of the Contractor to enforce among all workers directly or indirectly employed by him, all rules that Owner may establish for conduct of workers on premises.

3.4.4 Criminal Background Checks (ref. Child Sex Offender and Murderer Community Notification Act). Every person employed to perform work at the construction site shall be warranted by the Contractor to have not committed a legal offense that would prohibit such person's employment by the school district, especially with respect to convictions for a child sex offense (105 ILCS 5/10-21.9), unless prior permission is given by the School District Superintendent.

3.4.4.1 Each such agent or individual so employed shall undergo a criminal background check, including a fingerprint base investigation of the Federal Bureau of Investigation history records database (Public Act 93-0909 - House Bill 3977), by his immediate employer, who shall certify to the Contractor, through such procedures as may be established by the Contractor, that the employer has performed a criminal background check on such person and that according to that check such person has not been convicted of a child sex offense or any other offense that would prohibit such person from becoming an employee of the school district. The certification shall include the name of each individual checked and the date each background check was last performed.

3.4.4.2 Such certifications shall be updated on a yearly basis by each employer, who shall contact the local law enforcement authority where each employee or agent resides and the Federal Bureau of Investigation history records database to determine if the employee is on the list of registered felons who have committed child sex offenses. The Contractor's certification with the latest updates shall be submitted to the Owner each year, through the Architect.

3.4.4.3 The Contractor shall be responsible for any fees associated with the criminal background check including the fingerprint based investigation of the Federal Bureau of Investigation history records database.

3.4.5 Quality of Materials. Unless specifically called for otherwise, all equipment, materials and articles incorporated in the Work are to be of the best grade of their respective kinds for the purpose.

3.4.5.1 Domestic vs. Foreign Sources of Materials: In order that ready availability of materials, parts, or components for repair, replacement or expansion may be assured, all materials, parts and components shall be obtained where feasible from sources which maintain a regular domestic stock.

3.4.5.2 Acceptance of Materials: Within 30 days after award of Contract and prior to ordering material and equipment, Contractor shall submit in quadruplicate to Architect a listing of which manufacturers and materials the Contractor intends to incorporate into the Work. When called for by the Architect, he shall also submit related

performance capacities, samples and other pertinent information. Machinery or equipment, materials and articles installed or used without such review shall be at the risk of subsequent rejection.

3.4.5.3 Anchors and/or Fasteners: Except as specifically specified or approved otherwise in writing by Architect, anchoring of any component by way of fibrous braid, plastic or other non-metallic expansion shields will not be permitted.

3.4.6 Quality of Workmanship. Unless specifically called for otherwise, all workmanship incorporated in the Work is to be of the best grade appropriate to its kind for the purpose.

3.4.6.1 Work shall be performed by trained experienced personnel, skilled in their various crafts, under supervision of an approved foreman.

§ 3.5 WARRANTY

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

§ 3.6 TAXES

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

3.6.1 Contractor shall also pay unemployment and social security taxes as well as other taxes imposed by local, city, state or federal government. If the tax laws are subsequently amended by legislation during the term of the Contract, the Contractor shall provide the next change caused by such amendment.

§ 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.

Subparagraph 3.7.1 of the General Conditions is supplemented by the addition of the following:

3.7.1 The Owner shall secure and pay for the building permit. Any other permits, fees or notices required shall be secured as part of the work required by the Contract.

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

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

§ 3.7.4 Concealed or Unknown Conditions. If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the

Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 ALLOWANCES

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

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

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

§ 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

3.9.1.1 The Contractor shall employ a competent Superintendent who shall be in attendance at all times when Work is taking place at the Project Site until Substantial Completion.

3.9.1.2 The Superintendent employed shall be subject to the Owner's approval. Upon Architect's request, Contractor shall submit for review a written summary of the Superintendent's experience and qualifications.

3.9.1.3 Each prime subcontractor shall keep a responsible representative on the project throughout the work until all check list items have been accepted by the Architect and the Owner.

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

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection.

§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's horizontal bar chart construction schedule for the Work. The schedule shall not

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exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

3.10.1.1 The Horizontal Bar Chart for the Work shall be posted in the project construction office and shall be brought up to date monthly by the Contractor. Updated bar charts shall include schedule changes for the critical work of all subcontractors. Copies of updated bar charts shall be sent to the Owner and Architect monthly.

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

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

§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

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

§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

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

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

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

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

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors.

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

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

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect

in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

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

3.12.11 Only Shop Drawings that have been reviewed by Contractor and Architect shall be used at the job site and all copies shall bear the stamps of both the Contractor and Architect.

3.12.12 The Architect's stamp shall only indicate general conformance to the design concept and the Contract Documents.

3.12.13 The Architect reserves the right to withhold action on a submittal that requires coordination with other submittals, until all of the related submittals are submitted. Should a review be delayed for coordination, the Architect will promptly advise the Contractor of the necessity for additional material to be submitted.

3.12.14 No extension of time to perform the Contract will be authorized because of Contractor's failure to make submissions to Architect in time for the Architect to execute a thorough review. Contractor should 2 weeks for most reviews.

§ 3.13 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

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

withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

§ 3.15 CLEANING UP

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

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

§ 3.16 ACCESS TO WORK

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

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

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

§ 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

3.18.3 None of the foregoing provisions shall deprive the Owner or the Architect of any action, right or remedy otherwise available to them or either of them at common law.

3.18.4 In the event that any party is requested but refuses to honor the indemnity obligations hereunder, then the party indemnifying shall, in addition to all other obligations, pay the cost of bringing any such action, including attorneys' fees, to the party requesting indemnity.

ARTICLE 4 ARCHITECT

§ 4.1 GENERAL

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

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

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

§ 4.2 ADMINISTRATION OF THE CONTRACT

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

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

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

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

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

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or

procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

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

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

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

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

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

ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

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

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

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

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14-day period shall constitute notice of no reasonable objection.

5.2.1.1 Initial payment requests will not be processed for any of the Work until the list of Subcontractors, as requested on the Bid Form, is complete, submitted and approved.

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

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

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

§ 5.3 SUBCONTRACTUAL RELATIONS

By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

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

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

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

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

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

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

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

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those

portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

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

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

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

§ 6.2 MUTUAL RESPONSIBILITY

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

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

6.2.2.1 Each contractor shall perform work in proper sequence in relation to that of other contractors. Electrical contractors shall fit their conduit, piping and ductwork into the structure as job conditions may demand. Final decision as to right-of-way and run of pipes, ducts, etc., is reserved by the Architect to make at project coordination meetings.

6.2.2.2 Each contractor shall cooperate in every way possible to allow for installation of equipment provided by Owner or his Equipment Contractors during the course of construction.

6.2.2.3 Each contractor and subcontractor shall obtain complete data at site and inspect surfaces that are to receive his work before proceeding with his work; shall be solely responsible for accuracy of measurements and layout of work; shall correct errors or defects due to faulty measurements taken, information obtained, layout, or due to failure to report discrepancies. Work of previous contracts found to be unacceptable to receive work of this contract shall be reported to the Architect by contractors finding such conditions prior to beginning of their work.

6.2.2.4 Each contractor shall give due notice and proper information to other contractors of any special provisions necessary for the placing and setting of his work coming in contact with work of other contractors. Failing to do so in proper time, he shall be held responsible and shall pay for any and all alterations and repairs necessitated by such neglect.

6.2.2.5 Each contractor shall furnish all lintels, thimbles, sleeves, hangers, etc., required for his work and not indicated to be furnished under another subcontract. Such items shall be installed in a manner and at such times will not delay or interfere with any other building operations.

6.2.2.6 Any contractor who installs work improperly coordinated with other trades, either by way of installing work at the wrong time or the wrong items of work or work in the wrong location, shall, at his own expense, do all cutting, fitting, patching, repairing or replacement required to make is work conform to the intent of the design as shown and specified.

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

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

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

§ 6.3 OWNER'S RIGHT TO CLEAN UP

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

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

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

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

§ 7.2 CHANGE ORDERS

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

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

7.2.2 No contractor shall have the right to prosecute or maintain a suit-at-law to recover for an extra, unless his claim is based upon a written Change Order signed by the Owner.

7.2.3 In addition to information required by the General Conditions, Change Orders shall include itemized breakdowns of labor hours and wages and of materials as well as itemized costs of related accessories, rentals and special services separated out from other costs. Breakdowns shall be organized according to Subcontractors, sub-subcontractors, material suppliers and Contractor.

7.2.4 The combined total of profit and overhead shall be limited to 10% for self-performed work and 5% for non-performed work. Overhead shall include the markup related to a contractor's indirect expenses such as main office operations, field office activities, tools and minor equipment, depreciation, as-built drawings, personnel transport, delay costs and liability insurance. Overhead is not to include what are frequently called "general conditions" items such as rented sheds, rented operating equipment, scaffolding, toilets, snow removal, waste removal, cleaning, permits, fees, surveying, temporary constructions, temporary enclosures, protection, and temporary heat, power and ventilation.

General Contractor is allowed to mark-up subcontractor's cost by 5%.

7.2.5 Charges for field supervision time shall not be allowed as an added expense unless the Change Order includes an extension of the Contract Time.

7.2.6 Charges for delivery of materials shall not be allowed as an added expense unless the quantity of additional material items exceeds one-half truck load.

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

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

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

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

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.7.

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

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

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

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

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

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits

covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

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

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 MINOR CHANGES IN THE WORK

The Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.

ARTICLE 8 TIME

§ 8.1 DEFINITIONS

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

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

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

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

§ 8.2 PROGRESS AND COMPLETION

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

8.2.1.1 It is hereby understood and mutually agreed, by and between Contractor and Owner, that the date for beginning construction, rate of progress and time for completion of the work of the Contract are essential conditions of the Contract.

8.2.1.2 Work shall be prosecuted regularly, diligently and uninterruptedly at such rate of progress as will ensure the substantial completion of the work within the required completion time(s) except as otherwise established in the Contract.

8.2.1.3 Additional costs due to payment of overtime rates shall be deemed to have been included in the Contract Sum and may not be submitted to Owner for additional payment except by prior written agreement.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

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

§ 8.3 DELAYS AND EXTENSIONS OF TIME

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

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

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

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

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

§ 9.2 SCHEDULE OF VALUES

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Architect, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

9.2.1 Allowances and bond charges shall appear separately in the schedule.

§ 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.

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

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

9.3.1.3 As soon as possible, the Contractor shall submit to the Owner an estimated draw schedule for each month, based upon the date established for completion of the project.

9.3.1.4 Contractor's itemized labor and material breakdown shall be submitted to the Architect on Schedule of the Contract Amount forms furnished by the Architect for review and approval prior to submission of first periodic estimate for payment.

9.3.1.5 Payment requests shall be submitted in triplicate.

9.3.1.6 Beginning with the first payment request and with each subsequent payment request, the Contractor shall submit 3 notarized waivers of lien for the full amount of the payment request being submitted. Beginning with the second payment request, the Contractor shall submit 3 notarized waivers of lien from each subcontractor/supplier for

whom payment was requested in the previous payment request. These waivers must be received by the Architect in order for subsequent payment to be released.

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

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

9.3.3.1 All material and work paid for by partial payments shall thereupon become the sole property of the Owner; but this provision shall not be construed as relieving the Contractor from the sole responsibility for the care and protection of materials and work upon which payments have been made nor the restoration of damaged work, nor as a waiver of the right of the Owner to require the fulfillment of the terms of the Contract.

§ 9.4 CERTIFICATES FOR PAYMENT

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

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

§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

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

- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a separate contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

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

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

§ 9.6 PROGRESS PAYMENTS

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

9.6.1.1 Owner will make partial payment to Contractor for value, proportionate to amount of Contract, of labor and material incorporated in the Work in any calendar month. Payments will be made on approved periodic estimates submitted in triplicate by Contractor. Materials stored off site in preparation for incorporation into the Work will be paid at a rate of 80% of purchased value.

9.6.1.2 Ten percent (10%) of each payment amount will be retained until completion of the project.

§ 9.6.2 The Contractor shall pay each Subcontractor no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

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

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

9.6.4.1 Should the Owner fail to approve an Application for Payment for a cause the Owner determines is the fault of the Contractor and not the fault of a particular subcontractor, the Owner may pay such subcontractor directly; and such payment shall not be deemed to create any contractual relationship between the Owner and any subcontractor or to create any rights in the subcontractor against the Owner.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

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

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under

contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.7 FAILURE OF PAYMENT

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

§ 9.8 SUBSTANTIAL COMPLETION

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

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

9.8.2.1 When the Architect determines that the Work or designated portions thereof are substantially complete, the Architect will establish the date of Substantial Completion, as defined hereafter, and the date of acceptance of the Work by the Owner, through the use of a Certificate of Substantial Completion (AIA Doc. G704) and through other closing procedures which the Architect may direct. In any case, the Architect will prepare for submission to the Contractor a list of items to be completed or corrected, called the "punch list". The failure to include any item on the punch list shall not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

9.8.2.2 On the Certificate of Substantial Completion a time shall be fixed, not to exceed thirty (30) days, within which the Contractor shall finish all items on the final punch list accompanying the Certificate.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

9.8.6 ADDITIONAL SERVICES BY THE ARCHITECT

9.8.6.1 After the Certificate of Substantial Completion and punch list are issued to Contractor by Architect, the Architect will make one (1) site visit to review punch list items. This site visit will occur at the agreed upon completion time stated in the Certificate of Substantial Completion or at the Contractor's request which must be made not later than the completion time. If any additional visits by Architect are necessary to ascertain progress on punch list items, the Architect will be paid by the Contractor at the rate of three times direct personnel expense. These costs will be paid directly to the Architect by Contractor and shall be received prior to issue of final Certificate of Payment. The Contractor will be notified prior to the Architect starting this additional service.

§ 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

9.9.1.1 In addition to all other precautions required by the Contract, such as barricades, signs, warning lights, etc., to make the Work completely safe for public use, the Contractor shall provide and maintain dust-tight barriers to segregate areas occupied before Substantial Completion. Cost of barriers shall be paid by Contractor if Work is behind schedule and by Owner if Work is ahead of schedule.

9.9.1.2 The Owner moving equipment into areas of the Work will not constitute partial occupancy.

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

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

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

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

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

made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

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

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

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

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

9.10.6 The final payment will be made, including retained percentages, within 45 days after final acceptance of work, provided that the following conditions have been met:

- .1 All punch lists are satisfactorily completed
- .2 All required record drawings, MSDS forms, warranties and guarantees are provided.

9.10.7 The Contractor and each of his Subcontractors shall keep an accurate, legible, certified record of all payrolls during his project and for three (3) years after acceptance of the work performed and shall make said records available at any time to the Owner and Architect, if so requested. Such copies of payrolls shall be accompanied by proof satisfactory to the Architect and Owner that all bills for materials supplied have been duly paid and by such other data as the Owner may require. The Contractor shall not carry on his payroll employees of a subcontractor, but such employees must be carried on the payroll of the employing subcontractor.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

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

§ 10.2 SAFETY OF PERSONS AND PROPERTY

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

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.
- .4 Contractor shall, likewise, protect property the Owner requires to be temporarily stored in the areas of the Work, including furniture and furnishings delivered under separate contracts let by the Owner under Paragraph 6.1.
- .5 Contractor shall, likewise, protect the Owner's property in the areas of the Work, including furnishings, equipment and sundries, except items designated for disposal.

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

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

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

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

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

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 HAZARDOUS MATERIALS

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

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

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.

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

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

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

§ 10.4 EMERGENCIES

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 CONTRACTOR'S LIABILITY INSURANCE

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 Claims for bodily injury or property damage arising out of completed operations; and
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

11.1.2.1 During the term of the Contract, the Contractor shall, at his own expense, purchase and maintain the following insurance in companies properly licensed and satisfactory to Owner.

11.1.2.2 Workmen's Compensation including Occupational Disease and Employer's Liability Insurance:

- .1 State: Statutory amounts and coverage as required by Workmen's Compensation Laws.
- .2 Employer's Liability: \$500,000/\$500,000/\$500,000

11.1.2.3 Commercial/Comprehensive General Liability: Include coverage for direct operations, sublet work, contractual liability, completed operations and products liability, with limits not less than those stated below, which insurance shall fully protect the Contractor from claims for damages for bodily injury including accidental death, as well as claims for property damage and loss of use of property which may arise from activities under or incidental to the Contract, whether such activities be by the Contractor or any of his subcontractors, or by anyone directly or indirectly employed or otherwise contracted by any of them.

For Commercial Policies, the limits shall be:

- \$1,000,000 general aggregate
- \$2,000,000 products - completed/operations aggregate

For Comprehensive Policies the Combined Single Limits for Bodily Injury and Property Damage shall be:

- \$1,000,000 each occurrence
- \$2,000,000 aggregate

Policy shall be endorsed to have General Aggregate apply to this project only.

11.1.2.4 Personal Injury:

\$1,000,000 aggregate

11.1.2.5 Comprehensive Automobile Liability: Include coverage for owned, non-owned and hired vehicles - with limits not less than those state below:

Combined Single Limits for Bodily Injury and Property Damage:

- \$1,000,000 each person
- \$1,000,000 each occurrence

11.1.2.6 Property Damage: Include Broad Form Property Damage; that is, remove "XCU" exclusions (explosion, collapse, underground property damage.)

11.1.2.8 Umbrella Excess Liability: \$5,000,000 over primary insurance with no more restrictions than primary policies.

11.1.2.10 Proof of insurance shall be submitted to Owner on Standard ACORD Certificate of Insurance; and all certificates and policies shall indicate that the carrying company will not cancel without giving the Owner notice in writing ten (10) days prior to date cancellation is to become effective.

11.1.2.11 Contractor shall protect himself by requiring his subcontractors to maintain workmen's compensation insurance and insurance of the same kind in amounts specified above.

11.1.2.12 Contractor shall carry sufficient comprehensive insurance on his equipment at site of Work and en route to and from site to fully protect him; Contractor shall require same coverage of his subcontractors. It is expressly understood and agreed that Owner and/or Architect shall have no responsibility therefore.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such

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coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness. The Contractor shall provide written notification to the Owner of the cancellation or expiration of any insurance required by Section 11.1. The Contractor shall provide such written notice within five (5) business days of the date the Contractor is first aware of the cancellation or expiration or is first aware that the cancellation or expiration is threatened or otherwise may occur, whichever comes first.

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

§ 11.2 OWNER'S LIABILITY INSURANCE

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

§ 11.3 PROPERTY INSURANCE

§ 11.3.1 The Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

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

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

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

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

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

11.3.1.6 This insurance will be purchased and maintained by Owner and shall be subject to a maximum of \$1,000.00 deductible and all losses falling within the scope of the deductible amount shall be borne by the Contractor.

11.3.1.7 This insurance will not cover equipment such as tools owned by mechanics, or tools, sheds, hoists, canvasses, tarpaulins, mixers, scaffolding, staging and towers owned or rented by Contractor.

11.3.1.8 A copy of the insurance certificate for this coverage will be furnished to the Architect and Contractor upon purchase of the policy by the Owner. Any additional details about the policy's provisions will be promptly furnished by the Owner upon written request.

11.3.1.9 At the Contractor's option and expense, he may carry insurance not included under Property Insurance for coverage on equipment and materials that are in his possession for this project. See Article **REPLACEMENT OF BROKEN GLASS** in Specifications Section 01500 - *Special Requirements*.

§ 11.3.2 BOILER AND MACHINERY INSURANCE

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

§ 11.3.3 LOSS OF USE INSURANCE

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

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

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

§ 11.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. The Owner shall provide written notification to the Contractor of the cancellation or expiration of any insurance required by Sections 11.2 and 11.3. The Owner shall provide such written notice within five (5) business days of the date the Owner is first aware of the cancellation or expiration or is first aware that the cancellation or expiration is threatened or otherwise may occur, whichever comes first.

§ 11.3.7 WAIVERS OF SUBROGATION

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

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

§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

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

§ 11.4.2 Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished to the Owner.

11.4.3 Contractor shall furnish through a surety company Performance and Labor and Material Payment Bonds in an amount not less than the full amount of his Contract as security for the duration of the Contract and for 12 months after date of acceptance of the Work.

11.4.4 Premium for bonds shall be paid for by Contractor. Surety company shall use the American Institute of Architects Form A-312, which will be provided by the Architect to the successful contractor. The surety company must have a Best rating of "B" or better, must be licensed to do business in Illinois and must be acceptable to Owner and Architect. The bond form shall incorporate by reference all the Contract Documents as defined in the General Conditions.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

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

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

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of

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uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

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

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

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

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

12.2.6 Approval of any material or work at any stage of construction will not prevent its subsequent rejection for cause.

12.2.7 No election by the Owner to correct work shall constitute a waiver of any obligation of a surety upon its Performance and Labor and Material Payment Bonds.

§ 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 affected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 GOVERNING LAW

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

§ 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other.

If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

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

§ 13.3 WRITTEN NOTICE

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

§ 13.4 RIGHTS AND REMEDIES

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

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

§ 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

13.5.1.1 The testing and inspection agencies will be hired by the Contractor except as specified otherwise in the various Sections of the Specifications. The laboratory or inspection agency shall meet approval of the Architect/Owner and will perform or cause to be performed the tests indicated, to determine if specified results have been obtained.

13.5.1.2 The contractor shall prepare a testing schedule indicating the types of tests required by the Specifications and the times at which the tests need to be performed so as not to delay the work. The Contractor shall update the schedule as necessary and shall deliver copies to the Owner, Architect and the testing/inspection agencies.

13.5.1.3 The Contractor shall cooperate with testing/inspection agencies in all regards.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

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

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

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

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

§ 13.6 INTEREST

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

§ 13.7 TIME LIMITS ON CLAIMS

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

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 TERMINATION BY THE CONTRACTOR

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

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

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

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

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;

- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

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

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

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

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

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

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

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

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

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

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

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

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

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 CLAIMS

§ 15.1.1 DEFINITION

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

§ 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3 CONTINUING CONTRACT PERFORMANCE

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

15.1.3.1 Nothing in the requirements of the Subparagraph shall require the Owner to pay to the Contractor any sum claimed for work performed until the dispute involving the Claim sum is finally resolved.

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

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

§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

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

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

§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

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

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

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

§ 15.2 INITIAL DECISION

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have

passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

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

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

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

15.2.4.1 Failure to comply with the Architect's requests, as stated, shall be considered a waiver of the Claim.

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

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

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

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

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

§ 15.3 MEDIATION

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

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending

mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

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

§ 15.4 ARBITRATION

§ 15.4.1 All provisions throughout the General Conditions that establish Arbitration shall be deleted and shall form no part of the General Conditions of the Contract.

(Paragraphs deleted)

§ 15.4.4 CONSOLIDATION OR JOINDER

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

§ 15.4.4.2 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

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

ARTICLE 16 EQUAL OPPORTUNITY

16.1 POLICIES OF EMPLOYMENT TO BE MAINTAINED BY CONTRACTOR

16.1.1 The Contractor and all subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin or age. The Contractor shall take affirmative action to insure that applicants are employed and that employees are treated during employment without regard to their race, religion, color, sex, national origin or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available for employees and applicants for employment, notices setting forth the policies of non-discrimination.

16.1.2 The Contractor and all subcontractors shall, in all solicitations or advertisements for employees placed by them or on their behalf, state that all qualified applications will receive consideration for employment without regard to race, religion, color, sex, national origin or age.

ARTICLE 17 WAGE RATES

17.1 STATE OF ILLINOIS NEW PREVAILING WAGE ACT REQUIREMENTS

17.1.1 Effective August 10, 2005 the General Assembly amended the Prevailing Wage Act shown below.

.1 Sec. 5 Certified Payroll:

a) Any contractor and each subcontractor who participates in public works shall:

.1.1 make and keep, for a period of not less than 3 years from the date of the last payment made before January 1, 2014 (the effective date of Public Act 98-328) and for a period of 5 years from the date of the last payment made on or after January 1, 2014 (the effective date of Public Act 98-328) on a contract or subcontract for public works, records of all laborers, mechanics, and other workers employed by them on the project; the records shall include (i) the worker's name, (ii) the worker's address, (iii) the worker's telephone number when available, (iv) the worker's social security number, (v) the worker's classification or classifications, (vi) the worker's gross and net

wages paid in each pay period, (vii) the worker's number of hours worked each day, (viii) the worker's starting and ending times of work each day, (ix) the worker's hourly wage rate, (x) the worker's hourly overtime wage rate, (xi) the worker's hourly fringe benefit rates, (xii) the name and address of each fringe benefit fund, (xiii) the plan sponsor of each fringe benefit, if applicable, and (xiv) the plan administrator of each fringe benefit, if applicable; and

.1.2 no later than the 15th day of each calendar month file a certified payroll for the immediately preceding month with the public body in charge of the project. A certified payroll must be filed for only those calendar months during which construction on a public works project has occurred. The certified payroll shall consist of a complete copy of the records identified in paragraph (1) of this subsection (a), but may exclude the starting and ending times of work each day. The certified payroll shall be accompanied by a statement signed by the contractor or subcontractor or an officer, employee, or agent of the contractor or subcontractor which avers that: (i) he or she has examined the certified payroll records required to be submitted by the Act and such records are true and accurate; (ii) the hourly rate paid to each worker is not less than the general prevailing rate of hourly wages required by this Act; and (iii) the contractor or subcontractor is aware that filing a certified payroll that he or she knows to be false is a Class A misdemeanor. A general contractor is not prohibited from relying on the certification of a lower tier subcontractor, provided the general contractor does not knowingly rely upon a subcontractor's false certification. Any contractor or subcontractor subject to this Act and any officer, employee, or agent of such contractor or subcontractor whose duty as such officer, employee, or agent it is to file such certified payroll who willfully fails to file such a certified payroll on or before the date such certified payroll is required by this paragraph to be filed and any person who willfully files a false certified payroll that is false as to any material fact is in violation of this Act and guilty of a Class A misdemeanor. The public body in charge of the project shall keep the records submitted in accordance with this paragraph (2) of subsection (a) before January 1, 2014 (the effective date of Public Act 98-328) for a period of not less than 3 years, and the records submitted in accordance with this paragraph (2) of subsection (a) on or after January 1, 2014 (the effective date of Public Act 98-328) for a period of 5 years, from the date of the last payment for work on a contract or subcontract for public works. The records submitted in accordance with this paragraph (2) of subsection (a) shall be considered public records, except an employee's address, telephone number, and social security number, and made available in accordance with the Freedom of Information Act. The public body shall accept any reasonable submissions by the contractor that meet the requirements of this Section. A contractor, subcontractor, or public body may retain records required under this Section in paper or electronic format.

(b) Upon 7 business days' notice, the contractor and each subcontractor shall make available for inspection and copying at a location within this State during reasonable hours, the records identified in paragraph (1) of subsection (a) of this Section to the public body in charge of the project, its officers and agents, the Director of Labor and his deputies and agents, and to federal, State, or local law enforcement agencies and prosecutors.

(c) A contractor or subcontractor who remits contributions to fringe benefit funds that are jointly maintained and jointly governed by one or more employers and one or more labor organizations in accordance with the federal Labor Management Relations Act shall make and keep certified payroll records that include the information required under items (i) through (viii) or paragraph (1) of subsection (a) only. However, the information required under items (ix) through (xiv) of paragraph (1) of subsection (a) shall be required for any contractor or subcontractor who remits contributions to a fringe benefit fund that is not jointly maintained and jointly governed by one or more employers and one or more labor organizations in accordance with the federal Labor Management Relations Act.

(Source: P.A. 97-571, eff. 1-1-12; 98-328, eff. 1-1-14; 98-482, eff. 1-1-14; 98-756, eff. 7-16-14.)

(820 ILCS 130/5.1)

Sec. 5.1. Electronic database. Subject to appropriation, the Department shall develop and maintain an electronic database capable of accepting and retaining certified payrolls submitted under this Act. The database shall accept certified payroll forms provided by the Department that are fillable and designed to accept electronic signatures. (Source: P.A. 98-482, eff. 1-1-14.)

17.1.2 Each craft, type of worker and mechanic needed to execute the Contract shall be paid the prevailing wage rate, in accordance with all federal laws and laws of the State as well as local ordinances and regulations applicable to the work hereunder and having force of law, according to the locality in which the work is performed.

17.1.3 If, during the course of the Contract, the Department of Labor revises the prevailing wage rates, the Contractor shall have the sole responsibility and duty to ensure that wages paid, whether to employees of the Contractor or any

subcontractor, are paid according to the revised prevailing rates. Revisions of the prevailing wage rates shall not be cause for an increase in the Contract Sum.

17.1.4 Refer to Supplementary Instructions to Bidders for the Prevailing Wage Rates required for Winnebago County.

END OF GENERAL CONDITIONS

Init.

SECTION 011000
SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Access to site.
4. Coordination with occupants.
5. Work restrictions.
6. Specification and drawing conventions.
7. Miscellaneous provisions.

B. Related Requirements:

1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 PROJECT INFORMATION

- A. Project Identification: Addition & Renovations at Winnebago Animal Services, Rockford, Illinois

1. Project Location: 4715 N. Main Street, Rockford, Illinois 61103

- B. Owner: Winnebago County, 404 Elm Street, Rockford, Illinois 61101.

- C. Architect: Richard L Johnson Associates Architects, 4703 Charles Street, Rockford, IL 61108.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and consists of Addition & Renovations Work at Winnebago County Animal Services, Rockford, Illinois as identified on the drawings.

- B. Contractor is responsible for construction means, methods and sequencing. Architect will not have control over, be in charge of, or be responsible for construction means, methods, techniques, sequences, procedures or safety precautions and programs in connection with the Work, as these are solely within the responsibility of the Contractor. Architect shall not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents.

1.5 ACCESS TO SITE

- A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.
 - 1. Driveways, Walkways and Entrances: Keep driveways loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- B. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

1.6 COORDINATION WITH OCCUPANTS

- A. Partial Owner Occupancy: Owner will occupy the premises during entire construction period, with the exception of areas under construction. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations. Maintain existing exits unless otherwise indicated.
 - 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.
 - 2. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.

1.7 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
 - 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Normal business working hours will be 7:00 a.m. to 3:30 p.m., Monday through Friday. However, Contractor can work weekends and nights with prior notification to the Owner.

- C. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
 - 1. Notify Architect and Owner not less than two days in advance of proposed disruptive operations.
- D. Nonsmoking Building: Smoking is not permitted within the building or anywhere on the site.
- E. Controlled Substances: Use of tobacco products and other controlled substances on Project site is not permitted.

1.8 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
 - 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 - 2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.
 - 3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS & PART 3 – EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012300
ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
 - 1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
 - 2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

- A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
 - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration.
- C. Execute accepted alternates under the same conditions as other work of the Contract.
- D. Schedule: A schedule of alternates is included at the end of this Section.

PART 2 - EXECUTION

2.1 SCHEDULE OF ALTERNATES

- A. Alternate Bid # 1: Provide selective demolition and remodeling work associated with new rooms Reception A1, Waiting A2 and Office A3 as shown on drawings and as specified.
- B. Alternate Bid # 2: Provide for the replacement of Site Lighting Work as shown on drawings and as specified.
- C. Alternate Bid # 3: Provide all the work associated with replacement of existing rooftop units RTU 1, RTU-2 and RTU-3 as shown on drawings and as specified.
- D. Alternate Bid # 4: Provide all the work associated with providing electronic air filtering system to existing rooftop units RTU 1, RTU-2 and RTU-3 as shown on drawings and as specified.
- E. Alternate Bid # 5: Provide a 100% Performance & Payment Bond.

END OF SECTION 012300

CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

1.3 MINOR CHANGES IN THE WORK

- A. Architect will issue through Owner supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions."

1.4 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
 - 2. Within time specified in Proposal Request or 10 days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.

1. Include a statement outlining 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 the Contract Time.
2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's construction schedule.

1.5 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Work Changes Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701.
- B. General Contractor is allowed to mark up subcontractor's cost by 5%.
- C. General Contractor and Subcontractor is allowed to mark up self performed work by 10%.

1.6 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Work Change Directive: Architect may issue a Construction Work Change Directive on AIA Document G714 Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS & PART 3 – EXECUTION (Not Used)

END OF SECTION 012600

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 012900
PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Requirements:
 - 1. Section 012600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.

1.3 DEFINITIONS

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
 - 1. Coordinate line items in the schedule of values with other required administrative forms and schedules, including the following:
 - a. Application for Payment forms with continuation sheets.
 - b. Submittal schedule.
 - c. Items required to be indicated as separate activities in Contractor's construction schedule.
 - 2. Submit the schedule of values to Architect at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
 - 3. Subschedules for Phased Work: Where the Work is separated into phases requiring separately phased payments, provide subschedules showing values coordinated with each phase of payment.

- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
1. Identification: Include the following Project identification on the schedule of values:
 - a. Project name and location.
 - b. Name of Architect.
 - c. Architect's project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 2. Arrange schedule of values consistent with format of AIA Document G703.
 3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with Project Manual table of contents. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
 4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
 5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site. If required, include evidence of insurance.
 6. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.
 7. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.
- C. Payment Application Times: Submit Application for Payment to Architect by the 10th of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.

- D. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.
- E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect and/or Project Manager will return incomplete applications without action.
 - 1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
 - 2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- F. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Architect or Program Manager by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
 - 1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
 - 1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 - 2. When an application shows completion of an item, submit conditional final or full waivers.
 - 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 - 4. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.
- H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
 - 1. List of subcontractors.
 - 2. Schedule of values.
 - 3. Contractor's construction schedule (preliminary if not final).
 - 4. Submittal schedule (preliminary if not final).
 - 5. List of Contractor's staff assignments.
 - 6. List of Contractor's principal consultants.
 - 7. Copies of building permits.
 - 8. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 - 9. Initial progress report.
 - 10. Certificates of insurance and insurance policies.
 - 11. Performance and payment bonds.
- I. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
 - 1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 - 2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

- J. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 3. Updated final statement, accounting for final changes to the Contract Sum.
 4. AIA Document G706-1994, "Contractor's Affidavit of Payment of Debts and Claims."
 5. AIA Document G706A-1994, "Contractor's Affidavit of Release of Liens."
 6. AIA Document G707-1994, "Consent of Surety to Final Payment."

PART 2 - PRODUCTS & PART 3 – EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013100

PROJECT MANAGEMENT & COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. Coordination drawings.
 - 2. Requests for Information (RFIs).
 - 3. Project meetings.
- B. Related Requirements:
 - 1. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

1.3 DEFINITIONS

- A. RFI: Request from Owner, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
 - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
 - 2. Number and title of related Specification Section(s) covered by subcontract.
 - 3. Drawing number and detail references, as appropriate, covered by subcontract.

1.5 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's construction schedule.
 2. Preparation of the schedule of values.
 3. Installation and removal of temporary facilities and controls.
 4. Delivery and processing of submittals.
 5. Progress meetings.
 6. Preinstallation conferences.
 7. Project closeout activities.
 8. Startup and adjustment of systems.

1.6 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
 - a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
 - b. Coordinate the addition of trade-specific information to the coordination drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.

1.7 REQUESTS FOR INFORMATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
1. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.
 2. Project number.
 3. Date.
 4. Name of Contractor.
 5. Name of Architect.
 6. RFI number, numbered sequentially.
 7. RFI subject.
 8. Specification Section number and title and related paragraphs, as appropriate.
 9. Drawing number and detail references, as appropriate.
 10. Field dimensions and conditions, as appropriate.
 11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 12. Contractor's signature.
 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
- C. RFI Forms: AIA Document G716.
1. Attachments shall be electronic files in Adobe Acrobat PDF format.
- D. Architect's Action: Architect and will review each RFI, determine action required, and respond. Allow seven working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
1. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Architect's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.
 2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."

1.8 PROJECT MEETINGS

- A. General Contractor: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.

2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner, and Architect, within three days of the meeting.
- B. Preconstruction Conference: Architect will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect.
1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing and long-lead items.
 - d. Designation of key personnel and their duties.
 - e. Lines of communications.
 - f. Procedures for processing field decisions and Change Orders.
 - g. Procedures for RFIs.
 - h. Procedures for testing and inspecting.
 - i. Procedures for processing Applications for Payment.
 - j. Distribution of the Contract Documents.
 - k. Submittal procedures.
 - l. Preparation of record documents.
 - m. Use of the premises and existing building.
 - n. Work restrictions.
 - o. Working hours.
 - p. Owner's occupancy requirements.
 - q. Responsibility for temporary facilities and controls.
 - r. Procedures for moisture and mold control.
 - s. Procedures for disruptions and shutdowns.
 - t. Construction waste management and recycling.
 - u. Parking availability.
 - v. Office, work, and storage areas.
 - w. Equipment deliveries and priorities.
 - x. First aid.
 - y. Security.
 - z. Progress cleaning.
 3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Progress Meetings: General Contractor to conduct progress meetings at weekly intervals.
1. Coordinate dates of meetings with preparation of payment requests.
 2. Attendees: In addition to representatives of Owner, and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction 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.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Progress cleaning.
 - 10) Quality and work standards.
 - 11) Status of correction of deficient items.
 - 12) Field observations.
 - 13) Status of RFIs.
 - 14) Status of proposal requests.
 - 15) Pending changes.
 - 16) Status of Change Orders.
 - 17) Pending claims and disputes.
 - 18) Documentation of information for payment requests.
4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
 - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS & PART 3 – EXECUTION (Not Used)

END OF SECTION 013100

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 013300
SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. Contractor shall:
 - 1. Review each submittal:
 - a. Verify field dimensions.
 - b. Verify compliance with Contract requirements.
 - 2. Stamp submittals, certifying his review.
 - 3. Transmit reviewed submittals to Architect by way of the agreed transmittal form.
- C. Related Requirements:
 - 1. Section 012900 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
 - 2. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.4 SUBMITTALS

- A. The successful Contractor shall submit all of the items required to be submitted under the Conditions of Contract, as supplemented, including, but not necessarily limited to:
 - 1. Certificates of Insurance.
 - 2. Performance Bond and Payment Bond.
 - 3. List of Manufacturers or Materials.
 - 4. Schedule of Values.
 - 5. Employee Criminal Background Checks.
 - 6. Partial & Final Waivers.
 - 7. Construction Schedules.
 - 8. Certified Payrolls for each Contractor participating on job.
 - 9. Winnebago County Form WC-2 – Bidder’s Employee Utilization Form.

1.5 SHOP DRAWINGS AND PRODUCT DATA

- A. Shop Drawing Submission: Submit 2 blackline prints for Owner and Architect’s use plus number of copies required to be returned to the Contractor, unless specified otherwise, prepared by fabricator and submitted through Contractor to Architect for review. Shop Drawings shall bear verification of Contractor’s review and approval prior to submittal.

1.6 SAMPLES

- A. Contractor shall furnish for review, with reasonable promptness, all Samples as directed by the Architect. The Architect will check and review such Samples, with reasonable promptness, only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents.
- B. Samples shall include transmittal letter requesting Sample review. All Samples forwarded shall have transportation charges to Architect’s office prepaid.
- C. No material shall be ordered until receipt of written design conformance review of Sample submitted. The work shall be in accordance with reviewed Samples approved for design concept conformance.

1.7 MANUFACTURER’S INSTRUCTIONS

- A. Wherever the Contract Documents call for work to be performed, or materials to be installed in accordance with manufacturer’s instructions or directions, each installing contractor shall furnish 3 copies of the manufacturer’s printed instructions or directions to Architect at least 5 days before installing materials or performing work.

1.8 MAINTENANCE DATA

- A. At termination of work, submit 3 copies of maintenance cleaning information for care of finish surfaces.

1.9 MATERIAL SAFETY DATA SHEETS

- A. Should any material be installed in the Work for which a Material Safety and Data Sheet (MSDS) is required to be retained by the Owner under State regulations, the installing subcontractor shall submit the applicable MSDS forms to the Contractor for submission to the Owner upon completion of the Project.
- B. 3 MSDS forms shall be submitted for each item. Only official OSHA MSDS forms shall be used; copies will not be accepted.

1.10 GUARANTEES AND WARRANTIES

- A. The Contractor shall submit 3 copies of all guarantees and warranties to the Architect, who will then transmit them to the Owner.

1.11 RECORD DRAWINGS

- A. Record Drawings Required: At completion of Work and prior to final payment, Contractor shall provide Architect with complete, accurate, clean and legible record drawings made from a complete set of marked up Contract Drawings kept at the site, showing changes made to the Work during the course of the Contract.
- B. Preparation: Make 1 for the Owner using ink on a clean blackline set separate from the set used in the field to record the changes.

1.12 FORMS SUBMITTALS

- A. The following documents must be submitted as follows:
 - 1. The Bidder's Employee Utilization Form:
 - a. Requires a 5% minority, women owned goal.
 - b. Subcontractors must be listed along with if they are a minority or women owned business.
 - c. It is not required to be submitted with the bid, but must be filled out by the successful bidder and submitted to the Owner before any work may begin.
 - 2. The Subcontractors list contained in the Bid Form will be required to be completed and submitted within 24 hours after the bid opening. Bidder's failure to submit the completed list may result in disqualification of Bid.
 - 3. Certified payroll are required to be submitted for each Contractor participating on this project. At a minimum this certified payroll must be submitted with each pay request.

PART 2 - PRODUCTS & PART 3 - EXECUTION (NOT USED)

END OF SECTION 013300

SECTION 014200
REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless 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 to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
 - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.4 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in the following list:
 - 1. AA – Aluminum Association (The).
 - 2. AIA - American Institute of Architects (The); www.aia.org.
 - 3. AISC - American Institute of Steel Construction; www.aisc.org.
 - 4. AISI - American Iron and Steel Institute; www.steel.org.
 - 5. ANSI - American National Standards Institute; www.ansi.org.
 - 6. ASTM - ASTM International; www.astm.org.
 - 7. AWPA - American Wood Protection Association; www.awpa.com.
 - 8. CSI - Construction Specifications Institute (The); www.csinet.org.
 - 9. DASMA - Door and Access Systems Manufacturers Association; www.dasma.com.
 - 10. DHI - Door and Hardware Institute; www.dhi.org.
 - 11. GANA - Glass Association of North America; www.glasswebsite.com.
 - 12. ICBO - International Conference of Building Officials; (See ICC).
 - 13. ICC - International Code Council; www.iccsafe.org.
 - 14. IGMA - Insulating Glass Manufacturers Alliance; www.igmaonline.org.
 - 15. NFPA - National Fire Protection Association; www.nfpa.org.
 - 16. NFPA - NFPA International; (See NFPA).
 - 17. NFRC - National Fenestration Rating Council; www.nfrc.org.
 - 18. NOMMA - National Ornamental & Miscellaneous Metals Association; www.nomma.org.
 - 19. SPIB - Southern Pine Inspection Bureau; www.spib.org.
 - 20. UL - Underwriters Laboratories Inc.; www.ul.com.
 - 21. WCMA - Window Covering Manufacturers Association; www.wcmanet.org.
 - 22. WDMA - Window & Door Manufacturers Association; www.wdma.com.
 - 23. WWPA - Western Wood Products Association; www.wwpa.org.

- B. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is believed to be accurate as of the date of the Contract Documents.
1. ICC - International Code Council; www.iccsafe.org.
 2. ICC-ES - ICC Evaluation Service, LLC; www.icc-es.org.
- C. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Information is subject to change and is up to date as of the date of the Contract Documents.
1. CPSC - Consumer Product Safety Commission; www.cpsc.gov.
 2. DOC - Department of Commerce; National Institute of Standards and Technology; www.nist.gov.
 3. DOE - Department of Energy; www.energy.gov.
 4. EPA - Environmental Protection Agency; www.epa.gov.
 5. FG - Federal Government Publications; www.gpo.gov.
 6. LBL - Lawrence Berkeley National Laboratory; Environmental Energy Technologies Division; www.eetd.lbl.gov.
 7. OSHA - Occupational Safety & Health Administration; www.osha.gov.
- D. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.
1. FED-STD - Federal Standard; (See FS).

PART 2 - PRODUCTS & PART 3 – EXECUTION (Not Used)

END OF SECTION 014200

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 015000

TEMPORARY FACILITIES & CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

1.3 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Architect, testing agencies, and authorities having jurisdiction.
- B. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

PART 2 - PRODUCTS

2.1 TEMPORARY FACILITIES

- A. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
 - 1. Store combustible materials apart from building.
- B. Contractors personnel must use contractor supplied toilet facilities.

2.2 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

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

3.2 SUPPORT FACILITIES INSTALLATION

- A. General: Provide sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241
- B. Parking: Use designated areas of Owner's existing parking areas for construction personnel.
- C. Waste Disposal Facilities: Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."
- D. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
 - 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

3.3 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
- B. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- C. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.

END OF SECTION 015000

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 016000
PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
 - 1. Section 014200 "References" for applicable industry standards for products specified.

1.3 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.4 ACTION SUBMITTALS

- A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
 - 2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
 - a. Form of Approval: As specified in Section 013300 "Submittal Procedures."
 - b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 013300 "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
 - 1. Schedule delivery to minimize long-term storage at Project 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 Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
- C. Storage:
 - 1. Store products to allow for inspection and measurement of quantity or counting of units.
 - 2. Store materials in a manner that will not endanger Project structure.

3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.

1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
 1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
 3. See other Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Architect will make selection.

5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
3. Products:
 - a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 - b. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.
4. Manufacturers:
 - a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 - b. Nonrestricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.
5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

- C. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:
1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 3. Evidence that proposed product provides specified warranty.
 4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
 5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017300
EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. Installation of the Work.
 - 4. Cutting and patching.
 - 5. Coordination of Owner-installed products.
 - 6. Progress cleaning and final cleaning.
 - 7. Starting and adjusting.
 - 8. Protection of installed construction.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for limits on use of Project site.
 - 2. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

1.3 DEFINITIONS

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

1.4 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
 - a. Refer to Unit Specifications.
2. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 1. Examine walls for suitable conditions where products and systems are to be installed.
 2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- B. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

- B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- C. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Section 013100 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.

3.4 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages.

- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.5 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Temporary Support: Provide temporary support of work to be cut.
- C. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- D. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 011000 "Summary."
- E. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Proceed with patching after construction operations requiring cutting are complete.
- F. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.

3. Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 4. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- G. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.6 PROGRESS AND FINAL CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
 3. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 017419 "Construction Waste Management and Disposal."

- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.
- K. Provide final cleaning of all disturbed areas. Clean all glass and frames.

3.7 STARTING AND ADJUSTING

- A. Confirm proper operation of components. Remove malfunctioning units, replace with new units and retest.
- B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

3.8 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

END OF SECTION 017300

SECTION 017419

CONSTRUCTION WASTE MANAGEMENT & DISPOSAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Disposing of nonhazardous construction waste.

1.3 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
 - 1. Comply with operation, termination, and removal requirements in Section 015000 "Temporary Facilities and Controls."
- B. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

3.2 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
 - 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.
- C. Disposal: Remove waste materials from Owner's property and legally dispose of them.

END OF SECTION 017419

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 017700
CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final completion procedures.
 - 3. Warranties.
 - 4. Final cleaning.
 - 5. Repair of the Work.
- B. Related Requirements:
 - 1. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

1.3 ACTION SUBMITTALS

- A. Product Data: For cleaning agents.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.4 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.6 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.

- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, and similar final record information.
 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number where applicable.
 5. Submit test/adjust/balance records.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Advise Owner of pending insurance changeover requirements.
 2. Perform preventive maintenance on equipment used prior to Substantial Completion.
 3. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
 4. Participate with Owner in conducting inspection and walkthrough.
 5. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 6. Complete final cleaning requirements, including touchup painting.
 7. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for final completion.

1.7 FINAL COMPLETION PROCEDURES

- A. Preliminary procedures: Before requesting final inspection for determining final completion, complete the following:
 - 1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
 - 2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 - 3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
 - 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.8 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
 - 1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
 - 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
 - 3. Submit list of incomplete items in the following format:
 - a. MS Excel electronic file. Architect, will return annotated file.
 - b. Three paper copies. Architect will return two copies.

1.9 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
 - 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.

2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark 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 Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

1.10 ELECTRONIC CLOSEOUT DOCUMENTATION

- A. General: Provide a complete project Closeout Documentation Package in electronic format. This package shall include:
 1. Project Record Documents.
 2. Approved submittals.
 3. Operation and Maintenance Manuals.
 4. Warranties.
 5. Project Contact Directory.

PART 2 - PRODUCTS

2.1 MATERIALS

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

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.

- c. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - d. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - e. Remove debris and surface dust from limited access spaces.
 - f. Sweep concrete floors broom clean in unoccupied spaces.
 - g. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
 - h. Clean transparent materials, including and in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish glass, taking care not to scratch surfaces.
 - i. Remove labels that are not permanent.
 - j. Leave Project clean and ready for occupancy.
- C. Construction Waste Disposal: Comply with waste disposal requirements in Section 017419 "Construction Waste Management and Disposal."

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
 - 1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
 - 2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.
 - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
 - 3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.

END OF SECTION 017700

DIVISION 01 – GENERAL REQUIREMENTS
SECTION 017839
PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. 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 Requirements:
1. Section 017300 "Execution" for final property survey.
 2. Section 017700 "Closeout Procedures" for general closeout procedures.

1.3 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
1. Number of Copies: Submit one set of marked-up record prints.
 2. Number of Copies: Submit copies of record Drawings as follows:
 - a. Initial Submittal:
 - 1) Submit one paper-copy set(s) of marked-up record prints.
 - 2) Submit PDF electronic files of scanned record prints and one of file prints.
 - 3) Submit record digital data files and one set of plots.
 - 4) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
 - b. Final Submittal:
 - 1) Submit three paper-copy sets of marked-up record prints.
 - 2) Submit PDF electronic files of scanned record prints and three sets of prints.
 - 3) Print each drawing, whether or not changes and additional information were recorded.
- B. Record Specifications: Submit one paper copy and PDF electronic files of Project's Specifications, including addenda and contract modifications.

- C. Record Product Data: Submit one paper copy and PDF electronic files and directories of each submittal.
 - 1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
 - 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 provide information for preparation of corresponding 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 acceptable drawing technique.
 - c. Record data as soon as possible after obtaining it.
 - 2. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
 - 3. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 - 4. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Architect. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
 - 1. Format: Same digital data software program, version, and operating system as the original Contract Drawings.
 - 2. Format: DWG, Version, Microsoft Windows operating system.
 - 3. Format: Annotated PDF electronic file with comment function enabled.
 - 4. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
 - 5. Refer instances of uncertainty to Architect for resolution.
 - 6. Architect will furnish Contractor one set of digital data files of the Contract Drawings for use in recording information.
- C. 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. Format: Annotated PDF electronic file with comment function enabled.

3. Record Digital Data Files: Organize digital data 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 digital data 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.
 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 manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 4. Note related Change Orders, record Product Data, and record Drawings where applicable.
- B. Format: Submit record Specifications as scanned PDF electronic file(s) of marked-up paper copy of Specifications.

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 Specifications, and record Drawings where applicable.
- B. Format: Submit record Product Data as annotated PDF electronic file and paper copy.

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 revisions to project record documents as they occur; do not wait until 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 017839

DIVISION 2 – EXISTING CONDITIONS

SECTION 024119 SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building or structure.
2. Demolition and removal of selected site elements.

B. Related Requirements:

1. Section 004323 "Alternates" for Alternate Bid Work designated for this section.
2. Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.
3. Section 017300 "Execution" for cutting and patching procedures.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.
- B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse or store as instructed by Architect.
- C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.
- D. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.
- E. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.

1.5 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials:
 - 1. Hazardous materials will be removed by Owner before start of the Work.
 - 2. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.

1.6 COORDINATION

- A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.

- C. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.
 - 1. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
 - 2. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.

3.3 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 - 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 - 2. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 - 3. Cover and protect furniture, furnishings, and equipment that have not been removed.
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
 - 1. Strengthen or add new supports when required during progress of selective demolition.
- C. Remove temporary barricades and protections where hazards no longer exist.

3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 - 1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.

2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
5. Maintain fire watch during and for at least 2 hours after flame-cutting operations.
6. Maintain adequate ventilation when using cutting torches.
7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
10. Dispose of demolished items and materials promptly. Comply with requirements in Section 017419 "Construction Waste Management and Disposal."

B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

C. Removed and Salvaged Items (When requested by Architect):

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area on-site designated by Owner.
5. Protect items from damage during transport and storage.

D. Removed and Reinstalled Items (When requested by Architect):

1. Clean and repair items to functional condition adequate for intended reuse.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition, cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove demolition waste materials from Project site and dispose of them according to Section 017419 "Construction Waste Management and Disposal."

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
4. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

B. Burning: Do not burn demolished materials.

3.6 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

DIVISION 03 – CONCRETE
SECTION 033000
CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes:
 - 1. Cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, insulation and finishes.
 - 2. Cast-in-place concrete stoops, foundations walls and footings.
 - 3. Perimeter rigid insulation
 - 4. Hand rub all exposed concrete foundation walls.
 - 5. Sealed Concrete.
- B. Related Requirements:
 - 1. Section 096513 "Resilient Flooring and Base".
 - 2. Section 312000 "Earthwork" for drainage fill under interior slabs-on-grade.

1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash, slag cement, other pozzolans, and silica fume; materials subject to compliance with requirements.
- B. W/C Ratio: The ratio by weight of water to cementitious materials.

1.4 SUBMITTALS

- A. Process all submittals per requirements in Section 013300 – Submittal Procedures.
- B. Shop Drawings: Submit Shop Drawings pertaining to fabrication, bending and placement of concrete reinforcements.
 - 1. Comply with the ACI 315 “Manual of Standard Practice for Detailing Reinforced Concrete Structures.”
 - 2. Show bar schedules, diagrams of bent bars, and arrangements of concrete reinforcement. Include special reinforcement required at openings through concrete structures.

- C. Test Reports: Submit 3 copies of laboratory test reports for concrete materials and mix design tests including potential for alkali-silica reaction (ASR).
- D. Product Data: Submit manufacturer's data on fiber reinforcement, additives, curing agents, sealers, grouts, joint materials and similar pre-manufactured products.
- E. Certificates: Submit purchase receipt verifying grade and quantity of under-slab vapor barrier.
- F. Concrete Truck Delivery Tickets: Submit delivery tickets indicating:
 - 1. Delivery date and time dispatched.
 - 2. Name and location of project.
 - 3. Name of Contractor.
 - 4. Name of ready-mixed concrete producer.
 - 5. Truck number.
 - 6. Number of cubic yards of concrete in load.
 - 7. Class of concrete.
 - 8. Cement content in bags per cubic yard of concrete.
 - 9. Type and brand name of cement.
 - 10. Names and quantities of admixtures used.
 - 11. Maximum size of aggregate.
 - 12. Amount of water added at job, if any, and who authorized the addition.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.
- B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
- C. Cooperate with other trades regarding installation of embedded items. Obtain templates, dimension, instructions, etc., from other trades or other contractors as required for setting items in concrete work.
- D. The Owner shall employ a reputable testing laboratory to perform concrete inspections and tests as hereinafter specified. The costs for testing shall be paid for by the Owner, except as hereinafter specified under FIELD QUALITY CONTROL TESTS.
- E. Comply with the latest edition of each of the following:
 - 1. "Building Code Requirements for Reinforced Concrete" (ACI 318).
 - 2. "Specifications for Ready Mixed Concrete" (ASTM C 94).
 - 3. "Guide to Concrete Floor and Slab Construction" (ACI 302.1).
 - 4. "Recommended Practice for Hot Weather Concreting" (ACI 305).
 - 5. "Recommended Practice for Winter Concreting" (ACI 306).
 - 6. "Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete" (ACI 304).
 - 7. "Specifications for Structural Concrete for Buildings" (ACI 301).

- F. Inform personnel that may be working with concrete as to requirements and the availability of ACI 301.
- G. Provide protection during the construction period for all floor slabs, from oil, grease, stains, discoloration and other physical damage.
- H. Welding Qualifications: Qualify procedures and personnel according to AWS D1.4/D 1.4M.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

1.7 FIELD CONDITIONS

- A. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
 - 1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
 - 2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
 - 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.
- B. Hot-Weather Placement: Comply with ACI 301 and as follows:
 - 1. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 - 2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

- A. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
 - 1. ACI 301.
 - 2. ACI 117.

2.2 FORM MATERIALS

- A. Form Facings for Unexposed Concrete: Plywood, lumber, metal or other acceptable material. Provide lumber dressed on at least 2 edges and one side for tight fit.
- B. Form Coatings: Commercial formulation intended for form coating which will not bond with, stain, or adversely affect concrete surfaces, and which will not impair bond or adhesion of subsequent treatments nor impede wetting of surfaces to be cured with water or curing compound.
- C. Form Ties:
 - 1. Factory-fabricated, removable or snap-off glass-fiber-reinforced plastic or metal form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
 - 2. Configured so as to leave no metal closer than 1" to the surface of the concrete.

2.3 STEEL REINFORCEMENT

- A. Materials
 - 1. Reinforcing Bars: ASTM A 615, Grade 60, deformed.
 - 2. Tie Wire: Cold drawn steel wire meeting ASTM A 82.
 - 3. Welded Wire Fabric: Per ASTM A 185.
 - 4. Reinforcing Bar Holders: Galvanized or plastic coated when within 3/4" of exposed concrete surface.
- B. Fabrication:
 - 1. No lapped splices for tension and compression bars unless noted on the Drawings or approved. Locate splices in temperature bars so that no more than half the bars are spliced at any point. Lap splices 36 diameters.
 - 2. Label bars to identify grade of steel and to facilitate placing.
- C. Deformed-Steel Welded-Wire Reinforcement: ASTM A 1064/A 1064M, flat sheet.

2.4 CONCRETE MATERIALS

- A. Portland Cement: ASTM C 150, Type I for normal and Type III for high-early-strength.
- B. Mixing Water: Fresh, free of oil, acid, alkalis, salts, organic matter and potable.
- C. Aggregates: Per ASTM C 33, including freedom from potentially reactive constituents, as well as soft, thin elongated or laminated pieces, disintegrated stone, plant matter, trash and lumps of frozen or partly cemented material.
 - 1. ASR Tested: Per ASTM C 1260. Submit test results.
 - 2. Fine Aggregate: Natural hard, clean sand.
 - 3. Coarse Aggregate: Gravel or crushed rock.
 - a. Size 57 (1-1/2" top size) for structural elements 6" or more in thickness.
 - b. Size 67 (3/4" top size) for slabs.
 - 4. Furnish 3 copies of testing laboratory reports showing sieve analysis.

D. Admixtures:

1. Air-Entraining Admixture: Per ASTM C 260. Use one of the following:
 - a. "Darex AEA" by W.R. Grace.
 - b. "Sika AER" by Sika Chemical Corp.
 - c. "MB-VR" by Master Builders Co.
2. Water-Reducing Admixtures: Per ASTM C 494; one of the following:
 - a. "Pozzolith" by Master Builders Company.
 - b. "Plast-o-Crete" by Sika Chemical Co.
 - c. "WRDA" by W.R. Grace.
3. Calcium Chloride: Shall NOT be used. Neither calcium chloride nor admixtures containing chloride salts shall be added to concrete.

2.5 ACCESSORY MATERIALS

A. Rigid Perimeter Foundation Insulation: Closed cell extruded polystyrene foam board insulation 3" thick, complying with ASTM C 578, Type IV, in manufacturer's standard sizes.

1. Minimum R-value, per 1" thickness at 40°F: 5.7.
2. Minimum compressive strength: 25 psi.
3. Maximum water absorption: 0.15% by volume.

B. Vapor Barrier:

1. Black low-density polyethylene film 15 mils (.015") thick to maintain a permeance of less than .01 Perms and comply with ASTM E 1745 Class A.
 - a. "Stego Wrap (15 mil)" by Stego Industries.
 - b. "EcoShield E-15" by Epro Services.
 - c. "Iron Barr 15 mil" by FlatIron Films
 - d. "Viporcheck II 15 mil" by Vipor.
2. Joint and Sealing Tape: Moisture barrier manufacturer's recommended tape.

C. Curing Materials:

1. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yd., conforming to AASHTO M 182, Class 3.
2. Moisture-Retaining Cover: Waterproof paper, polyethylene film or polyethylene coated burlap conforming to ASTM C 171.
3. Curing Compound: Liquid, membrane forming compound conforming to ASTM C 309, Type 1, with fugitive dye, and guaranteed to not affect the bond, adhesion or effectiveness of floor hardeners or other applied finishes or surface treatments. Product shall be one of the following:
 - a. "Masterseal" by Master Builder's Co.
 - b. "Kure-N-Seal" by Sonneborn.
 - c. "Sika-Gard C/H" by Sika Chemical Co.
 - d. "CS-309" by W.R. Meadows.
 - e. "Clearbond" by Guardian Chemical Co.
 - f. "Resi Chem Clear Cure" by Symons Corp.

- D. Sealed Concrete as Called for on the Room Finish Schedule: Transparent hardening liquid:
 - 1. Basis of Design: "Ashford Formula" by Curecrete Distribution, Inc.
 - 2. This shall be installed after the concrete has been installed and cured.
- E. Dovetail Inserts: Sheet metal inserts conforming to ASTM A1008 and galvanized per ASTM A653 Class G60 (0.6oz/ft²):
 - 1. "Dovetail Anchor Slots: Hot dipped galvanized steel sheet, not less than 0.0336 inch thick, with bent tab anchors. temporarily fill or cover face opening of slots to prevent intrusion of concrete or debris.

2.6 PROPORTIONING AND DESIGN OF MIXES

- A. Use an independent testing facility experienced in concrete mix design and acceptable to Owner for preparation of proposed mix designs. The testing facility shall not be the same used for field quality control testing unless otherwise acceptable to Owner.
- B. Allow a minimum of 14 days prior to placing concrete for testing laboratory to design the mix for each type of concrete required.
- C. The adequacy of the design mix shall be verified by tests on a minimum of 6 cylinders; 3 tested at least 7 days and 3 at 28 days in accordance with ASTM C 192 and C 39 and by slump tests in accordance with ASTM C 143.
- D. Submit 3 copies of the mix design and test results to Owner's Representative for review before any concrete is placed.
- E. Concrete for exterior stoops and foundations shall have a maximum water-cement ratio of 5-1/4 gallons per bag and shall maintain a slump of 3". Incorporate an air entraining admixture yielding a total air content by volume of 4.5% to 7.5% for 3/4" top-sized aggregate and 4% to 7% for 1-1/2" top sized aggregate. Refer to drawings for compressive strength.
- F. Concrete for slabs and interior foundations shall have a maximum water-cement ratio of 6-1/2 gallons per bag and shall maintain a slump no greater than 4". Refer to drawings for compressive strength.
- G. Calcium chloride or admixtures containing chloride salts shall not be used.

2.7 CONCRETE MIXING

- A. Ready-Mixed Concrete: Mix and transport in accordance with ASTM C 94, "Specification for Ready-Mixed Concrete" and the established mix design.
- B. Batch mixing at the site will not be allowed except on prior approval
- C. Use admixtures only as specified in the established mix design.

PART 3 - EXECUTION

3.1 RIGID PERIMETER FOUNDATION INSULATION

- A. Apply insulation to the inside of exterior foundation walls, from under the floor slab down to the top of the footing. Apply under the floor slab from the exterior foundation wall to 2 feet under the slab.

3.2 VAPOR-RETARDER INSTALLATION

- A. Install vapor barrier directly under all interior concrete slabs on grade. Place barrier over the granular fill just before placement of the concrete; but do not place barrier until the granular fill has been inspected for compaction and grading per the requirements of Section 312000 - Earthwork for Building.
- B. Lap the membrane sheet edges at least 6", with the top placed in the direction of the spreading of the concrete, and seal each seam continuously with approved waterproof tape. Turn membrane up on to wall and seal with tape to wall.
- C. Seal all around pipes, conduits and other penetrations with tape.
- D. Apply tape only to dry surfaces cleaned of dirt and other contaminants.
- E. Just before membrane is to be covered, inspect membrane and repair all tears and visible holes with membrane manufacturer's recommended sealing tape. For tears more than 12" long, lap a scrap piece of material to 12" beyond each side of the tear and seal all of the edges with tape.

3.3 FORMWORK INSTALLATION

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Limit concrete surface irregularities, designated by ACI 347.
- D. Construct forms tight enough to prevent loss of concrete mortar.
- E. Construct forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast-concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
 - 1. Install keyways, recesses, and the like, for easy removal.
 - 2. Do not use rust-stained steel form-facing material.
- F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

- G. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- H. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- I. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.4 REMOVING AND REUSING FORMS

- A. General: Formwork for sides of walls, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations, and curing and protection operations need to be maintained.
 - 1. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.
- B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material are not acceptable for exposed surfaces. Apply new form-release agent.
- C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.5 SHORING AND RESHORING INSTALLATION

- A. Comply with ACI 318 and ACI 301 for design, installation, and removal of shoring and reshoring.
 - 1. Do not remove shoring or reshoring until measurement of slab tolerances is complete.
- B. Plan sequence of removal of shores and reshore to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection.

3.6 STEEL REINFORCEMENT INSTALLATION

- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
 - 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that reduce bond to concrete.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
 - 1. Weld reinforcing bars according to AWS D1.4/D 1.4M, where indicated.

- D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.
- E. Install welded-wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

3.7 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
 - 1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
 - 2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete.
 - 3. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows:
 - 1. Sawn Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
- D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
 - 1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless otherwise indicated.
 - 2. Terminate full-width joint-filler strips not less than 1/2 inch or more than 1 inch below finished concrete surface where joint sealants, specified in Section 079200 "Joint Sealants," are indicated.
 - 3. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.
- E. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

3.8 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections are completed.

- B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect.
- C. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.
- D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
 - 1. Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid inclined construction joints.
 - 2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
 - 3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.
- E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
 - 1. Consolidate concrete during placement operations, so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 - 2. Maintain reinforcement in position on chairs during concrete placement.
 - 3. Screed slab surfaces with a straightedge and strike off to correct elevations.
 - 4. Concrete slabs shall not slope to drains. Drains to be set level with floor.
 - 5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

3.9 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
 - 1. Apply to concrete surfaces not exposed to public view.
 - 2. Prepare exterior face of perimeter wall which is to receive membrane waterproofing.

3.10 FINISHING FLOORS, SLABS AND STOOPS

- A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of 1/4 inch in one direction.

- C. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power-driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.
 - 1. Apply float finish to surfaces indicated to receive trowel finish.
- D. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
 - 1. Apply a trowel finish to surfaces exposed to view.
 - 2. Finish surfaces to the following tolerances, according to ASTM E 1155, for a randomly trafficked floor surface:
 - 3. Finish and measure surface, so gap at any point between concrete surface and an unlevelled, freestanding, 10-ft. long straightedge resting on two high spots and placed anywhere on the surface does not exceed 1/4 inch.
- E. Broom Finish: Apply to exterior concrete stoops.
 - 1. After the concrete has been floated and is sufficiently harden such that broom marks will not be more than 1/16" deep, brush surface with a stiff, medium bristled broom. Make the broom strokes all in one direction. Make broom strokes on sloped surfaces perpendicular to direction of slope.

3.11 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for remainder of curing period.
- D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.
- E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
 - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
 - a. Water.
 - b. Continuous water-fog spray.

- c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
- 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period, using cover material and waterproof tape.
- 3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
 - a. Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer.

3.12 JOINT FILLING

- A. Prepare, clean, and install joint filler according to manufacturer's written instructions.
 - 1. Defer joint filling until concrete has aged at least one month. Do not fill joints until construction traffic has permanently ceased.
- B. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

3.13 MISCELLANEOUS CONCRETE WORK

- A. Exterior Door Stoops:
 - 1. The stoop foundations shall be in sizes as shown on the drawings with No. 4 bars at 12" o.c. as minimum reinforcement. Slab shall be minimum thickness of 4" and the walls shall be a minimum thickness of 6". Provide 1/2" preformed filler strips in joints at junctions with walls, walks, etc., where shown. Hold top edge of filler strips 1/2" below finished surface of concrete.
 - 2. Provide No. 4 dowels at 12" o.c. into platform slabs from building foundation wall.
 - 3. Slope stoop slabs 1/8" to 1/4" per foot to drain away from building.
 - 4. All stoops shall be provided with expansion joints and/or control joints as indicated on the Drawings and/or as directed by the Architect.
- B. Exposed concrete foundation walls: All exposed concrete foundation walls shall be rubbed as soon as the forms have been removed. A slurry coat over the concrete is not acceptable.

3.14 FIELD QUALITY CONTROL

- A. Cooperate with the laboratory in every respect by arranging material for sampling and supplying necessary facilities at the job site for making the field tests and storing specimens.

- B. Tests shall be made for each 50 cubic yards of concrete or fraction thereof, but not less than 2 for each day's pour. Perform the following tests:
1. Compression Test: Make a minimum of 3 standard 6"x12" cylinders for testing, one at the age of 7 days, and one for testing at 28 days, unless otherwise directed. If compression tests are to be used for determining when forms may be removed, make at least 2 additional cylinders and cure on job site in accordance with ASTM C 31.
 2. Tests for Air-Entrainment: Per ASTM C 231, on a random basis, as determined by the Owner's Representative.
 3. Slump Test: Per ASTM C 143. Contractor shall provide cone and make tests whenever requested by Owner's Representative. Test each and every truckload. 1/2" tolerance allowed each way.
 4. Additional Tests: If, in the opinion of the Owner's Representative there is any question as to the quality of the concrete already placed, make additional tests as directed. Tests may be either compression tests on cored cylinders, per ASTM C 42; or load tests as outlined in ACI 318; or as directed. These tests shall be paid for by the Contractor.
- C. Evaluation of Tests: In accordance with ACI 214-83.
- D. Test Reports: Furnish for all tests. Report must show exact location of work represented by samples and tests.

END OF SECTION 033000

SECTION 042000
UNIT MASONRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Concrete masonry units.
2. Split-faced concrete block.
3. Mortar and grout.
4. Steel reinforcing bars.
5. Masonry-joint reinforcement.
6. Embedded flashing.
7. Miscellaneous masonry accessories.

B. Related Requirements:

1. Section 004323 "Alternates" for Alternate Bid Work designated for this section.
2. Section 033000 "Cast-in-Place Concrete" for masonry setting.
3. Section 055000 "Metal fabrications" for loose lintels.
4. Section 076200 "Sheet Metal Flashing and Trim" for sheet metal flashing and for furnishing manufactured installed in masonry joints.
5. Section 079200 "Joint Sealants" for sealants associated with masonry.
6. Section 081113 "Hollow Metal Door Frames" for hollow metal frames set in masonry walls.
7. Section 084113 "Aluminum Framed Entrance" for aluminum door frames set in masonry wall.
8. Section 085113 "Aluminum Storefront Windows" for aluminum window frames set masonry walls.
9. Section 099113 "Painting" masonry walls painting.

1.3 DEFINITIONS

- A. CMU(s): Concrete masonry unit(s).
- B. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.4 SUBMITTALS

- A. Product Data: For each type of product.
1. Masonry Units: Show sizes, profiles, coursing, and locations of special shapes.
 2. Masonry ties and reinforcing steel.

3. Fabricated In-wall and thru-wall flashing.
 4. Mortar and grout materials including additives.
 5. Mortar and grout mix compositions.
 6. Masonry control joint accessories.
- B. Submit laboratory test results for mortar and masonry units including design data for grout mixes when grout is to be pumped.
- C. Samples for Verification: For each type and color of the following:
1. Split-faced block.
 2. Pigmented and colored-aggregate mortar. Make Samples using same sand and mortar ingredients to be used on Project.
- D. Qualification Data: For testing agency.
- E. Material Certificates: For each type and size of the following:
1. Masonry units: Include data on material properties
 2. Cementitious materials. Include name of manufacturer, brand name, and type.
 3. Mortar admixtures.
 4. Preblended, dry mortar mixes. Include description of type and proportions of ingredients.
 5. Grout mixes. Include description of type and proportions of ingredients.
 6. Reinforcing bars.
 7. Joint reinforcement.
 8. Anchors, ties, and metal accessories.
- F. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.
1. Include test reports for mortar mixes required to comply with property specification. Test according to ASTM C 109/C 109M for compressive strength, ASTM C 1506 for water retention, and ASTM C 91/C 91M for air content.
 2. Include test reports, according to ASTM C 1019, for grout mixes required to comply with compressive strength requirement.
- G. Statement of Compressive Strength of Masonry: For each combination of masonry unit type and mortar type, provide statement of average net-area compressive strength of masonry units, mortar type, and resulting net-area compressive strength of masonry determined according to TMS 602/ACI 530.1/ASCE 6.
- H. Cold-Weather and Hot-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with requirements.

1.5 CODES AND STANDARDS

- A. In addition to complying with all pertinent codes and regulations, comply with:
1. Standards of masonry installation described in the recommendations of:
 - a. National Concrete Masonry Association (NCMA).
 - b. Masonry Standards Joint Committee (MSJC) Spec. (ACI 530.1/ASCE 6/TMS 602).

1.6 QUALITY ASSURANCE

- A. Sources of Supply: Obtain each kind of masonry units from one manufacturer, of uniform texture and color or uniform blend in the variation thereof, for each kind required, for each continuous area or visually related areas.
- B. Coordination: Coordinate with concrete installers with respect to installation of bar reinforcement in concrete foundations to be extended up into reinforced masonry walls.
- C. Sample Panels: Build sample panels to verify selections made under Sample submittals and to demonstrate aesthetic effects.
 - 1. Build sample panels for typical exterior wall in sizes approximately 48 inches long by 48 inches high by full thickness.
 - a. Include a sealant-filled joint at least 16 inches long.
 - b. Include through-wall flashing installed for a 24-inch length.
 - 2. Where masonry is to match existing, build panels adjacent and parallel to existing surface.
 - 3. Protect approved sample panels from the elements with weather-resistant membrane.
 - 4. Approval of sample panels is for color, texture, and blending of masonry units; relationship of mortar and sealant colors to masonry unit colors; tooling of joints; aesthetic qualities of workmanship; and other material and construction qualities specifically approved by Architect in writing.
 - a. Approval of sample panels does not constitute approval of deviations from the Contract Documents contained in sample panels unless Architect specifically approves such deviations in writing.
 - 5. Subject to compliance with requirements, approved sample panel may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- D. Deliver preblended, dry mortar mix in moisture-resistant containers. Store preblended, dry mortar mix in delivery containers on elevated platforms in a dry location or in covered weatherproof dispensing silos.
- E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.8 FIELD CONDITIONS

- A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
 - 1. Extend cover a minimum of 24 inches down both sides of walls, and hold cover securely in place.
- B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least three days after building masonry walls or columns.
- C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.
 - 1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
 - 2. Protect sills, ledges, and projections from mortar droppings.
 - 3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
 - 4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.
- D. 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 and higher and will remain so until masonry has dried, but not less than seven days after completing cleaning.
- E. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from single source from single manufacturer for each product required.
- B. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from single manufacturer for each cementitious component and from single source or producer for each aggregate.
- C. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated. Do not use units where such defects are exposed in the completed Work.

2.2 SPLIT-FACED CONCRETE BLOCK

- A. Type: Conforming to ASTM C 90, including a total linear drying shrinkage less than .045%, manufactured from normal weight aggregates complying with ASTM C 33.
1. Moisture Limits:
 - a. Units shall be cured in a moisture-controlled atmosphere so that when delivered to job site the weight of water contained in the units shall not exceed 35% of the fully saturated capacity of the block.
 - b. Moisture content of units stored at the site shall be maintained so as to not exceed 35% of block saturation capacity when tested by Owner's testing laboratory.
 2. Size and Shape:
 - a. 8" x 16" nominal face size, 4" thicknesses.
 - b. Provide special shapes where shown on drawings.
 3. Water Repellant Admixture: Units shall be manufactured with W.R. Grace "Dry-Block" integral water repellant admixture in amounts recommended by repellant manufacturer.
- B. Manufacturer and Make:
1. CMU-1: Rockford Cement Products; "Wheatfield: Split-Faced.
 2. CMU-2: Rockford Cement Products; "306 Brown".
 3. CMU-3: Rockford Cement Products; "Wheatfield: Smooth-Faced.

2.3 CONCRETE MASONRY UNITS

- A. CMU-4: Concrete Masonry Units, except as otherwise indicated:
1. Type: Standard hollow and solid load bearing units made with ASTM C 33 aggregates to conform to ASTM C 90, including a total linear drying shrinkage less than .045%.
 2. Sizes and Shapes: 8" x 16" nominal face size; thicknesses as indicated.
 - a. Provide bullnose block on external corner and jamb units and other special conditions as shown. Furnish same square cornered units for sills and heads (installed on-end).
 - b. Provide special shapes where shown and where required for lintels, bond beams and other special conditions.
 3. Texture: Face textures of each type of block shall match each other.
 4. Cores: 2-core or 3-core block may be used.
 - a. Provide solid block, where required, with core area not exceeding 25% of gross cross sectional area.
 5. Moisture Limits: Units shall be cured in a moisture-controlled atmosphere so that when delivered to job site the weight of water contained in the units shall not exceed 35% of the fully saturated capacity of the block.
 - a. Moisture content of units stored at the site shall be maintained so as to not exceed 35% of block saturation capacity when tested by Owner's testing laboratory.

2.4 MORTAR AND GROUT MATERIALS

- A. Portland Cement: ASTM C 150, non-staining, Type I or Type III (as required for cold weather conditions), natural gray.
- B. Masonry Cement: Not permitted.
- C. Hydrated Lime: Conforming to ASTM C 207, Type S.
- D. Sand: Conforming to ASTM C 144, except that 100% shall pass the #8 sieve and 15% - 30% shall pass the #50 sieve.
- E. Grout Aggregate: Gravel or crushed stone well graded from 3/8" to #16 and conforming to ASTM C 404. When fine aggregates are required, conform to ASTM C 404.
- F. Additives: Not allowed, including calcium chloride or other chloride bearing formulations, as well as any air entraining agents except for Water Repellent Additive: W.R. Grace "Dry-Block Mortar Additive" or equal approved by Architect.
- G. Water: Clean, potable, free from oil, soluble salts, acids, alkalis, organic impurities and other deleterious materials.

2.5 MORTAR AND GROUT MIXES

- A. Mortar Mix Properties:
 - 1. Mortar (lime-cement mortar) per ASTM C 270: Proportion portland cement, damp loose sand, and hydrated lime, by volume to achieve average, in-field, not lab compression strength of 2100 psi at 28 days. Refer to drawings for mortar type.
 - 2. Submit specimens for testing when directed by Architect.
- B. Grout Mix Proportions:
 - 1. For Embedment of Reinforcing Bars: Coarse Grout per ASTM C 476.
 - 2. For Filling Hollow Metal Door Frames: Use mortar, the same as used for adjacent masonry. Where hollow metal frames abut solid construction and filling must be done through a funnel, add sufficient water to mortar to produce a soupy consistency. Fill frames with grout after the frames have been installed.
- C. Mixing:
 - 1. Measurements: Measure ingredients precisely.
 - a. Keep water-cement ratio precise from batch to batch.
 - b. Accurately measure sand in damp, loose condition; measurement of sand by shovelful will NOT be allowed. Allow for contraction and expansion of sand's volume as it dries out and it gains moisture.
 - 2. Mortar: Mix mortar in a motorized mechanical batch mixer. Ingredients shall be thoroughly mixed according to ASTM C 270 procedures for at least 3 minutes but not more than 5 minutes after all material is in the mixer. Mix only as much mortar as needed for immediate use.

- a. Cold Weather: When air temperature is 40°F or below, keep water warmed to above 70°F but do not allow it to exceed 160°F. When heating sand, heat slowly and evenly. Scorched sand shall be discarded.
 - b. Exterior Mortar: Add color pigments as required to match the sample selected by Architect.
3. Grout: Mix grout thoroughly in a mechanical batch mixer according to ASTM C 476 procedures; hand mixing not allowed without approval. Grout may be premixed and delivered per ASTM C 94. Use only enough water to produce a workable consistency, except that for placement by pump more water may be added.
 - a. Cold Weather: When air temperature is 40°F or below, mix grout according to cold weather restrictions for mortar, and deliver at 70°F-120°F.
 4. Admixtures: Do not use admixtures except as specifically allowed by Architect and approved by Owner.
 5. Pre-Mixed Mortars: Truck delivered batch mixing shall conform to ASTM C 1142. In addition to regular motorized mixers, Spec-Mix systems may be used. "SILO-MIX" WILL NOT BE ALLOWED.
 6. Mortar Mixers, Boxes and Tools: Keep clean; thoroughly clean equipment and tools between batches and at end of each day's work.
- D. Retempering:
1. Partially hardened mortar may be re-tempered to replace water lost through evaporation.
 2. Do not retemper mortars out of mixer for more than 2-1/2 hours; but, rather, dispose of such mortar.
 3. Repointing mortar shall be used within 30 minutes of final mixing; do not retemper or use partially hardened repointing mix.

2.6 REINFORCEMENT AND TIES

- A. Acceptable Manufacturers: Subject to compliance with requirements of Specifications and Drawings, provide products by one of the following:
 1. AA Wire Products.
 2. Dur-O-Wal.
 3. Heckman Building Products.
 4. Hohmann & Barnard.
 5. National Wire Products.
 6. Masonry Reinforcing Corp. of America (Wire-Bond)
- B. Corners and Intersections for Horizontal Joint Reinforcement: Factory fabricated matching "L" and "T" units only. Field fabricated corner units and lapped units at corners and intersections NOT allowed.
- C. Bar Reinforcement:
 1. Reinforcing Bars: Deformed new billet steel bars conforming to ASTM A 615, Grade 60.

2. Reinforcing Bar Positioners: Prefabricated units formed from #9 galvanized steel wire, specifically fabricated for holding steel reinforcing bars in proper relationship to block cores.

2.7 TIES AND ANCHORS

- A. General: Ties and anchors shall extend at least 1-1/2 inches into masonry but with at least a 5/8-inch cover on outside face.
- B. Ties Anchoring New Masonry to Old Construction: Detail on the drawings.

2.8 EMBEDDED FLASHING MATERIALS

- A. Metal Drip: Stainless steel sheet metal strip fabricated with hemmed drip edge, equal to "Partial Edge" by Dur-O-Wal or "Drip Edge" by Polyguard.
- B. Setting Mastic For Metal Drip: Same mastic as used for repair of flashing membrane.

2.9 MISCELLANEOUS MASONRY ACCESSORIES

- A. Expansion and Control Joint Accessories:
 1. Bond Breaker Strips: No. 15 asphalt roofing felt conforming to ASTM D 226, or No. 15 coal tar roofing felt conforming to ASTM D 227.
 2. Pre-molded Control Joint Strips for Concrete Block: Solid rubber strips with a Shore A durometer hardness of 60 to 80, designed to fit standard sash block and maintain lateral stability in masonry wall, size and configuration as indicated.
- B. Compressible Joint Filler: Fire rated mineral fiber insulation, full width and thickness of joint.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
 1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
 2. Verify that foundations are within tolerances specified.
 3. Verify that reinforcing dowels are properly placed.
 4. Verify that substrates are free of substances that would impair mortar bond.
- B. Before installation, examine rough-in and built-in construction for piping systems to verify actual locations of piping.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. Build chases and recesses to accommodate items specified in this and other Sections.

- B. 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.

3.3 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 or minus 1/4 inch.
2. For location of elements in plan, do not vary from that indicated by more than plus or minus 1/2 inch.
3. For location of elements in elevation, do not vary from that indicated by more than plus or minus 1/4 inch in a story height or 1/2 inch 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, or 1/2-inch 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, 1/4 inch in 20 feet, or 1/2-inch maximum.
3. For vertical lines and surfaces do not vary from plumb by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2-inch 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, 1/4 inch in 20 feet, or 1/2-inch maximum.
5. For lines and surfaces, do not vary from straight by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2-inch maximum.
6. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet, or 1/2-inch maximum.
7. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch.

C. Joints:

1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch.
2. For exposed bed joints, do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch.
3. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch or minus 1/4 inch.
4. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch.

3.4 LAYING MASONRY WALLS

- A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

- B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond; do not use units with less-than-nominal 4-inch horizontal face dimensions at corners or jambs.
- C. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 4 inches. Bond and interlock each course of each wythe at corners. Do not use units with less-than-nominal 4-inch horizontal face dimensions at corners or jambs.
- D. Stopping and Resuming Work: Stop work by stepping back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.
- E. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.
- F. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below, and rod mortar or grout into core.
- G. Fill cores in hollow CMUs with grout 24 inches under bearing plates, beams, lintels, posts, and similar items unless otherwise indicated.

3.5 MORTAR BEDDING AND JOINTING

- A. Lay hollow CMUs as follows:
 1. Bed face shells in mortar and make head joints of depth equal to bed joints.
 2. Bed webs in mortar in all courses of piers, columns, and pilasters.
 3. Bed webs in mortar in grouted masonry, including starting course on footings.
 4. Fully bed entire units, including areas under cells, at starting course on footings where cells are not grouted.
- B. Lay solid CMUs 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.
- C. Tool exposed joints to match existing when thumbprint hard.

3.6 MASONRY-JOINT REINFORCEMENT

- A. Horizontal Joint Reinforcement: Reinforce concrete block walls as follows:
 1. Typical Spacing: Install wire reinforcement in horizontal joints, spaced 16" o.c. vertically.
 2. Tops and Bottoms of Walls: Place joint reinforcement continuous in first and second joint above bottom of walls and below top of walls.
 3. Openings: Place masonry joint reinforcement in first and second horizontal joints above and below openings greater than 1'-0" wide, extending reinforcement at least 16" beyond each side of opening.
 4. End Laps: Lap joint reinforcement ends a minimum of 6", placing a cross wire of each piece within the lap.

5. Intersections and Corners: Use only preformed welded units at corners and intersections, extending at least 18" each way; do not lap straight units at "T" intersections nor cut and bend joint reinforcement at "L" corners.
6. Mortar Coverage: Fully embed longitudinal side rods in mortar for their entire length: minimum cover of 5/8" on exterior side of walls after tooling and 1/2" at other locations.
7. Control and Expansion Joints: Break reinforcement at control joints. Do not bridge control or expansion joints with reinforcing except at wall openings.

3.7 BAR REINFORCED MASONRY

A. Concrete Block Placement:

1. Set block webs in full mortar beds to maintain leak-free cells. Fill end joints to the full depth of face shell thickness.
2. Maintain grout spaces free of excess mortar and debris.

B. Bond Beam Reinforcement:

1. Make bond beams continuous. Step bond beams as required in field.
2. Reinforce bond beam with two No. 4 bars placed 1" from bottom web when not indicated otherwise.
3. Place reinforcement in accordance with ACI 315. Return bars around corners a minimum of 8". Do not use defective bars or bars bent incorrectly.
4. Lap the splices to provide at least a Class A splice per ACI 318.

C. Grouting:

1. Remove loose rust and scale from reinforcing bars and remove rust, ice, water and dirt from cavity bottoms before pouring grout.
2. Grout walls using low-lift grouting technique in lifts not more than 5ft high, allowing at least 24 hours to pass between successive lifts.
3. Place grout continuously; do not interrupt pouring of grout for more than one hour. Do not disturb reinforcement while placing grout.
4. Consolidate grout 5 to 10 minutes after pouring. Puddle and rod the grout.

3.8 CONTROL AND EXPANSION JOINTS

A. General: Install control- and expansion-joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.

B. Form control joints in concrete masonry using one of the following methods:

1. Fit bond-breaker strips into hollow contour in ends of CMUs on one side of control joint. Fill resultant core with grout, and rake out joints in exposed faces for application of sealant.
2. Install preformed control-joint gaskets designed to fit standard sash block.
3. Install interlocking units designed for control joints. Install bond-breaker strips at joint. Keep head joints free and clear of mortar, or rake out joint for application of sealant.
4. Install temporary foam-plastic filler in head joints, and remove filler when unit masonry is complete for application of sealant.

3.9 LINTELS

- A. Install steel lintels furnished under Section 055000 "Metal Fabrications".
- B. Provide minimum bearing of 8 inches at each jamb unless otherwise indicated.

3.10 FLASHING

- A. General: Install embedded flashing at ledges and other obstructions to downward flow of water in wall where indicated.
- B. Locations: Install thru-wall flashings at the following masonry locations, whether shown or not:
 - 1. At base of exterior masonry walls.
 - 2. Over all exterior lintels.
- C. Wall Flashing Fabrication: Form typical wall flashings by adhering self-adhesive flashing membrane to a stainless steel edge drip, adhering membrane all across the top of the sheet metal. Trim membrane at edge of metal drip.
 - 1. Install the metal edge drip to make continuous runs. Make "dollar" lap joints, overlapping joints 6"; or lap the metal joints 1" and fill with the mastic used to set the edge drip. Trim the metal length to match the width of the flashing except at lintels, where the length of metal shall be cut to match the width of the door/window opening.
- D. Wall Flashing Installation:
 - 1. Comply with flashing membrane manufacturer's temperature limitations.
 - 2. Install in one piece to the extent practicable. Lap flashing 6" at joints and seal joint edges continuously.
 - 3. Lintel Flashings: Extend flashings past ends of lintel and fold flashing up into first head joints beyond end of lintel to form a positive end dam.
 - 4. Step Flashings: At the end of each section of flashing, fold flashing at least 1" up into a head joint so as to form a positive end dam.

3.11 MORTAR JOINT FINISHING

- A. Flush Joints: Strike interior wall joints flush where masonry is to be covered by other materials.
- B. Tooled Joints: Tool all joints not concealed by other work.
 - 1. At time of laying, strike masonry joints flush.
 - 2. When mortar in joints becomes thumbprint hard, tool to a hard, concave finish, using sled-type jointer at least 16" long, with diameter 1/8" to 1/4" larger than joint.
 - 3. Jointing tools shall be same diameter for each type of masonry.
- C. Caulked Joints: Rake out joints 1/2" deep where caulking is required.

3.12 FITTING AND PATCHING

- A. Do all cutting and patching of masonry for the Work required by other trades.
- B. Replace damaged masonry. Spot patching of exposed units with mortar must be inconspicuous.
- C. Cut and fit for chases, pipes, conduits, sleeves, etc. Cooperate with other trades to provide correct size, shape and location. Avoid cutting and patching to accommodate work under other Sections by coordinating masonry work with other trades.

3.13 REPAIR AND FINAL POINTING

- A. At completion of the work, cut out and repoint all holes, cracks and defective joints, using mortar colored to match after it dries. Cut out hardened mortar to a depth of 1/2" and dampen the hardened mortar before patching.
- B. Retool and reclean joint patches to match adjacent work. Leave exterior walls watertight.

3.14 CLEANING

- A. Remove excess mortar and droppings as work progresses, avoiding stains and smears. Do not allow excess mortar lumps or smears to harden on finish surfaces.
- B. Clean the interior masonry before application of floor finishes is started.
- C. Concrete Block: When concrete masonry unit placement is complete, rub masonry with carborundum brick to remove all sharp edges and then clean work with stiff bristle brushes, or other approved method, removing loose granules, building dust, etc. Comply with recommendations of NCMA TEK Bulletin 28.

3.15 PROTECTION

- A. At day's end and when precipitation is anticipated, cover tops of unfinished walls with plastic sheeting to prevent moisture infiltration.
- B. Protect exposed external corners that may be damaged by construction activities.
- C. Brace and shore masonry constructions until they are able to withstand ambient wind loads.
- D. Do not allow uniform structural loads to be applied to unbraced or unshored masonry for at least 12 hours after construction. Protect from concentrated loads for at least 3 days after construction.

3.16 MASONRY WASTE DISPOSAL

- A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.
- 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 042000

DIVISION 05 – METALS
SECTION 055000
METAL FABRICATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes:

1. Items fabricated from iron and steel shapes, plates, bars, strips, tubes and pipes which are not part of the steel structural framing or other metal systems in other Sections of the Specifications. The items of this Section include but are not necessarily limited to the following:
 - a. Steel lintels and miscellaneous framing members.
 - b. Steel bollards
2. Anchorages of type appropriate to the supporting structure and as required to provide a sturdy installation resistant to all reasonable loads.
3. Cutting, reinforcing, drilling and tapping as required to erect the work and to fit it with work provided under other Sections of the Specifications.

- B. Related Requirements:

1. Section 033000 "Cast-In-Place Concrete" Concrete fill at bollard.
2. Section 042000 "Unit Masonry" for wall structure.
3. Section 099113 "Painting" Finish painting.

1.3 COORDINATION

- A. Coordinate installation of metal fabrications that are anchored to or that receive other work. Furnish setting drawings, templates, and directions for installing anchorage that are to be embedded in existing masonry. Deliver such items to Project site in time for installation.

1.4 SUBMITTALS

- A. Shop Drawings: Show fabrication and installation details. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items. Provide Shop Drawings for:
1. Loose steel lintels.
 2. Miscellaneous steel framing members.
 3. Steel bollard.

QUALITY ASSURANCE

- B. Field Measurements: Take prior to preparation of Shop Drawings and fabrication, where possible. Take measurements in time, so as to avoid delaying job progress. Allow for trimming and fitting.
- C. Qualifications of Welders: Welding operators for shop fabrication shall be qualified, in accordance with AWS “Standard Qualifications Procedure.”
- D. Codes and Standards: Comply with the following unless otherwise indicated:
 - 1. AISI, Steel Products Manual, Stainless and Heat Resisting Steel.
 - 2. ANSI A58.1, Minimum Design Loads in Buildings and Other Structures.
 - 3. AWS D1.1 “Structural Welding Code.”
 - 4. OSHA: 1910.27 and 1926.1053.
 - 5. All applicable building codes having jurisdiction.
 - 6. Americans with Disabilities Architectural Guidelines.

1.5 FIELD CONDITIONS

- A. Field Measurements: Verify actual locations of walls and other construction contiguous with metal fabrications by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: For fabrication of miscellaneous metal work that will be exposed to view, use only materials that are smooth and free of surface blemishes, including pitting, seam marks, roller marks, rolled trade names and roughness.
 - 1. Steel Plates, Shapes, and Bars: ASTM A 36.
 - 2. Steel Tubing: Hot-formed, welded or seamless, ASTM A 501.
 - 3. Bolts and Nuts: Regular hexagon head type, ASTM A 307, Grade A.
- B. Anchor Bolts: Unfinished threaded fasteners per ASTM A 307, nonheaded type unless otherwise indicated
- C. Metal Primer Paint: Comply with VOC limit requirements of Green Seal Standard GS-11.
- D. Touch-Up Paint For Galvanized Surfaces: Zinc-rich, inorganic cold galvanizing compound having a minimum of 80% zinc dust in the dry film, such as Carboline Carbo Zinc or Carbo Weld; or Z.R.C.

2.2 SHOP FINISH

- A. Shop Painting: One-coat shop paint in accordance with Society for Protective Coatings (SSPC) System Guide No. 7.00, except apply 2 coats of paint to surfaces that will be inaccessible after assembly or erection.

1. Extent: Shop paint all miscellaneous and ornamental metal work, except surfaces and edges to be field welded, and galvanized surfaces, unless otherwise specified.
2. Surface Preparation: Remove scale, rust, grease, oils and other deleterious materials before applying shop coat of paint.

B. Galvanizing:

1. Coating Weights: Items indicated to be galvanized shall be hot-dip galvanized according to the following specifications:
 - a. Assembled steel products: ASTM A 386, 1.25 oz./sq. ft.
 - b. Structural steel shapes: ASTM A 123, 1.25 oz./sq. ft.
 - c. Steel hardware: ASTM A 153, 1.25 oz./sq. ft.
2. Fabrication: Galvanize only after fabrication. Drilling, welding and other fabrication, except bolting, shall be completed before galvanizing. Welds shall be free of slag and residue.
3. Quenching: Galvanized items shall be passivated in a water quench.
4. Galvanizer's Affidavit: Galvanizer shall inspect galvanizing after dipping and submit notarized affidavit certifying compliance with these specifications.
5. Grade Stamp: Stamp each item, indicating ASTM designation and weight of coating.

2.3 FABRICATION – GENERAL

- A. Sizes and Thicknesses: As shown, or, if not shown, as required to produce adequate strength and durability in the finished products. Comply with AISC Specifications for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.
- B. Preassembly in Shop: Preassemble the items in the shop to greatest extent possible, to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.
- C. Dissimilar Metals: Wherever dissimilar metals come into contact, insert lead washers, spacers or gaskets between them to provide electrolytic insulation.
- D. Workmanship: Form exposed work true to line and level, with accurate angles and surfaces and straight, sharp smooth edges.
- E. Welds: Weld corners and seams continuously and in accordance with recommendations of American Welding Society. Grind exposed welds smooth and flush.
- F. Items to be Galvanized: Complete drilling, welding and other fabrication, except bolting, before galvanizing. Clean welds of slag and residue. Provide vent holes as required.

2.4 FABRICATION SPECIFICS

- A. Miscellaneous Steel Framing: Provide structural framing members standard and galvanized as noted on drawings which are not a part of Structural Steel.
- B. Loose Steel Lintels:

1. General: Furnish loose structural steel lintels for installation over openings where shown or called for on drawings.
2. Finish: Steel and galvanized steel where noted on drawings.
3. Composite Constructions: Weld adjoining members together to form single unit unless indicated otherwise.
4. Bearing: Provide for at least 8" bearing at each side of openings unless opening is less than 6'-0" wide, in which case, provide at least 6" of bearing at each side.

C. Steel Bollards – See drawings for details.

1. Galvanized steel with finish paint as specified under Section 099113 "Painting".
2. Concrete Fill: Is specified under Section 033000.

2.5 FASTENERS

- A. General: Unless otherwise indicated, provide Type 304 stainless-steel fasteners and zinc-plated fasteners with coating complying with ASTM B 633 or ASTM F 1941 (ASTM F 1941M), Class Fe/Zn 5, at exterior walls.

2.6 MISCELLANEOUS MATERIALS

- A. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79 and compatible with topcoat.
1. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.
 2. Shop Primer for Galvanized Steel: Primer formulated for exterior use over zinc-coated metal and compatible with finish paint systems indicated.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Contractor shall verify all opening sizes in field prior to developing shop drawings.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- C. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
- D. Field Welding: Comply with the following requirements:
1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 2. Obtain fusion without undercut or overlap.
 3. Remove welding flux immediately.

4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
 5. All contacts with steel angles shall be welded.
- E. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors.

3.2 ADJUSTING AND CLEANING

- A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
1. Apply by brush or spray to provide a minimum 2.0-mil (0.05-mm) dry film thickness.
- B. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint.
- C. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780/A 780M.

END OF SECTION 055000

DIVISION 06 – WOOD, PLASTIC & COMPOSITES

SECTION 061000
CARPENTRY WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes:

1. Wood blocking and nailers.
2. Installation of wood doors and door hardware.
3. Fire rated plywood sheathing.
4. Provide and install new plastic laminate cabinets and countertops.
5. Solid surface countertops
6. Install toilet accessories.

- B. Related Requirements:

1. Section 072726 “Fluid Applied Membrane Air Barrier” for application on weather resistant barrier
2. Section 081416 "Flush Wood Doors" for wood door to be installed.
3. Section 087110 "Door Hardware" for finish hardware to be installed in wood door installation.
4. Section 092900 “Gypsum Board System” for gypsum board to be installed.
5. Section 102800 “Toilet Accessories” for toilet accessories to be installed.

1.3 SUBMITTALS

- A. Product Data:

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
2. Submit manufacturer’s product data for premanufactured items.

- B. Shop Drawings: Include all shop fabricated items.

1. Show location and quantity of each item, dimensioned plans and elevations, large scale details, anchors, hardware and other components. Show cabinets in relation to adjacent work. Where required, show electrical service runs.
2. Highlight any field dimensions required to be maintained by other trades.
3. Indicate compliance with AWI Quality Grade, and other specified requirements for materials and workmanship.

- C. Samples: Submit Samples of each of the following items:

1. Exposed Cabinet Hardware: 1 unit of each type and finish.
2. Plastic Laminates
3. Solid Surface

D. 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.

E. Evaluation Reports: For Wood-preserved-treated wood, from ICC-ES.

1.4 QUALITY ASSURANCE

A. Quality Standards: Except as otherwise approved, comply with “Custom Grade” provisions of Architectural Woodwork Institute’s (AWI) “Architectural Woodwork Quality Standards.”

B. Americans with Disabilities Act (ADA) Requirements: Cabinetry, where specifically indicated on Drawings as “ADA,” shall comply with Federal Register Volume 56, No. 144, Rules and Regulations.

C. Measurements: Before proceeding with millwork to be fitted to other construction, obtain field measurements and verify dimensions and Shop Drawing details as required for accurate fit.

D. Workmen: Use only tradesmen experienced in the fabrication and installation of millwork.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MILLWORK SUPPLIERS

A. The Horizon Group, Davenport, Iowa

B. Pierce Laminated Products, Rockford, Illinois.

C. TMI Systems, Inc.

D. Grommes Millwork

E. Or approved equal.

1. Must be submitted 10 days prior to bid opening. On supplier letterhead, a list of any specific variances to our specifications, confirmation that supplier will provide both premanufactured and millwork items as applicable, comply with AWI standards or provide certification of AWI, a list of at least 6 recent public educational/municipal project references and a statement clarifying that supplier will meet or exceed these specifications, for Architects full review.

2.2 WOOD BASED MATERIALS

A. GENERAL

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. Dress lumber, S4S, unless otherwise indicated.
3. Maximum Moisture Content of Lumber: 19 percent unless otherwise indicated.
4. Cabinet Materials:
 - a. Wood shall be AWI Custom Grade, unless otherwise indicated, of an average moisture content within 5% to 10% ranges.
 - b. Cabinetwork Materials: As listed under Fabrication
5. Fire Rated Plywood Sheathing: Plywood, DOC PS 1, Exposure 1, C-D Plugged, 3/4-inch nominal thickness, fire rated.

2.3 PLASTIC LAMINATE

- A. Approved Manufacturers: Wilsonart Premium Aeon or equal by Formica.
- B. Plastic Laminate: NEMA type Ld3:
 1. Countertops: .048" thick Post Form Grade GP50 grade, general-purpose type.
 2. Exposed Cabinetwork and Panels: .028" thick (+ .004") vertical-surface, high pressure type (GP28 Grade).
 3. Cabinet Interiors: Melamine interior sheets (CL20 Grade). Or thermally fused melamine laminate in situations that meet standards of AWI Custom Grade. Interior color of open cabinets shall be GP28 to match exterior surfaces.
 4. Totally Concealed Faces: .020" thick, BK20 or CL20 grade, back-up sheets.
 5. Panels: .028" thick, GP28 grade, vertical-surface type.
 6. Edging: 3mm PVC at door and drawer edges and of solid, color-through, high-impact vinyl, 3mm thickness, machine applied with hot melt adhesive. color and gloss as selected by Architect from full line of manufacturer's standard colors and finishes. Color/Pattern shall directly match adjacent drawer/door laminate.

Countertop Laminate: Formica Sarum Twill 8827-58

Laminate for Exposed Exteriors of Base and Wall Cabinet, including door and drawer fronts: Formica 8829-58 Graphite Twill

PVC: To directly match adjacent laminate pattern/color.

Solid Surface Countertops: To be selected from Meganite

2.4 TACKBOARDS

- A. Core: Fiberboard 1/2" thick, such as manufactured by Homasote, wrapped with woven fabric securely fixed to the backside of each panel.
- B. Fabricate for attachment to casework wall with at least 2 concealed, theft-resistant hangers per tackboard.
- C. Fabric: Designtex Union Cloth 4134 -802 Medium Grey.

- D. Construction: Stretch the woven fabric around the fiberboard, keeping fabric pattern neatly in line with edge of panel. Securely fix fabric to the backside of each panel, making neat corners with no gaps or ridges.

2.5 CABINET HARDWARE

- A. Pulls: Brass wire pull with satin chrome finish.
- B. Hinges: Concealed, self-closing type of heavy gauge metal construction, 165° swing, passing 200,000 open/close cycle test; and backed by hinge manufacturer's standard material replacement guarantee.
 - 1. Adjustability: Fully adjustable for clockwise, counter-clockwise, toe-in and toe-out door alignment. Provide base plates to maintain 1/8" reveals between door/drawers within the same cabinet, and between doors of adjoining cabinets.
 - 2. Finish: Hinge manufacturer's standard corrosion resistant finish. Colored finishes shall be subject to Architect's approval for color compatibility with cabinet finish selected.
- C. Magnetic Cabinet Door Catches: Knappe & Vogt 916, Stanley 46 ALD, Hager 1437 and 1438, or Engineered Products 590 and 591.
- D. Drawer Slides: 1 pair per drawer.
 - 1. Standard Drawers: Self-closing design with positive in-stop, out-stop and out-keeper to maintain drawer in 80% open position; captive nylon rollers, front and rear; minimum 100 lb. dynamic load rating at 50,000 cycles and 150 lb. static load rating at full extension; epoxy coated, bottom corner mounted.
 - 2. Guarantee: All drawer slides shall be furnished with manufacturer's lifetime warranty.

2.6 FASTENERS/SUPPORT FRAMING

- 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 pressure-preservative treated provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
- B. Nails, Brads, and Staples: ASTM F 1667.
 - 1. Nails: Ring-shank or rough coated finish, size and type to suit application.
- C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
- D. Screws: Plain steel; wood or sheet metal shank; flat, countersunk Phillips or square drive head.
- E. Bolts, Nuts, Washers: Size and type to suit application; unfinished in concealed location.
- F. Interlocking Mechanical Fasteners: Conforming to 400B-S-8.A or 1600B-S-4.A or to Sections 14 and 25 of the Woodwork Institute of California's manual of millwork; corrosion resistant finish.

- G. Panel Clips: 2 ½” pairs steel, pre-punched, 2 hole “Panelclips” as supplied by Brooklyn Hardware or comparable clips recommended by millwork supplier and as approved by Architect.
- H. Millwork Fabrications Attachment Hardware & Support Framing: Exposed metal shall be stainless steel of shapes and sizes as noted on drawings.

2.7 SHOP FABRICATION

- A. General:
 - 1. Adhesives: Use waterproof, resorcinol-formaldehyde type adhesive. Products made with urea-formaldehyde or melamine-formaldehyde must comply with HPMA Standard FTM 2 for emissions.
 - 2. Loose Joints: Locate loose joints so as to render them as inconspicuous as possible in the finished work.
- B. Countertops: Comply with AWI Section 400, Custom Grade except as specified otherwise.
 - 1. Cores: At sinks, tops shall have Marine Grade plywood cores or particleboard cores constructed with waterproof phenolic resins. Thickness not to be less than 1.”
 - 2. Apply plastic laminate finish in full, uninterrupted sheets consistent with manufactured sizes. Make corners and joints hairline. Front edges including applied back splashes, Self edge of finished laminate. See drawings.
 - 3. Back the tops with a minimum .020" backer sheet.
 - 4. Backsplashes and side splashes to be fit to wall with location of splash marked on countertop. Between the splash and countertop a bead of clear silicone is to be applied and the splash is to be fastened to the top with screws from below: Include 4" high x 1" thick backsplashes and endsplashes wherever countertops abut vertical surface.
 - 5. Splice Joints: Continuous countertops requiring splice joints shall be aligned with dowels and splines and shall be joined with Tite-Joint type fasteners and wood glue to make a uniform and gapless joint. Provide structural framing under countertops within 8" of each side of joint. Locate countertop joints at least 15" from sink cutouts.
 - 6. Cutouts: Cut openings for plumbing fixtures, inserts, appliances, outlet boxes, and other fixtures and fitments to be installed under other Sections of the Specifications. Verify locations of cutouts from site measured dimensions. Verify size of opening with actual size of equipment to be used, prior to making openings. Form inside corners to a radius of not less than 1/8". After sawing, smooth the edges of cutouts to ensure crack-free openings.
 - 7. Sink Cutout Edges: Seal exposed edges of sink cutouts with a waterproof sealer recommended by the plastic laminate manufacturer.
- C. Cabinets:
 - 1. General: Comply with AWI Section 400, Custom Grade. Shop fabricate items in sizes to ensure passage through the building without the necessity to modify any building openings. Form joints to conceal shrinkage.
 - 2. Face Style: Flush overlay.
 - 3. Frame Fabrication: Fabricate members that mate to walls with undercut to allow scribing in the field.

4. Cabinetwork for Plastic Laminate Finish: Plastic laminate on all exposed and semi-exposed surfaces.
 - a. Balanced construction as defined by AWI custom grade shall be utilized.
 - b. Panel Cores: 3/4" particleboard for doors, 1" plywood for shelves and 1/2" plywood or 1/4" MDF for backs, unless otherwise detailed.
 - c. Edges: Edge-band doors, drawer fronts and other exposed edges, including shelves, with machine applied 3mm PVC.
5. Drawers:
 - a. Sides, back and sub front: Minimum 1.2" thick particleboard, laminated with Thermally Fused Melamine doweled and glued into sides. Top edge banded with 1mm PVC.
 - b. Drawer bottom: Minimum 1/2" thick particle board laminate with Thermally Fused Melamine, screwed directly to the bottom edges of drawer box.
 - c. Drawer fronts. 3/4" thick particle board. VGS laminate exterior, balanced with high pressure cabinet liner CLS.
6. Cabinet Shelves: Design for load of 15 psf with deflection limited to 1/180.
7. Shelf Supports: Provide holes for shelf cleats to be adjusted up or down 3" from indicated elevation, in 1-1/2" increments, using metal shelf cleats.
8. Loose Joints: Make with rail bolts that can be pulled up tight to form perfectly flush joints.

2.8 FINISH SOLID SURFACE COUNTERTOPS

- A. Solid Surface: Solid Surface 1/2" thick Countertops shall be provided. See drawings for locations, details, edge, and dimensions. Follow drawings and manufacturers guidelines for countertop support, structure, construction, installation.
 1. Approved Manufacturer, Meganite styles: Boulder, Smokey Mountain, Granite, Mist, Moonstone, Stone, Concrete, in full range of available colors per style.
- B. Non-porous, homogeneous material maintaining the same composition throughout the part with a composition of acrylic polymer, aluminum trihydrate filler and pigment; not coated, laminated or of composite construction; meeting Flammability: Class 1 and A when tested to UL 723ING

2.9 WOOD BLOCKING AND NAILERS

- A. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.
- B. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work

2.10 WOOD-PRESERVATIVE-TREATED LUMBER

- A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2 for interior construction. Use Category UC3b for exterior construction.

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
 2. 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.
 3. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
 4. Application: Treat all rough carpentry unless otherwise indicated.
- B. Fire-Retardant Treatment: Furnish fire-retardant treated wood (FRTW) framing, blocking, nailers and plywood where indicated on Drawings and where wood is required in fire-rated assemblies including roof assemblies. Treat with Koppers' "Non-Com Fireprotective," Hickson Corp's "Dricon," or equal chemicals bearing a National Evaluation Services Report. The treatment shall provide a UL fire hazard classification of 25 or less for both flame spread and fuel contributed:
1. Treat lumber with non-corrosive AWPA C20 type free of halogens, sulfates and ammonium phosphate per FR-1 of AWPA Standard P17
 2. Treat plywood with non-corrosive AWPA C27 type free of halogens, sulfates and ammonium phosphate per FR-1 of AWPA Standard P17
 3. After pressure treatment, kiln dry the treated lumber to a maximum moisture content of 19%. Plywood shall be kiln dried to a maximum moisture content of 15%.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Wood Blocking/Nailer:

1. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
2. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.
3. Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-1/2 inches (38 mm) wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.

B. Flush Wood Door and Finish Hardware:

1. Install flush wood door on hollow metal door frame.
2. Install finish hardware on flush wood door and attach to hollow metal door frame.

C. General:

1. Setting: Secure work to grounds and blocking as required, holding to correct surfaces, lines and levels. Make finished work flat, plumb, and true. Install items tight to adjoining surfaces except as approved otherwise. Cope and scribe for tight fits.
2. Fastening: Conceal fastenings; where not possible, locate them in inconspicuous places. Where nailing is permitted through woodwork face, conceal nail heads. Do not nail adjacent woodwork to paneling.

3. Loose Joints: Locate loose joints to render them as inconspicuous as possible in finish work. Make joints in interior work with rail bolts that can be pulled up tight to form perfectly flush joints.
4. Expansion Joints: Install joints to permit sections to expand and contract without buckling, warping or causing other conditions that will detract from appearance and durability.
5. Miter external corner of flat horizontal members; house internal corners. Miter external corners of molded members; cope internal corners. Glue mitered corners; secure with corrugated metal fasteners.
6. At substrate irregularities apply colored sealant at such spaces and tool sealant to a straight line along millwork edge.
7. Thoroughly sand finished wood items smooth. Touch up edges and make smooth.
8. Coat cut surfaces of preservative treated wood after cutting, with a heavy brush coating of the same preservative

D. Cabinetwork:

1. Install cabinetwork in a manner consistent with the specified quality grade, plumb, level, true and straight with no distortions.
2. Secure wall cabinets only to masonry or solid wood blocking. Anchor with concealed fasteners of the kinds recommended by the cabinet manufacturer to accommodate maximum loads; place anchors in the cabinet manufacturer's recommended locations/patterns.
3. Scribe and cut for accurate fit to other finished work. Permanently fix cabinet and counter bases to floor using appropriate concealed angles and anchorages.
4. Carefully scribe cabinetwork set against other building materials, leaving gaps of 1/32" maximum.
5. Install and adjust cabinet hardware to correct operation.
6. Cutouts: Provide cutouts for conduits and other fixtures and fitments. Verify locations, shapes and sizes of cutouts from site measured dimensions.
7. Coordinate installation of cabinetwork with other cabinetwork furnished and installed under other Sections of the Specifications.

3.2 HARDWARE FOR DOORS

- A. Receive, store, protect and install finish hardware for wood and hollow metal doors on entire project as furnished by finish hardware supplier under Section 087100 - Finish Hardware. Install according to requirements specified in Section 087100.
- B. Adjust, and protect from injury all installed hardware. Cover door knobs and levers with heavy cloth until project acceptance.
- C. Deliver keys to Owner at completion and acceptance of work.

3.3 ADJUST AND CLEAN

- A. Repair damaged or defective work to the satisfaction of the Architect.
- B. Adjust and lubricate hardware for proper operation.
- C. Clean exposed interior surfaces

3.4 PROTECTION

- A. Protect installed finish carpentry from damage by other trades until Owner's acceptance of the work.

END OF SECTION 061000

DIVISION 06 – WOOD, PLASTIC & COMPOSITES

SECTION 061753

SHOP FABRICATED WOOD TRUSSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Wood roof trusses.
- B. Related Requirements:
 - 1. Section 061000 "Rough Carpentry" for wood framing and roof sheathing
 - 2. Section 092900 "Gypsum Board System" for gypsum board ceiling.

1.3 DEFINITIONS

- A. Metal-Plate-Connected Wood Trusses: Planar structural units consisting of metal-plate-connected members fabricated from dimension lumber and cut and assembled before delivery to Project site.

1.4 ACTION SUBMITTALS

- A. Product Data: For wood-preserved-treated lumber, metal-plate connectors, metal truss accessories, and fasteners:
 - 1. Include data for wood-preserved treatment from chemical treatment manufacturer and certification from treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
 - 2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to truss fabricator.
- 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.

- 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 structural engineer responsible for their preparation.

1.5 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For dimension lumber specified to comply with minimum specific gravity. Indicate species and grade selected for each use and specific gravity.
- B. Product Certificates: For metal-plate-connected wood trusses, signed by officer of truss-fabricating firm.
- C. Evaluation Reports: For the following, from ICC-ES:
 - 1. Wood-preservative-treated lumber.
 - 2. Metal-plate connectors.
 - 3. Metal truss accessories.

1.6 QUALITY ASSURANCE

- A. 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.

1.7 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."
 - 1. Store trusses flat, off of ground, and adequately supported to prevent lateral bending.
 - 2. Protect trusses from weather by covering with waterproof sheeting, securely anchored.
 - 3. Provide for air circulation around stacks and under coverings.
- B. Inspect trusses showing discoloration, corrosion, or other evidence of deterioration. Discard and replace trusses that are damaged or defective.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified structural engineer, as defined in Section 014000 "Quality Requirements," to design metal-plate-connected wood trusses.

- 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 unless more stringent requirements are specified below.
 - 1. Design Loads: As indicated.
 - 2. Maximum Deflection under Design Loads:
 - a. Roof Truss: Vertical deflection of 1/240 total load or 1/360 live load of the span.
- 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. Factory mark each piece of lumber with grade stamp of grading agency.
 - 2. Provide dressed lumber, S4S.
 - 3. Provide dry lumber with 19 percent maximum moisture content at time of dressing.
- B. Minimum Chord Size for Roof Trusses: 2 by 4 inches nominal for both top and bottom chords.
- C. Minimum Specific Gravity for Top Chords: 0.50
- D. Permanent Bracing: Provide wood bracing that complies with requirements for miscellaneous lumber in Section 061000 "Rough Carpentry."

2.3 WOOD-PRESERVATIVE-TREATED LUMBER

- A. Preservative Treatment by Pressure Process: AWWPA U1; Use Category UC2 for interior construction not in contact with the ground,
 - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
- 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 trusses.

2.4 METAL CONNECTOR PLATES

- A. General: Fabricate connector plates to comply with TPI 1.
- B. 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.

2.5 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.
- B. Nails, Brads, and Staples: ASTM F 1667.

2.6 METAL FRAMING ANCHORS AND ACCESSORIES

- A. Allowable design loads, as published by manufacturer, shall comply with 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. Framing anchors shall be punched for fasteners adequate to withstand same loads as framing anchors.
- B. 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.
- C. Truss Tie-Downs: As indicated.
- D. Roof Truss Bracing/Spacers: U-shaped channels, 1-1/2 inches (38 mm) wide by 1 inch (25 mm) deep by 0.040 inch (1.0 mm) thick, made to fit between two adjacent trusses and accurately space them apart, and with tabs having metal teeth for fastening to trusses.

2.7 MISCELLANEOUS MATERIALS

- A. Galvanizing Repair Paint: SSPC-Paint 20, with dry film containing a minimum of 92 percent zinc dust by weight.

2.8 FABRICATION

- A. Cut truss members to accurate lengths, angles, and sizes to produce close-fitting joints.

- B. Fabricate metal connector plates to sizes, configurations, thicknesses, and anchorage details required to withstand design loads for types of joint designs indicated.
- C. 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.
- D. 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. Install trusses plumb, square, and true to line and securely fasten to supporting construction.
- F. Space trusses 24 inches o.c. adjust and align trusses in location before permanently fastening.
- G. 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.
- H. 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."
- I. Install wood trusses within installation tolerances in TPI 1.
- J. Do not alter trusses in field. Do not cut, drill, notch, or remove truss members.
- K. Replace wood trusses that are damaged or do not comply with requirements.
 - 1. Damaged trusses may be repaired according to truss repair details signed and sealed by the qualified professional engineer responsible for truss design, when approved by Architect.

3.2 REPAIRS AND 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.
- B. Repair damaged galvanized coatings on exposed surfaces according to ASTM A 780/A 780M and manufacturer's written instructions..

3.3 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a qualified special inspector to perform special inspections to verify that temporary installation restraint/bracing and the permanent individual truss member restraint/bracing are installed in accordance with the approved truss submittal package.

END OF SECTION 061753

DIVISION 7 – THERMAL & MOISTURE PROTECTION

SECTION 070150
PREPARATION FOR REROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Removal of existing roofing material, roof sheet metal work and related accessories in preparation for installation of new roof membrane systems.
2. Removal and re-installation of items as listed on drawings.
3. Protection of existing rooftop structures designated to remain.

B. Related Requirements:

1. Section 015000 "Temporary Facilities and Controls" for temporary construction and environmental-protection measures for reroofing preparation.
2. Section 075311 "Asphalt Shingles Roofing" for new reroofing work.
3. Section 075320 "Adhered EPDM Roofing" for new reroofing work.
4. Section 076200 "Sheet Metal Work" for sheet metal work related to reroofing.

1.3 DEFINITIONS

- A. Roofing Terminology: Definitions in ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" apply to work of this Section.
- B. Roof Tear-Off: Removal of selected components and accessories from existing roofing system as noted on drawings under Demolition Box Notes:
 1. Existing Roofs Composition: Refer to drawings.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Include plans, sections, and details.

1.5 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning roofing removal. Comply with hauling and disposal regulations of authorities having jurisdiction.

1.6 FIELD CONDITIONS

- A. Existing Roofing Systems: See drawings
- B. Owner will occupy portions of building immediately below reroofing area. Conduct reroofing so Owner's operations are not disrupted. Provide Owner with not less than 72 hours' notice of activities that may affect Owner's operations.
 - 1. Coordinate work activities daily with Owner so Owner can place protective dust and water-leakage covers over sensitive equipment and furnishings, shut down HVAC and fire-alarm or -detection equipment if needed, and evacuate occupants from below work area.
- C. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.
- D. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
- E. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.
 - 1. Remove only as much roofing in one day as can be made watertight in the same day.

PART 2 - PRODUCTS

2.1 TEMPORARY PROTECTION MATERIALS

- A. Sheet polyethylene or fiber reinforced plastic sheeting. Provide weights to retain sheeting in position.

2.2 INFILL AND REPLACEMENT MATERIALS

- A. Use infill materials matching existing roofing system materials unless otherwise indicated.
 - 1. Replace any wood blocking/nailers around the perimeter of roof line as required with new treated wood blocking/nailers specified in Section 061000 "Carpentry Work."

2.3 AUXILIARY REROOFING MATERIALS

- A. General: Use auxiliary reroofing preparation materials recommended by roofing system manufacturer for intended use and compatible with components of existing and new roofing system.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Shut off rooftop utilities and service piping, if any, before beginning the Work.
- B. Protect existing roofing system that is not to be reroofed.
- C. Coordinate with Owner to shut down air-intake equipment in the vicinity of the Work. Cover air-intake louvers before proceeding with reroofing work that could affect indoor air quality or activate smoke detectors in the ductwork.
- D. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.

3.2 ROOF TEAR-OFF

- A. Remove accessories from roofing as required.
- B. Roof Tear-Off: Remove existing roofing and other roofing system components as shown on the drawings.

3.3 DECK PREPARATION

- A. Inspect deck after tear-off of roofing system.
- B. If deck surface is unsuitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Architect. Do not proceed with installation until directed by Architect.

3.4 BASE FLASHING REMOVAL

- A. Remove existing base flashings. Clean substrates of contaminants, such as asphalt, sheet materials, dirt, and debris.
- B. Replace wood blocking, curbs, and nailers to comply with Section 061000 "Rough Carpentry."

3.5 DISPOSAL

- A. Collect demolished materials and place in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
 - 1. Storage or sale of demolished items or materials on-site is not permitted.
- B. Transport and legally dispose of demolished materials off Owner's property.

3.6 EXTEND EXISTING ROOF ITEMS

- A. Extend mechanical curbs and equipment to be a minimum 8" above the new roof surface.
- B. Extend vent stacks to be a minimum 12" above the new roof surface.
- C. Extend and modify existing ductwork and electrical components associated with mechanical equipment as required to accommodate the new roofing system.

END OF SECTION 070150

DIVISION 07 – THERMAL & MOISTURE PROTECTION

SECTION 072100
BUILDING INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes:
 - 1. Batt wall insulation.
- B. Related Requirements:
 - Section 061753 "Shop Fabricated Wood Trusses" for roof framing.

1.3 SUBMITTALS

- A. Process all submittals per requirements in Section 013300 "Submittal Procedures".
- B. Manufacturer's Data: Submit 2 copies of manufacturer's specifications and installation instructions for each type of insulation required.

1.4 QUALITY ASSURANCE

- A. The application of all insulations shall be in strict accordance with the directions and specifications of the manufacturer and shall be performed by an Installer approved by the manufacturer.
- B. Thermal Factors:
 - 1. Thermal Conductivity (k), Thermal Conductance (C) and Thermal Resistance (R) factors used in these specifications shall be for aged insulation effectiveness as listed in the latest edition of ASHRAE's Handbook of Fundamentals, and the Annual Book of ASTM Standards.
 - 2. Installed insulation thickness shall be adjusted to meet these minimum requirements.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Batt Insulation:

1. Acceptable Manufacturers:
 - a. Owens-Corning.
 - b. Guardian Fiberglass.
 - c. CertainTeed.
 - d. USG.
 - e. Johns Manville.
2. Glass or other inorganic fibers and resinous binders formed into unfaced flexible blankets of thicknesses indicated conforming to ASTM C 665, Type I, with density not less than 0.5 pcf. Thickness as noted on drawings.

2.2 MISCELLANEOUS MATERIALS

- A. Mechanical Anchors: Type and size shown or, if not shown, as recommended by the insulation manufacturer for the type of application shown and condition of substrate including insulation batt supports.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Installer shall examine the areas and conditions under which the work is to be installed. Notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work.
- B. Do not proceed with the work until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General:
 1. Comply with manufacturer's instructions for the particular conditions of installation in each case. If printed instructions are not available or do not apply to the project conditions, consult the manufacturer's technical representative for specific recommendations before proceeding with the work.
 2. Extend insulation full thickness shown over entire surface to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation.
 3. Apply a single layer of insulation of the required thickness unless otherwise shown or required to make up the total thickness.
- B. Batt Insulation.
 1. Do not obstruct ventilation spaces. Provide batts of appropriate width to fit in spaces tightly.
 2. Insulation shall fill all voids as shown on drawings.
 3. Penetrations where ducts or structural framing cut insulation shall be stuffed all around with insulation

3.3 CLEANUP

- A. Remove all scraps of insulation and dispose of properly.

END OF SECTION 072100

DIVISION 7 – THERMAL & MOISTURE PROTECTION

SECTION 075311
ASPHALT SHINGLES ROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Asphalt shingles.
3. Underlayment (Ice and water shield) membrane.
4. Shingle Venting systems - See drawings for details on system.

B. Related Requirements:

1. Section 061000 “Carpentry Work” for wood blocking/nailers and plywood sheathing.
2. Section 070150 “Preparation for Re-roofing” for wood blocking/nailers.
3. Section 075320 “Adhered EPDM Roofing” for roof area to receive EDPM roofing.
4. Section 076123 “Sheet Metal Work: for metal fascia, edge trim, gutters and downspouts.

1.3 QUALITY ASSURANCE

- A. Roofing Contractor: Illinois licensed, specializing for at least 5 years in the type of membrane system involved, who is approved by Architect and is certified/licensed by new roofing membrane system producer and who can furnish for this installation a foreman factory trained by the roof membrane system producer.
- B. Source of Supply: Membrane system materials shall be obtained from a single source of supply except as authorized otherwise by membrane producer.
- C. Standards of Installation: All components of roof system shall be furnished and installed to meet the wind 72 mph wind warranty.
- D. Scheduling and Coordination:
 1. Schedule roof removal work to coincide with commencement of installation of new roofing system.
 2. Coordinate roofing installation with mechanical and electrical work associated with roof penetrations.
 3. No phased construction will be considered or approved.
- E. Wet and Damaged Materials: Shall not be installed.

1.4 SUBMITTALS.

- A. Product Data: Submit 3 copies of roofing materials producer's specifications, material characteristics and installation instructions for each product required including fasteners.
- B. Manufacturer's Installation Instructions:
 - 1. Provide published instructions that indicate preparation required and installation procedures.
 - 2. Indicate shingle manufacturer's recommendations for underlayment and flashing membranes.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Receive and handle materials to avoid damage. Store materials out of the sun, off of the ground, under well ventilated waterproof cover and away from hot radiators or other sources of heat. Avoid rough handling at 40°F and below.
- B. Store rolled materials upright and protect ends against damage.
- C. Do not store shingles in stacks greater than 4 feet high.
- D. Do not pile shingle bundles on top of one another on roof deck, but rather, distribute the load of bundles

1.6 JOB CONDITIONS

- A. Coordinate work so that the existing roofing system is not removed when weather conditions threaten the integrity of the building contents or intended continued occupancy.
- B. Maintain continuous temporary protection after removal of existing roofing, until installation of new roofing system, whenever precipitation is forecast.
- C. Ambient Conditions: Do not apply adhesives below adhesive manufacturers' recommended ambient temperature ranges.
- D. Cold Weather: Follow membrane producer's special recommendations when cold weather retards free flow of adhesives and sealants. Do not apply adhesives below adhesive manufacturers' recommended ambient temperature ranges.

1.7 WARRANTIES

- A. New Roofing: Shall be provided with a non-prorated, No-Dollar-Limit, full system warranty to Owner, including tapered insulation saddles, against leaks or defects of any kind due to faulty materials or workmanship, and to sustain a 72 mph maximum wind speed as follows:
 - 1. Roofing system producer's "Lifetime Protection" warranty for materials and workmanship.
 - 2. Roofing Contractor's 2 year warranty for workmanship.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Asphalt Shingles: CertainTeed Landmark Designer series or approved equal during bidding – Color to match existing.
- B. Ridge Vents: 0.063 inch aluminum.
 - 1. “Hi-Perf” for sloped roof meets vertical wall by Metal-Era or approved equal during bidding.
 - 2. “Hi-Perf” for slope to slope ridge by Metal-Era or approved equal during bidding.
 - 3. Color as selected by Architect for manufacturer’s full color line.
- C. Fasteners: Hot-dip galvanized barbed or deformed roofing nails, 10 to 12 gauge shank with minimum 3/8" diameter head, Lengths shall be sufficient to achieve 3/4" penetration into plywood wall sheathing or types recommended by roof system manufacturer.
- D. Ice and Water Shield Membrane: "StormGuard" by GAF or approved equal during bidding.
- E. Roof Insulation: “ThermaCal non-venting” nailable panels by GAF Cornell, or Comparable products of other manufacturers as approved by Architect during bidding:
 - 1. Description of System: Factory assembled panel consisting of one layer of 7/16” OSB top surface, a built-in ventilation space maintained by 1” wood spacer blocks and polyisocyanurate insulation with a minimum R Value of 30.
- F. Eave/Rake Starter Strip: “Pro-Start” by GAF comparable products of Tamko, Elk, Owens Corning.
- G. Cements:
 - 1. Lap Cement: Fibrated cutback asphaltic type recommended for use as an adhesive In the cold application of asphalt roofing or underlayment; free of toxic solvents.
 - 2. Plastic Flashing Cement: A non-asbestos fibrated asphalt plastic cement complying with ASTM D 2822 or ASTM D 4586 or Fed. Spec. SSC-153, Type 1, and designed for trowel application.
 - 3. Tab Cement: Quick-setting asphalt cement recommended by shingle manufacturer for fixing down loose tab.
- H. Temporary Protection: Sheet polyethylene or fiber reinforced plastic. Provide weights to retain sheeting in position.
- I. Auxiliary Materials: Prefabricated flashing units, bonding adhesives, sealants, splicing cements, mastics and other accessory materials shall be recommended by producer of roof membrane for the system installed.-

PART 3 - EXECUTION

3.1 GENERAL:

- A. Install roofing membrane and flashing system in accordance with details, specifications and best practices recommended by membrane manufacturer.

1. Follow all recommendations and adhere to all precautions specified by roofing manufacturer except that where conflict occurs between manufacturer's recommendations and these specifications, the more stringent requirement shall prevail.
2. No wet or damaged materials shall be installed.

3.2 REMOVAL AND PREPARATION OF EXISTING ROOFING

- A. Refer to Section 070150 "Preparation for Reroofing" for remove of existing roofing material and accessories down to the existing structural roof substrate.

3.3 TEMPORARY PROTECTION

- A. Temporary Protective Sheeting: Provide over uncovered deck surfaces whenever precipitation is forecast.
 1. Retain sheeting in position with weights or temporary fasteners.
 2. Provide for surface drainage from sheeting to existing drainage facilities.
- B. Traffic: Do not permit traffic over unprotected or repaired deck surface.

3.4 INSPECTION FOR NEW ROOFING

- A. Acceptance of Conditions Affecting Application: Proceeding with roof system application shall designate acceptance of conditions.

3.7 ICE AND WATER SHIELD UNDERLAYMENT INSTALLATION

- A. Underlayment: Install 1 layer of underlayment over the entire surface of the nailable insulation where shingle roofing is to be installed in accordance with manufacturer's written instructions.

3.8 SHINGLES INSTALLATION

- A. Inspection: Do not apply shingles to underlayments which are wet, wrinkled or buckled or will otherwise not allow shingles to lay flat.
- B. Install shingles according to manufacturer's recommendations on shingle wrappers. Apply in parallel courses, straight and true. Use vertical chalk lines to keep tabs properly aligned. Finished result shall have an even appearance in color and texture, and shall be free of ridges, wavy patterns, warps and voids.
- C. Ridge Caps, Attic Exhaust and Eave Ventilation: Install attic and eave vents and ridge cap shingles as detailed on drawings.
- D. Starter Strip: Start shingles with manufacturer's starter strip or a course of tab-less shingles. Do NOT invert starter strips. Place starter strips so that seal strips will align with subsequent shingle tabs while keeping cutouts from aligning with joints and fasteners. Extend shingles approximately 3/8" beyond edge of roof trim.
- E. Coursing: Lay shingles with exposure to match existing as recommended by manufacturer. Lay shingle strips with the ends barely touching each other. Begin shingle application at center of eaves, just lapping starter strip.

1. "Racking" or application straight up the slope is not permitted.
 2. Apply shingles across and diagonally up the slope, using a "multi-course, stepped-off diagonal method" recommended by the manufacturer, offsetting each course 6" with respect to previous course, including starter strip. After every fifth or sixth course verify with a chalk line that courses are straight and are parallel to the eaves.
 3. Fastening: Secure each shingle strip with 6 fasteners, puncturing the shingle 5/8" above and 1/2" each side of the heads of the cutouts, and 1" from ends. Drive fasteners straight and true, perpendicular to the shingle face, tight to the shingle but not over-tight.
 4. Accurately adjust nail guns for correct penetration.
 5. Architect reserves right to require replacement of shingles that have been fastened with over-driven fasteners.
 6. Exposed nails will be permissible only where unavoidable, and then shall be covered with plastic cement.
- F. Sealing Down Tabs: Strictly follow manufacturer's recommendations. Should there be any question of tabs sealing before storms with high winds may appear, ensure sealing of tabs by walking on tabs after roof is hot from sun. In cold weather, provide protection as specified near the end of this Section.
- G. Place edges of shingles at rakes in full bed of plastic cement.
- H. Do not cut shingles when laid on roof.
- I. As work progresses, inspect for any improperly placed fasteners and repair carefully.

3.9 PROTECTION

- A. Should wind gusts greater than 35 mph be predicted before shingle tabs have had a complete chance to seal, protect shingles from wind by covering with heavy canvas, sail cloth or other suitable materials nailed down to roof deck under lengths of lumber.
- B. After storm subsides, remove protection and replace shingles damaged by wind and/or by anchors used to secure protection.

3.10 CLEAN UP AND INSPECTION

- A. Remove extra fasteners, shingles and all debris from the roof. Sweep all around the building with a magnetic broom to pick up stray nails.
- B. Inspect all areas where asphalt cements have been applied for freedom of bubbles and proper adhesion. Repair as required. Remove any excess plastic cement, using solvent that will not damage shingles.
- C. 30 days after installation, inspect all tabs for adhesion. Where tabs are not adhered, secure tab with 2 dabs of plastic cement the size of a quarter applied to dry shingles after removing dust and other contaminants.
- D. Leave roof clean and watertight.

END OF SECTION 075311

DIVISION 7 – THERMAL & MOISTURE PROTECTION

SECTION 075320
ADHERED EPDM ROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Fully adhered EPDM sheet roofing systems.
2. Board insulation.
3. Membrane roof flashings, base flashings and parapet flashings.
4. Elastomeric flashing boots and pitch pockets at pipe penetrations.
5. Fasteners and adhesives.
6. Sealants.

B. Related Work Specified In Other Sections:

1. Section 013300 “Submittal Procedures” for submittal of required items.
3. Section 061000 “Carpentry Work” for plywood sheathing and wood blocking, nailers.
4. Section 076200 “Sheet Metal Work” Sheet metal work and roof trim

1.3 QUALITY ASSURANCE

- A. Roofing Contractor: Illinois licensed, specializing for at least 5 years in the type of membrane system involved, who is approved by Architect and is certified/licensed by new roofing membrane system producer and who can furnish for this installation a foreman factory trained by the roof membrane system producer.
- B. Source of Supply: Membrane system materials shall be obtained from a single source of supply except as authorized otherwise by membrane producer.
- C. Standards of Installation: All components of roof system shall be furnished and installed to meet the wind 72 mph wind warranty.

- D. Scheduling and Coordination:
 - 1. Schedule roof removal work to coincide with commencement of installation of new roofing system.
 - 2. Coordinate roofing installation with mechanical and electrical work associated with roof penetrations.
 - 3. No phased construction will be considered or approved.
- E. Wet and Damaged Materials: Shall not be installed.

1.4 SUBMITTALS

- A. Process all submittals as required in Section 01300 – Submittals.
- B. Product Data: Submit 3 copies of roofing materials producer's specifications, material characteristics and installation instructions for each product required including fasteners.
- C. Shop Drawings: Indicate:
 - 1. Outline of roof and dimensions.
 - 2. Typical and special details for flashings, roof curbs, penetrations, perimeter conditions, termination details, etc. Reference the locations of details on the roof outline.
 - 3. Number and mark of each factory prepared roofing sheet and flashing.
 - 4. Layout of tapered insulation saddle areas.
 - 5. Provide fastener locations and spacing for insulation installation.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Packaging: Deliver materials to the job site in their original containers or packages, sealed, with legible labels intact, brand name, lot number, warning labels and reference standards clearly shown.
- B. Temperatures Prior to Use: Store materials in the dry and in accordance with membrane producer's instructions. Other than roof membrane, all materials furnished by membrane producer shall be stored between 60°F and 80°F. If exposed to lower temperatures, restore to 60 - 80°F prior to use.
- C. Warped or Broken Insulation Boards: Shall be removed from site.

1.6 JOB CONDITIONS

- A. Coordinate work so that the existing roofing system is not removed when weather conditions threaten the integrity of the building contents or intended continued occupancy.
- B. Maintain continuous temporary protection after removal of existing roofing, until installation of new roofing system, whenever precipitation is forecast.

- C. Ambient Conditions: Do not apply adhesives below adhesive manufacturers' recommended ambient temperature ranges.
- D. Cold Weather: Follow membrane producer's special recommendations when cold weather retards free flow of adhesives and sealants. Do not apply adhesives below adhesive manufacturers' recommended ambient temperature ranges.
- E. Fire Prevention: Take every precaution to prevent fire.
 - 1. Maintain at least 2 portable fire extinguishers, rated 10-B:C-20 pounds, near area where adhesives are being used and train applicators in their proper use.
 - 2. Do not use open flames to heat adhesives. Allow solvents to air-dry.
 - 3. Use only grounded spray equipment.
- F. Coordinate with Owner to shut off or block vents which may allow solvents or adhesives vapors to be drawn inside the building.

1.7 WARRANTIES

- A. New Roofing: Shall be provided with a non-prorated, No-Dollar-Limit, full system warranty to Owner, including tapered insulation saddles, against leaks or defects of any kind due to faulty materials or workmanship, and to sustain a 72 mph maximum wind speed as follows:
 - 1. Roofing membrane system producer's 20 year warranty for materials and workmanship.
 - 2. Roofing Contractor's 2 year warranty for workmanship.

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

- A. System Fire Rating: Provide a fire-resistant membrane and insulation assembly which has been tested and listed by Underwriter's Laboratories, Inc. (UL) as Class A, for the roof deck and slopes to be used on this project.
- B. System Wind Rating: Roof to be warranted for a 72 mph maximum wind speed.
- C. System Type: Un-Reinforced EPDM membrane fully adhered to the top layer of insulation units.
- D. Membrane Joint System: Membrane system producer's splice tape system.
- E. Approved Products: Use one of the following systems to the extent that it meets the requirements of this Section:
 - 1. EPDM Membrane System:
 - a. Carlisle "Sure-Seal Non-reinforced E.P.D.M."
 - b. Firestone "RubberGard LS EPDM".
 - c. Versico "Versigard Roofing System."
- F. Membrane Joint System: Membrane system producer's splice tape system.

2.2 MATERIALS

- A. Membrane: EPDM Roof Membrane: Black, ethylene propylene diene monomer (EPDM) cured Rubber, .060"(60 mil) thick non-reinforced.
- B. Roof Insulation: Rigid board insulation of foamed isocyanurate core with manufacturer's standard glass fiber reinforced mat facers or organic/inorganic facers integrally laminated to both sides; minimum aged R=5.5 per 1" of thickness: Insulation shall be 25 psi for insulation directly below the EPDM membrane. All other insulation to be 20psi. . Insulation furnished shall be as approved by membrane manufacturer.
 - 1. Tapered Insulation for Saddle & and Crickets: Taper as required to achieve slopes indicated, or, if not indicated, not less than rate as noted on drawings after roof deflection under full design load.
- C. Mechanical Anchors: Types recommended by roof system manufacturer including compression plates, for the kind of deck indicated and for wood nailers, featuring anti-corrosive materials and anti-blackout design. Anti-corrosion coating shall pass 30 cycles in Kesternich Cabinet DIN #50018 - 2 liter.
- D. Base and Parapet Flashing: Same material as used for roof membrane.
- E. Flashing To Cover Corners In Substrates: EPDM System: Roof membrane producer's uncured, unreinforced EPDM flashing strips at least .045" (45 mil) thick.
- F. Pipe Flashings: Premolded rubber boots approved by system producer for the membrane system, complete with stainless steel, screw tightened, pipe clamps.
- G. Pitch Pockets: Flanged pieces of flashing material placed around irregularly shaped roof penetrations filled with grout and a pourable sealer.
- H. Temporary Protection: Sheet polyethylene or fiber reinforced plastic. Provide weights to retain sheeting in position.
- I. Auxiliary Materials: Prefabricated flashing units, bonding adhesives, sealants, splicing cements, mastics and other accessory materials shall be recommended by producer of roof membrane for the system installed.
- J. Termination Bars: One Piece Surface mounted, .063" thick mill finish aluminum, "Flat Bar" 1" x 1/8" thickness as manufactured by W.P. Hickman, or Architect approved equal co. Furnish aluminum in lengths not more than 4 ft long. All exposed fasteners shall be installed with neoprene washers.

PART 3 - EXECUTION

3.1 GENERAL

- A. Install roofing membrane and flashing system in accordance with details, specifications and best practices recommended by membrane manufacturer.
 - 1. Follow all recommendations and adhere to all precautions specified by roofing manufacturer except that where conflict occurs between manufacturer's

recommendations and these specifications, the more stringent requirement shall prevail.

2. No wet or damaged materials shall be installed.

3.3 TEMPORARY PROTECTION

- A. Temporary Protective Sheeting: Provide over uncovered deck surfaces whenever precipitation is forecast.
 - 1. Retain sheeting in position with weights or temporary fasteners.
 - 2. Provide for surface drainage from sheeting to existing drainage facilities.
- B. Traffic: Do not permit traffic over unprotected or repaired deck surface.

3.5 INSPECTION FOR NEW ROOFING

- A. Acceptance of Conditions Affecting Application: Proceeding with roof system application shall designate acceptance of conditions.
- B. Inspect for wet and or defective insulation.

3.4 PREPARATION

- A. Surfaces to Receive Roofing System: Prepare so that they will be clean, dry, and free of fins, sharp edges, loose, damaged and foreign materials, oil and grease.
- B. Cleaning: Sweep roof surface clean of loose matter.

3.6 INSULATION INSTALLATION

- A. Thicknesses of insulation – see drawings.
- B. Refer to drawings for instructions on the installation of new insulation.
- C. Crickets and Saddles: Minimum slopes shall be as noted on drawings. Assure positive drainage flow by installing crickets and saddles wherever flow to roof drain is obstructed, is inadequate or must be positively encouraged during storms to counter the forces of excessive runoff speeds or high winds. Take special care to correct flow patterns at rooftop equipment and where roofs have been modified. Fully adhere to insulation using adhesive as recommended by manufacturer.

3.7 ROOF MEMBRANE INSTALLATION

- A. General: Install roofing membrane and flashings in accordance with details, specifications and best practices recommended by membrane producer. Follow all recommendations and comply with all precautions specified by roofing producer except that where conflict occurs between producer's recommendations and these specifications, the more stringent requirement shall prevail.
 - 1. Direction of Membrane Placement: Orient the membrane so that rainwater runs over rather than along lap joints.
 - 2. Whole Sheets: Use whole, single sheets to the extent practicable.

B. Membrane Installation: Lay membrane in full bed of contact adhesive for 100% adhesion.

1. Relaxing: Roof membrane shall be set in place over substrate without stretching and allowed to relax 30 minutes before bonding.
2. Placement: Set sheets in final position, free of wrinkles and folds, overlapping adjacent sheets, with up-hill sheet on top of joint. Make overlap 5" of membranes. Then roll sheet back evenly onto itself. Sweep away bonding contaminants from mating surfaces using a stiff bristled broom.
3. Bonding Adhesive Application: Apply evenly to underside of sheet and to insulation at about the same time so as to allow matching drying times. Smooth out adhesive with nap roller. Hold bonding adhesive well back from edges to be spliced over other membrane.
4. Bonding to Insulation: When bonding adhesive is tacky and does not stick or string to touch of a dry finger, roll membrane into the coated substrate slowly and evenly so as not to cause wrinkles. Compress the bond with an approved roller. Do not bond surfaces before adhesive becomes tacky. Should adhesive lose its tackiness, reapply adhesive. Set the pace of work accordingly. When first half of a sheet is fully adhered, complete other half in same manner.
5. Contaminated Adhesive: Should adhesive become contaminated by dust, moisture, walking etc., re-apply adhesive, but only after contaminated adhesive is thoroughly dry, even if redoing entire field of adhesive is required. Remove contaminated adhesives when so recommended by membrane producer.

C. Lap Splices:

1. Cleaning: Sweep away excess talc and other bonding contaminants from mating surfaces using a stiff bristled broom.
2. Adhesive Application: Scrub on bonding adhesive to each surface to be mated, extending adhesive 1/2" to 3/4" beyond edge of the sheet that will be laid on top. Scrub harder where there is excess dusting agent or contamination. Time the application of adhesive to each surface so as to allow matching drying times when each side of splice tape is pressed into the adhesive.
3. Rolling: Roll the splice tape into the adhesive applied onto bottom sheet, leaving no edge of tape un-wet by the adhesive.
4. Trimming: Trim the top sheet as required to allow splice tape to be exposed 1/8" to 1/2" after top sheet is fixed.
5. Bonding: Fix the top sheet in place by allowing the sheet to carefully fall on to the freshly exposed top surface of the splice tape, making a joint free of wrinkles and fishmouths. Broom the entire length of the splice as the splice is made and then roll the splice tight with a silicone wheeled hand roller, working across the joint and then along its length.
6. Splices between Lengths of Splice Tape: Lap the splices at least 1" and cover such joints with a 6" x 6" patch of uncured membrane, sealed all around with lap edge sealant.
7. Sealing Exposed Scrim: Wherever the membrane reinforcement scrim is exposed, cover with continuous bead of lap edge sealant.
8. Sealant Application: Prime the surfaces before applying sealant and tool the sealant bead, as required by membrane manufacturer. Take caution to not disturb fresh lap sealant.

- D. Edge Attachment: Mechanically attach edges of membrane all around roof edges and roof openings, anchoring into parapets and edge blocking, according to membrane producer's recommendations and approved details.
- E. Flashing: Bond only to clean surfaces. Contour the membrane to fit substrate to which it is bonded so as not to allow bridging or gapping effect.
 - 1. Roof Interruptions, Curbs and Edges: Flash with longest pieces practicable. Include intersections with other roofs. Terminate flashings a minimum of 8" above adjacent roof surface unless indicated otherwise.
 - 2. Pipe Penetrations: Flash with prefabricated rubber boots. Seal the top of boots with stainless steel strap clamps and continuous bed of mastic sealant. Form all surfaces so as to provide positive drainage.
 - 3. Pipe Penetrations: Seal according to Architect's approval using sealant pockets having proper metal flashings all around.
 - a. Vent Stacks shall be extend to be a minimum of 12" above the roof surface.
 - 4. Base Flashings: Membrane flashings applied over upright surfaces shall be fully adhered to substrate, all across contact area, using techniques similar to those used to bond main roof membrane.
 - 5. Joints In Membrane Flashings: Provide a minimum lap of 3" at joints and compress the bond with an approved roller. Round off membrane corners. Apply additional patches of flashing membrane over joints and seal all around edges, according to roof membrane system producer's recommendations.
 - 6. Flashing Over Fasteners: Cover the fasteners with flashing membrane, providing a minimum lap of 3" beyond washers.
 - 7. Expansion Joints:
 - a. Install per manufacturer's detailed instructions, carefully sealing joints.
 - b. Fill expansion voids with expansion joint insulation. Fill voids completely. Do not use any rigid materials.
- F. Termination Bars: Apply where required. Anchor with approved fasteners and neoprene washers not more than 12" o.c. and within 2" of ends of units. Leave expansion space between units of 3/16" when metal temperature is 70°F or below and 1/8" when above 70°F.
- I. Temporary Closures: Install as needed to prevent water from flowing beneath roof system during inclement weather.
 - 1. Extent: The roof membrane shall be extended at least 2 feet past edge of roof insulation and a continuous layer of sealer applied onto substrate 12" wide along the membrane edge.
 - 2. Sealing Edge: Firmly embed roof membrane into sealer and provide continuous pressure over the length of the cut-off, using lumber and other ballast, so as to prevent blow-off.
- J. Repairs:
 - 1. Wrinkles: When within 18" of a splice or running towards a splice or positioned to interrupt proper drainage, cut out the wrinkle and repair with unspliced roof membrane to at least 3" beyond the wrinkle.
 - 2. Cuts and Punctures: Patch over with roof membrane to at least 3" beyond the break.

3.8 INSTALLATION OF SHEET METAL WORK

- A. Coordinate membrane installation with Section 076200 – Sheet Metal Work Contractor.

3.10 CLEAN UP

- A. Smears and Droppings: Clean from all non-roofing surfaces.
- B. Rubble, Debris, and Excess Materials: Remove roof construction rubble, debris, and excess roofing materials and containers.

END OF SECTION 075323

DIVISION 7 – THERMAL & MOISTURE PROTECTION

SECTION 076200
SHEET METAL WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Flashings and sheet metal work.
2. Metal copings, metal edges and metal fascias.
3. Metal gutters and downspouts.
4. Metal soffit.
5. Joint sealants.

B. Related Requirements:

1. Section 061000 "Rough Carpentry" for treated blocking and nailers.
2. Section 075311 "Asphalt Shingles Roofing" for materials and installation of new roofing.

1.3 COORDINATION

- A. Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials.
- B. Coordinate sheet metal flashing and trim installation with adjoining wall materials, joints, and seams to provide leakproof, secure, and noncorrosive installation.

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 manufactured product and accessory.

B. Shop Drawings: For sheet metal flashing and trim.

1. Include plans, elevations, sections, and attachment details.
2. Detail fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish between shop and field-assembled work.
3. Include identification of material, thickness, weight, and finish for each item and location in Project.
4. Include details for forming, including profiles, shapes, seams, and dimensions.

5. Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
 6. Include details of termination points and assemblies.
 7. Include details of special conditions.
 8. Include details of connections to adjoining work.
 9. Detail formed flashing and trim at scale of not less than 1-1/2 inches per 12 inches.
- C. Samples for Initial Selection: For each type of sheet metal and accessory indicated with factory-applied finishes.
- D. Samples for Verification: For each type of exposed finish.
1. Sheet Metal Flashing: 12 inches long by actual width of unit, including finished seam and in required profile. Include fasteners, cleats, clips, closures, and other attachments.
 2. Trim, Metal Closures, Expansion Joints, Joint Intersections, and Miscellaneous Fabrications: 12 inches long and in required profile. Include fasteners and other exposed accessories.
 3. Unit-Type Accessories and Miscellaneous Materials: Full-size Sample.
- E. Certifications: Submit roof membrane producer's certification that metal items to be furnished for roofing are acceptable for inclusion in roof system producer's warranty.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For sheet metal flashing panels and trim, and its accessories, to include in maintenance manuals.

1.6 QUALITY ASSURANCE

- A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.
- B. Applicator: A company specializing in sheet metal flashing work and approved by membrane roofing subcontractor; having 10 years' minimum experience.
- C. Provide water and weather-tight work, with surfaces free from waves and buckles, and seams avoided as much as possible.
- D. Comply with applicable recommendations and details of the latest editions of the SMACNA Architectural Sheet Metal Manual and the NRCA Roofing & Waterproofing Manual, including workmanship and installation.
- E. Coordination:
1. Coordinate fabrication and installation of metal roof flashings with roof membrane system installers so as to meet requirements of roof warranty (specified in roofing specifications Section).
 2. Coordinate metal flashings work with adjoining work for proper sequencing of each installation to ensure the best possible weather resistance and the protection of materials and finishes from damage.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver prefinished sheet metal components free of surface blemishes.
- B. Do not store sheet metal flashing, panels and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry.
- C. Protect strippable protective covering on sheet metal flashing, panels and trim from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal flashing and trim installation.

1.8 WARRANTY

- A. Sheet metal flashings incorporated into membrane roofing shall be compatible with the requirements of the roof system producer for inclusion into the roofing warranty.
- B. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing, panels and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Exposed Panel Finish: Deterioration includes, but is not limited to, 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 paint to adhere to bare metal.
 - 2. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General: Sheet metal flashing, coping and trim assemblies shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.
- B. Sheet Metal Standard for Flashing, Coping and Trim: Comply with SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.

2.2 FABRICATED SHEET METAL COMPONENTS

- A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.

- B. Counterflashings: Made from 0.050" aluminum, with 3" end laps. Corners to be mitered and solder sealed. Fabricate with punched nail hole slots 12" o.c. to allow for expansion.
- C. Coping: .050" thick mill finished aluminum strips, formed to profiles indicated, with corners formed by butting adjacent fascia pieces over backer splice unit that has been mitered and welded.
- D. Metal Edge and Fascias: .050" thick mill finished aluminum strips, formed to profiles indicated. to provide 1-1/2" nailing flange and 1-1/2" downturn terminated by a 1/2" 45° drip.
- E. Gutters: .050" thick, factory-finished 5005-H134 aluminum alloy, in sizes to match existing except as otherwise noted or as shown on the drawings. Furnish in 10 ft or 12 ft lengths.
 - 1. Corners: Welded or spliced over a welded corner unit. Exposed welds shall be factory painted to remove all welding blemishes.
 - 2. Hanger Straps: Provide heavy duty anchors every 24" o.c.
- F. Downspouts: 0.050" aluminum, having smooth surface and rectangular or round profile (see drawings), sizes shown on the drawings. Include hard/soft rubber boots with stainless steel anchor bands for attachment of downspouts to underground drain system. Finish to match gutters.
- G. Metal Soffit:
 - 1. Type: V-groove, fully vented soffit formed aluminum panels, PAC 750 by Carlisle Corp. or Architect approved composed as follows.
 - a. Dimensions: 12" wide x. full length as detailed on drawings
 - b. Thickness: 0.032".
 - c. Profile: V-grooves 6" o.c. fully vented
 - d. Surface: Smooth.
 - e. Trim: All trim shall be of same material, finish and color as panels.
 - f. Fasteners: All fasteners shall be concealed.
- H. Finish (All Fabricated Sheet Metal Components except as otherwise noted): Factory applied fluoropolymer coating containing a minimum of 70%, by weight, Kynar 500, Kynar 500 VLD or Hylar 5000 resin; color to be a natural anodized color as selected by Architect from manufacturer's full range of standard options.

2.3 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.
- B. Flashing Cement: Asphalt mastic cement formulated for weathering and flow resistance, meeting requirements of Fed. Spec. SS-C-153.

- C. Adhesives for sheet metal flashings in contact with EPDM roofing shall be type recommended by flashing sheet manufacturer and approved by roofing system manufacturer to provide a waterproof/weather-resistant seaming and adhesive application compatible with roofing system materials.
- D. Dissimilar Metal Protection: Bituminous coating conforming to Fed. Spec. TT-C-494 or SSPC-Paint 12, or plastic separators, or insulating tape, subject to Architect's approval.
 - 1. For metal flashing in contact with roofing, use separation materials or methods compatible with roofing system materials as approved by roofing system manufacturer.
- E. Sealant Tape for Surface Mounted Flashings: Protective Treatments, Inc., "Product #606 Architectural Sealant Tape," 3/16" x 3/4" minimum size.
- F. Sealant for Metal Flashing Joints: Use one of the following, color as best blends with color of flashing material:
 - 1. Dap, Inc. "Butyl – Flex."
 - 2. Pecora Corp. "BC 158."
 - 3. Protective Treatments, Inc. (PTI) "757 Butyl Sealant."
 - 4. Tremco "Butyl Sealant."
 - 5. Sonneborn Bldg. Products "Butakauk."
- G. Fasteners: Fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.
 - 1. For Fastening Aluminum Flashings: Aluminum or stainless steel nails with annular threads, of sufficient length to penetrate wood blocking at least 7/8".
 - 2. For Cleats to Nailers: Use ring-shank or screw-shank nails long enough to penetrate the wood nailer at least 1-3/4" or use #8 screws long enough to penetrate the wood nailer 3/4".
 - 3. For Exposed Fastening: Fasteners as recommended by panel manufacturer or as specified above or screws, with soft neoprene washers.

2.4 FABRICATION, GENERAL

- A. General: Custom fabricate sheet metal flashing and trim to comply with details shown and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required. Fabricate sheet metal flashing and trim in shop to greatest extent possible.
 - 1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
 - 2. Obtain field measurements for accurate fit before shop fabrication.
 - 3. Form sheet metal flashing and trim to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
 - 4. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.

- B. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.
 - 1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.
 - 2. Use lapped expansion joints only where indicated on Drawings.
- C. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal to provide for proper installation of elastomeric sealant according to cited sheet metal standard.
- D. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
- E. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard for application, but not less than thickness of metal being secured.
- F. Drip Edges: All exposed edges of flashing shall have 1/2" projecting hemmed edge.
- G. Seams: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.
 - 1. Verify compliance with requirements for installation tolerances of substrates.
 - 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
 - 1. Install sheet metal flashing fascia panels and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of welds, and sealant.
 - 2. Install sheet metal flashing and fascia panels and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
 - 3. Space cleats not more than 12 inches apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
 - 4. Install exposed sheet metal flashing and trim with limited oil canning, and free of buckling and tool marks.
 - 5. Torch cutting of sheet metal flashing and trim is not permitted.

- B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.
 - 1. Coat concealed side of sheet metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.
 - 2. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.
- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at maximum of 10 feet with no joints within 24 inches of corner or intersection.
 - 1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with sealant concealed within joints.
- D. Fasteners: Use fastener sizes that penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.
- E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.
- F. Seal joints as required for watertight construction.
 - 1. Use sealant-filled joints unless otherwise indicated. Embed hooked flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F.
 - 2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."

3.3 INSTALLATION

- A. General:
 - 1. Install sheet metal wall flashing to intercept and exclude penetrating moisture according to cited sheet metal standard unless otherwise indicated. Coordinate installation of wall flashing with installation of other wall components.
 - 2. Secure flashings in place using concealed fasteners. Use no exposed fasteners except as detailed. Install work watertight, making allowances for expansion and contraction. Install fasteners snug; do not over-tighten. Finished work shall be free of waves, warps, buckles, fastening stress, and distortions.
- B. Roof Edgings: Install in coordination with roofing, as required to maintain roofing warranties. Engage drip hem around the anchor cleat to the full depth of the drip hem. Metal flanges under roof membranes shall be attached to blocking at 4" o.c., with nails placed 1" from back edge of roof flange. .

- C. Gutters:
 - 1. Support every separate section. Keep gutters separated from walls to avoid staining and corrosion.
 - 2. Use hangers adequate in size and spacing to support gutters filled with ice.
 - 3. Construct gutters with positive slopes, to prevent accumulation of standing water. Lap joints to match drainage flow.
 - 4. Provide at least one movement joint midway between each gutter downspout to allow for expansion and contraction of gutters.

- D. Downspouts: Install in accordance with manufacturer's instructions and as detailed on drawings.
 - 1. Keep metal downspouts separated from walls to avoid staining and corrosion.
 - 2. Install downspouts visually plumb and anchor to building at top and bottom and at 4 ft (maximum) intervals in between. Protect building surfaces from damage from hanger and strap connectors. Install with hard/soft rubber boots with stainless steel anchor bands for attachment of downspouts to underground drain system.

- E. Soffits: Install in accordance with manufacturer's instructions and as detailed on drawings.

3.4 CLEANING AND PROTECTION

- A. Clean off excess sealants.

- B. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended by sheet metal flashing and trim manufacturer. Maintain sheet metal flashing and trim in clean condition during construction.

- C. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 076200

DIVISION 07 – THERMAL & MOISTURE PROTECTION

SECTION 078400
FIRESTOPPING

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. Firestopping systems for the firestopping of top and ends of fire rated partitions and where elsewhere designated on drawings.
- B. Sealing of **ALL** sleeved and un-sleeved pipe, conduit, cable, cable tray, duct and similar penetrations through **ALL** rated walls and partitions.
- C. Related Requirements:
 - 1. Section 004323 "Alternates" for Alternate Bid Work designated for this section.
 - 2. Section 079200 "Joint Sealants" for miscellaneous sealant work.
- D. With respect to fire stopping of pipe, pipe sleeves and conduit penetrations, the requirements of this Section apply and are to cover fire stopping requirements specified in Mechanical and Electrical Divisions. Work of this Section shall be coordinated with Mechanical and Electrical contractors as required to assure compliance with the fire stopping requirements specified in Mechanical and Electrical Divisions.

1.3 SUBMITTALS

- A. Schedule of Applications: Submit 6 copies of a usage schedule showing what products will be used for which situations.
 - 1. Submit detailed drawings of all firestopping systems to be used, giving names of materials and means of installation. Indicate the appropriate UL or FM approval number with each drawing.
 - 2. On a plan drawing of the project, reduced in scale as convenient, indicate where each kind of firestopping system submitted will be located.
- B. Product Data: Provide data on characteristics, performance and limitation criteria of products.
 - 1. Include manufacturer's material safety data sheets (MSDS).
 - 2. Manufacturer's Installation Instructions: Include preparation and installation procedures required.

- C. Certificates.
 - 1. Manufacturer's Certification: Submit manufacturers' letters of certification verifying acceptability of proposed Fireproofing Installer.
 - 2. Verification of Installation: Contractor shall submit letter certifying that fire stopping has been installed complete and in accordance with all specifications.
- D. Sample Warranties: For manufacturer's warranties.

1.4 QUALITY ASSURANCE

- A. Installer: Firestopping Installer shall complete the installations as specified and to the satisfaction of all authorized inspectors.
- B. Manufacturer's Representative: Each manufacturer furnishing materials for the work shall have an on-site representative to perform the following:
 - 1. Assist Installer with selection of correct products for the various conditions of installation.
 - 2. Train Installer's personnel in proper installation procedures, including quantities of materials necessary to meet the fire resistance ratings required.
 - 3. Verify throughout the course of the work that correct installation procedures are being used.
- C. Firestopping Systems' Performance Requirements:
 - 1. Fireproofing Resistance: As appropriate to the fire rating(s) noted on the Drawings, per ASTM E 814.
 - a. Flame and Temperature Ratings: As required by the pertinent building codes, according to test results produced in nationally accepted test agencies from tests conducted per ASTM E 814 or UL 1479. Flame (F) rating must be no less than the fire resistance rating of the assembly through which it is applied. Temperature (T) rating, when required by code authority, shall be measured under a positive pressure differential of at least .01" of water column.
 - 2. Expansion Joint Materials: Tested for F, T and L ratings per UL 2079 at full extension after 500 expansion/contraction cycles.
- D. Product Compatibility: In each type of firestopping system used, each component shall have been tested and approved for use with the other components installed.
- E. Verification of Compliance: The Contractor shall provide to the Architect, prior to final payment, a letter of certification verifying that all perimeters of fire resistance rated constructions as well as penetrations through fire resistance rated constructions were completed as required by Code and the requirements of this Section

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in manufacturer's original, unopened packaging with intact labels identifying product, UL labels, lot number and use-by date.

- B. Store materials at site in one location, in original containers, under conditions recommended by manufacturer.
- C. No material shall be used which has exceeded its shelf life.

1.6 PROJECT CONDITIONS

- A. Install materials only under the conditions of temperature and humidity recommended by manufacturer of product to be installed.
- B. Coordinate with other trades as required to assure proper installation of their work and the firestopping work. Install firestopping at drywall penetrations before finishing is started on drywall joints.

PART 2 - PRODUCTS

2.1 ACCEPTABLE PRODUCTS

- A. Acceptable Manufacturers: Products shall be produced by one or more of the following manufacturers:
 - 1. Sonneborn Div. of ChemRex Inc.
 - 2. Hilti.
 - 3. 3M Brand Products.
 - 4. RectorSeal Metacaulk.
 - 5. Tremco.
- B. Acceptable Products: Use one of the following or similar produced by a manufacturer listed above:
 - 1. Hilti "FS-One" sealant with matching backer, and Hilti "FS-Fire Block."
 - 2. Sonneborn "NP2" sealant with BackerRod Mfg's "Ultra Block" fire blocking mat.

2.2 MATERIALS

- A. General: Use only UL listed materials complying with ASTM E 814 (UL 1479) or ASTM E 119 (UL 263) and appropriate to the kind of opening and kind of item penetrating the opening, as required to maintain the indicated fire rating of the construction assembly penetrated:
 - 1. Materials shall be VOC compliant.
 - 2. Materials shall be free of materials requiring hazardous waste disposal, including PCBs, lead and asbestos.
 - 3. For each kind of firestopping situation, use materials from only one manufacturer.
- B. Safing Insulation: Either unfaced mineral fiber OR ceramic fiber insulation, as required by system manufacturer
- C. Accessories: Furnish sleeves, confinement collars, dam material, primers, sealants and other placement and attachment accessories as recommended by manufacturer and as necessary to establish the required fire ratings

- D. Identification Labels: Plastic or plastic shielded paper, configured for permanent attachment and bearing the following information:
1. FIRESTOP SYSTEM - DO NOT DISTURB.
 2. (Manufacturer's Name).
 3. System Number _____.

PART 3 - EXECUTION

3.1 EXAMINATION AND PREPARATION

- A. Verify that openings are ready to receive the work of this Section and that elements penetrating the floors, walls and partitions have been permanently affixed. All penetrations are to have sleeves, except as approved otherwise by Architect.
- B. Verify that pipe sleeves have been properly installed.
1. Pipes and conduits shall be sleeved with un-split Schedule 40 pipe solidly joined to masonry with mortar, to drywall with joint compound and to concrete with mortar.
 2. Pipe sleeves shall be sized to maintain a minimum gap of 1" all around the pipe or conduit (including any insulation on the pipe), irrespective of whether the pipe or conduit is aligned with the center of the sleeve or is off-center.
 3. The pipe sleeve's length shall be 1" longer than the thickness of the wall assembly, so that it shall extend out from each face of the wall or partition by 1/2".
 4. The pipe sleeve's length at floors shall be 2 1/2" longer than the thickness of the floor assembly, so that it shall extend 2" above the rough floor elevation and 1/2" below the bottom of the floor assembly.
- C. Verify that pipes are not insulated with any materials inappropriate to the rated fire stopping system.
- D. Should an area requiring firestopping be covered up with other construction or should other conditions unsatisfactory for a proper installation be found, such as lack of sleeves, report the conditions to Contractor for rectification, and send copy of report to Architect. Do not proceed with installation until unsatisfactory conditions have been corrected.
- E. Clean substrate surfaces of dirt, dust, grease, oil, loose material and other matter that might affect bond of firestopping material.
- F. Protect adjacent surfaces from damage due to material installation.

3.2 APPLICATION

- A. General:
1. Apply materials in accordance with manufacturer's instructions, in the same manner as was used to achieve the UL design listing.
 2. Apply firestopping materials to uniform densities and texture, in sufficient quantities to achieve required fire resistance rating. Keep exposed work neat.

3. Where additional layers of construction create voids in addition to the primary floor or partition, treat the extra voids the same as primary voids, assuring that fire, smoke and gases are restricted from flowing in any voids.
 4. Install retention dams as required. After curing of firestop materials, incombustible dams may be left in place; combustible dams shall be removed.
- B. Penetrations Through Fire Rated and Smoke Rated Interior Walls And Partitions:
1. Apply firestopping wherever a void has been made in a wall or partition for the penetration of pipes, conduit, wire, cables, ducts, sleeves, or other items which could allow passage of flame, smoke or gases in the event of a fire —whether that wall or partition is rated or not rated.
 2. Ensure that any voids between the sleeve and the surrounding construction are filled and firestopped to the same degree as voids within the sleeve.
- C. Tops Of Interior Walls And Partitions: At tops of masonry partitions and gypsum partitions, which are fire rated or smoke rated, create a fire and smoke barrier by installing firestopping between the top of the wall or partition and the deck above.
- D. Permanently affix adjacent to each installation in a fire-rated wall the label specified above, properly identifying the firestopping system installed.
- E. Correct any firestops that do not conform to the requirements specified, at no additional charge to the Owner

3.3 CLEANING, AND PROTECTION

- A. Clean firestopping materials from adjacent surfaces.
- B. General Contractor shall protect work of this Section from damage by other trades.

END OF SECTION 078400

SECTION 079200
JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes:

- 1. Joint sealants for interior and exterior applications.

- B. Related Requirements:

- 1. Section 004323 "Alternates" for Alternate Bid Work designated for this section.
 - 2. Section 081113 "Hollow Metal Door Frames" for perimeter sealing of hollow metal door frames to walls.
 - 3. Section 084113 "Aluminum Framed Entrances" for perimeter sealing of aluminum frames to walls.
 - 4. Section 085113 "Aluminum Storefront Windows" for perimeter sealing of aluminum frames to walls

1.3 PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.
- B. Provide joint sealants for interior applications that establish watertight and airtight continuous seals without staining or deteriorating joint substrates.

1.4 SUBMITTALS

- A. Product Data: For each type of joint sealant product.
- B. Samples: For each kind and color of joint sealant required.
- C. Joint Sealant Schedule: Include the following information:
 - 1. Joint sealant application, joint location and designation.
 - 2. Joint sealant manufacture and product line.
 - 3. Joint sealant formulation.
 - 4. Joint sealant color.

- D. Product Test Reports.
- E. Preconstruction compatibility and adhesive test reports.
- F. Preconstruction field adhesion test reports.
- G. Field adhesion test reports.
- H. Warranties.

1.5 QUALITY ASSURANCE

- A. Preinstallation Conference: Conduct conference at Project site.

1.6 WARRANTY

- A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MAUFACTURERS

- A. Products: Subject to compliance with requirements, provide one of, the products listed herein.

2.2 JOINT SEALANTS

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. VOC Content of Interior Sealants: Sealants and sealant primers used inside the weatherproofing system shall comply with the following limits for VOC content when calculated in accordance with 40 CFR 59, Part 59, Subpart D (EPA Method 24):
 - 1. Architectural sealants shall have a VOC content of 250 g/L or less.
 - 2. Sealants and sealant primers for nonporous substrates shall have a VOC content of 250 g/L or less.
 - 3. Sealants and sealant primers for porous substrates shall have a VOC content of 775 g/L or less.
- C. Liquid Applied Sealants: Sealants and sealant primers shall comply with ASTM C 920 and other requirements for each liquid applied joint sealant specified including those referencing ASTM C 920 classifications for type, grade, class and uses related to exposure and joint substrates.
 - 1. Suitability for Immersion in Liquids: Where sealants are indicated of Use I for joints that will be continuously immersed in liquids, provide products that have undergone testing in accordance with ASTM C 1247. Liquid used for testing is deionized water unless otherwise indicated.

- D. Stain Test Response Characteristics: Where sealants are specified to be non-staining to porous substrates, provide products that have undergone testing in accordance with ASTM C 1248 and have not stained porous joint substrates indicated for the project.
- E. Suitability for Contact with Food: Where sealants are indicated for joints that will come in repeated contact with food, provide products that comply with CFR 177.2600.
- F. Colors of Exposed Joint Sealants: For windows and door framing, provide custom color to match window or door frame color.

2.3 SEALANT TYPES

- A. Sealant for Interior Control Joints and Door Frame Seals:
 - 1. Pecora “Dynaflex”
 - 2. Sika Chemical Co. “Sikaflex-1a”
 - 3. Sonneborn Div. of ChemRex Inc. “Sonolastic Ultra”
 - 4. Tremco “Vulkem 617”
- B. Sealant for Sink Surrounds and Other Interior Wet Areas:
 - 1. Pecora Corp. “AC-20 + Silicone”
 - 2. Sika Chemical Co. “Sikaflex-1a”
 - 3. Sonneborn Div. of ChemRex Inc. “Sonolastic OmniPlus”
 - 4. Tremco “Vulkem 116” or “227”
- C. Sealant for Joints in Floors: Polyurethane base, multi-component, chemical curing, self-leveling, Shore A hardness between 15 and 50; non-staining; non-bleeding:
 - 1. Sonneborn Div. of ChemRex Inc. “Sonolastic SL1” and “Sonolastic SL2”
 - 2. Tremco “Vulkem 45” or “245/255”
 - 3. H.S. Peterson “Isoflex”
- D. Sealant for Other Interior Uses: Acrylic base, single component, chemical curing, paintable, Shore A hardness of 55, maximum; non-staining; non-bleeding:
 - 1. Pecora Corp. “AC-20 + Silicone”
 - 2. Sonneborn Div. of ChemRex Inc. “Sonolastic Sonolac”
 - 3. Tremco “Tremflex 834”
- E. Sealant for General Exterior Use: Silicone base, single component, chemical curing; Shore A hardness between 15 and 50; non-staining; non-bleeding:
 - 1. Pecora “890 Architectural Silicone Sealant”
 - 2. Sonneborn Div. of ChemRex Inc. “Sonolastic Omniseal”
 - 3. Dow Corning “790 Building Sealant”
 - 4. Tremco “Spectrem 1”
- F. Lap Sealant for Sheet Metal Flashing Joints: Use one of the following:
 - 1. Pecora Corp., “BC 158”
 - 2. Dap, Inc., “Butyl - Flex”
 - 3. Tremco “Butyl Sealant”

2.4 JOINT FILLER

- A. Joint Filler: Backer rod for elastomeric sealants. Extruded closed cell polyethylene foam or polyethylene jacketed polyurethane foam, non-bleeding, non-staining, oversized 30 to 50 percent; provide one of the following:
 - 1. Dow: Ethafoam.
 - 2. Meadows: backer Rod.
 - 3. Sonneborn: Sonofoam backer Rod.

2.5 JOINT-SEALANT BACKING

- A. Sealant Backing Material, General: Non-staining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- C. Elastomeric Tubing Sealant Backings: Neoprene, butyl, EPDM or silicone tubing complying with ASTM D 1056, nonabsorbent to water and gas and capable of remaining resilient at temperatures down to minimum 26 deg. F (minimum 32 deg. C). Provide product with low compression set of size and shape to provide a secondary seal, to control sealant depth and otherwise contribute to optimum sealant performance.
- D. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.6 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant.
 - 2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
 - 3. Remove laitance and form-release agents from concrete.
 - 4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of sealant backings.
 - 2. Do not stretch, twist, puncture, or tear sealant backings.
 - 3. Remove absorbent sealant backings that have become wet before sealant application, and replace them with dry materials.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 - 1. Place sealants so they directly contact and fully wet joint substrates.
 - 2. Completely fill recesses in each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

- F. Tooling of Non-sag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
 - 1. Remove excess sealant from surfaces adjacent to joints.
 - 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 - 3. Provide concave joint profile per Figure 8A in ASTM C 1193 unless otherwise indicated.

3.4 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION 079200

SECTION 081113

HOLLOW METAL DOORS & FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes:
 - 1. Providing and installing new non-rated and fire rated interior hollow metal doors and frames.
 - 2. Providing and installing new non-rated interior hollow metal door frame for wood door.
- B. Related Requirements:
 - 1. Section 012300 "Alternates" for doors and frames associated with Alternate.
 - 2. Section 081416 "Flush Wood Doors" for wood door.
 - 3. Section 087100 "Finish Hardware" for door hardware.
 - 4. Section 088000 "Glazing" for glazing.
 - 5. Section 099000 "Painting" for finish painting of new hollow metal doors, transom panels and frame.

1.3 QUALITY ASSURANCE

- A. General: Provide hollow metal work manufactured by a single firm, made in compliance with recommended specifications of the Steel Door Institute (SDI), except as may be specified otherwise herein.

1.4 DEFINITIONS

- A. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or SDI A250.8.

1.5 COORDINATION

- A. Coordinate anchorage installation for hollow-metal frames.

1.6 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, and finishes.

- B. Shop Drawings: Include the following:
 - 1. Elevation of doors
 - 2. Details of doors, including, vertical and horizontal edge details and metal thickness.
 - 3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
 - 4. Locations of reinforcement and preparations for hardware.
 - 5. Details of each different wall opening condition.
 - 6. Details of anchorages, joints, field splices, and connections.

1.7 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For hollow metal door and frame assembly, for tests performed by a qualified testing agency.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver hollow-metal work palletized, packaged, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.
- B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- C. Store hollow-metal work vertically under cover at Project site with head up. Place on minimum 4-inch- (102-mm-) high wood blocking. Provide minimum 1/4-inch (6-mm) space between each unit to permit air circulation.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Acceptable Manufacturers:
 - 1. Hollow metal doors and frames shall be manufactured by one of the following:
 - a. Ceco.
 - b. Curries.
 - c. Precision Metals.
 - d. Philipp.
 - e. Steelcraft.
 - f. Security Metal Products Corp.

2.2 DOORS

- A. Construct doors to comply with the standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.
- B. Commercial Doors and Frames: NAAMM-HMMA 861
 - 1. Physical Performance: Level A according to SDI A250.4.
 - 2. Doors:

- a. Type: As indicated in the Door and Frame Schedule.
- b. Thickness: 1-3/4 inches (44.5 mm.)
- c. Face:
 - 1) Interior Frames:
 - a) Non rated: Form frames from 16-gauge sheet steel, with machine-mitered corners of interlock construction having faces only welded.
 - b) Fire-Rated Frames: Construct frames occurring in fire rated openings to meet and receive fire resistant ratings scheduled.
 - 2) Interior Doors: 18-gauge sheet steel, primed.
- d. Edge Construction: Continuously welded with no visible seam.
- e. Core: Manufacturer's standard honeycomb, polystyrene, vertical steel stiffeners, or rigid mineral fiber core with internal sound deadener on inside of face sheets where appropriate in accordance with SDI standards.
- f. Openings in Doors:
 - 1) Removable Glazing Stops: Rolled 20-gauge steel channels formed to finish slightly recessed from door face.
 - a) Corners: Mitered, reinforced and welded.
 - b) At Galvanized Doors: Use pre-galvanized steel channels.
- g. Construction: Full profile welded.

C. Frame Anchors

- 1. Jamb Anchors (Postinstalled Expansion Type for In-Place Concrete or Masonry) Minimum 3/8-inch- (9.5-mm-) diameter bolts with expansion shields or inserts. Provide pipe spacer from frame to wall, with throat reinforcement plate, welded to frame at each anchor location.
- 2. Floor Anchors: Formed from same material as frames, minimum thickness of 0.042 inch (1.0 mm), and as follows.

D. Floor Anchors: Formed from same material as frames, minimum thickness of 0.042 inch (1.0 mm), clip-type anchors, with two holes to receive fasteners.

- 1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.

E. Materials:

- 1. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B.
- 2. Frame Anchors: Steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.
- 3. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.
- 4. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow-metal frames of type indicated.
- 5. Grout: ASTM C 476, except with a maximum slump of 4 inches (102 mm), as measured according to ASTM C 143/C 143M.

- F. Bituminous Coating: Cold-applied asphalt mastic, compounded for 15-mil (0.4-mm) dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

2.3 FABRICATION

- A. Fabricate hollow-metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for metal thickness. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.
- B. Hollow-Metal Doors:
 - 1. Steel-Stiffened Door Cores: Provide minimum thickness 0.026 inch (0.66 mm), steel vertical stiffeners of same material as face sheets extending full-door height, with vertical webs spaced not more than 6 inches (152 mm) apart. Spot weld to face sheets no more than 5 inches (127 mm) o.c. Fill spaces between stiffeners with glass or mineral-fiber insulation.
 - 2. Vertical Edges for Single-Acting Doors: Provide beveled or square edges at manufacturer's discretion.
 - 3. Top Edge Closures: Close top edges of doors with flush closures of same material as face sheets.
 - 4. Bottom Edge Closures: Close bottom edges of doors where required for attachment of weather stripping with end closures or channels of same material as face sheets.
 - 5. Provide weep-hole openings in bottoms of exterior doors to permit moisture to escape. Seal joints in top edges of doors against water penetration.
- C. Hollow-Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
 - 1. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
 - 2. Grout Guards: Weld guards to frame at back of hardware mortises in frames to be grouted.
 - 3. Floor Anchors: Weld anchors to bottoms of jambs with at least four spot welds per anchor; however, for slip-on drywall frames, provide anchor clips or countersunk holes at bottoms of jambs.
 - 4. Jamb Anchors: Provide number and spacing of anchors as follows:
 - a. Postinstalled Expansion Type: Locate anchors not more than 6 inches (152 mm) from top and bottom of frame. Space anchors not more than 26 inches (660 mm) o.c.
 - 5. Head Anchors When recommended by Manufacturer): Two anchors per head for frames more than 42 inches (1067 mm) wide and mounted in metal-stud partitions.
 - 6. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers as follows. Keep holes clear during construction.
 - 7. Grout Guards: Formed from same material as frames, not less than 0.016 inch (0.4 mm) thick

- D. Hardware Preparation: Factory prepare hollow-metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.
 - 1. Reinforce doors and frame to receive nontemplated, mortised, and surface-mounted hardware.
 - 2. Comply with applicable requirements in SDI A250.6 and BHMA A156.115 for preparation of hollow-metal work for hardware.

2.4 STEEL FINISHES

- A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.
 - 1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with SDI A250.10; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.
- B. Drill and tap frames to receive nontemplated, mortised, and surface-mounted hardware.

3.3 INSTALLATION

- A. General: Install hollow-metal work plumb, rigid, properly aligned, and securely fastened in place. Comply with Drawings and manufacturer's written instructions.
- B. Hollow-Metal Frames: Install hollow-metal frames for doors, of size and profile indicated. Comply with SDI A250.11 or NAAMM-HMMA 840 as required by standards specified.
 - 1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
 - a. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
 - b. Install door silencers in frames before grouting.

- c. Remove temporary braces necessary for installation only after frames have been properly set and secured.
 - d. Check plumb, square, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
 - e. Field apply bituminous coating to backs of frames that will be filled with grout containing antifreezing agents.
- 2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.
 - a. Floor anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.
 - 3. In-Place Concrete: Secure frames in place with postinstalled expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
- C. Hollow Metal Doors: Fit hollow-metal doors accurately in frames, within clearances specified below. Shim as necessary.
- 1. Between Door and Frame Jambs and Head: 1/8 inch (3.2 mm) plus or minus 1/32 inch (0.8 mm).
 - 2. At Bottom of Door: 3/4 inch (19.1 mm) plus or minus 1/32 inch (0.8 mm).
 - 3. Between Door Face and Stop: 1/16 inch (1.6 mm) to 1/8 inch (3.2 mm) plus or minus 1/32 inch (0.8 mm).

3.4 ADJUSTING AND CLEANING

- A. Final Adjustments: Remove and replace defective work, including hollow-metal work that is warped, bowed, or otherwise unacceptable.
- B. Remove grout and other bonding material from hollow-metal work immediately after installation.
- C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.
- D. Touchup Painting: Cleaning and touchup painting of abraded areas of paint are specified in painting Sections.

END OF SECTION 081113

DIVISION 08 – OPENINGS
SECTION 081416
FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Solid-core non-rated pre-finished doors with wood-veneer faces.
 - 2. Factory fitting flush wood doors to frames and factory machining for hardware.
- B. Related Requirements:
 - 1. Section 004323 "Alternates" for Alternate Bid Work designated for this section.
 - 2. Section 061000 "Carpentry Work" for finish hardware installation.
 - 3. Section 081113 "Hollow Metal Door Frames" for hollow metal door frames.
 - 4. Section 087100 "Finish Hardware" for wood door finish hardware.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of door. Include details of core and edge construction. Include factory-finishing specifications.
- B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and the following:
 - 1. Dimensions and locations of blocking.
 - 2. Dimensions and locations of mortises and holes for hardware.
 - 3. Undercuts.
- C. Samples for Verification:
 - 1. Provide Samples for species of veneer and solid lumber required.

1.4 INFORMATIONAL SUBMITTALS

- A. Sample Warranty: For special warranty.
- B. Quality Standard Compliance Certificates: AWI Quality Certification Program certificates.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Comply with requirements of referenced standard and manufacturer's written instructions.
- B. Package doors individually in plastic bags or cardboard cartons.

1.6 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Warping (bow, cup, or twist) more than 1/4 inch in a 42-by-84-inch section.
 - b. Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch span.
 - 2. Warranty Period for Solid-Core Interior Doors: Life of installation.

PART 2 - PRODUCTS

2.1 TYPE AND MANUFACTURERS

- A. Construction: Solid core, flush, wood veneer faced door of 5-ply hot press or 7-ply cold press construction, 1-3/4" thick. Factory finish.
- B. Acceptable Manufacturers: One of the following:
 - 1. Algoma Hardwoods, Inc.
 - 2. Eggers Hardwood Products Corp.
 - 3. Oshkosh Architectural Door.
 - 4. V.T. Industries, Inc.
 - 5. Graham Manufacturing Corp.

2.2 MATERIALS AND CONSTRUCTION

- A. Face Panels:
 - 1. Construction for Factory Finish: 2-ply face panels. Manufacturer's standard 3-ply face veneers will be accepted in lieu of 2-ply.
 - 2. Face Veneer Species, Grade and Cut: Plain sliced Red Oak, slip matched, Type I, Grade A, per AWI "Quality Standards" Section 01300 and C.S. 171-64. (No rotary or half round sliced veneers accepted.).
- B. Crossbands (5/7-Ply Construction): Hardwood or natural/engineered fiberboard, minimum 1/16" thick, tapeless spliced, no voids.
- C. Cores: Thickness: Matched to face veneer and crossband thicknesses so as to produce a door 1-3/4" thick.
- D. Stiles & Rails: Solid, sound wood or structural composite lumber (SCL), 1-3/8" minimum total width for stiles, 1-1/8" for rails, securely bonded to the core and then abrasively planed before application of face veneers to ensure minimal telegraphing of core parts through veneers.
 - 1. Finish the vertical edges of door with hardwood of same species and grade as door veneers.
 - 2. Stile Edge Split Resistance: Minimum of 750 lbs when tested per ASTM D 143-52/78 Modified.
 - 3. Screw Withdrawal Resistance: Minimum of 740 lbs when tested per ASTM D 1037-78.

2.3 FABRICATION

- A. Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.
- B. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3. Comply with final hardware schedules, door frame Shop Drawings, BHMA-156.115-W, and hardware templates.
 - 1. Coordinate with hardware mortises in metal frames to verify dimensions and alignment before factory machining.

2.4 FINISH

- A. Faces and edges as well as door frames and trim shall be factory finished with one of the following systems meeting or exceeding the performance standards of TR/OP 6, catalyzed polyurethane:
 - 1. TR/OP 6 catalyzed polyurethane.
 - 2. AWI 1500 Finish System #3 (conversion alkyd-urea varnish) or System #5 (catalyzed polyurethane), Premium Grade.
 - 3. AWI Division 1500 Finish System S-4.
 - 4. NWWDA G-17 Finish System.
- B. Factory finished - Stain color and sheen shall be as selected by Architect.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine doors and installed door frames, with Installer present, before hanging doors.
 - 1. Verify that installed frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
 - 2. Reject doors with defects.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Hardware: For installation, see Section 087100 "Door Hardware."
- B. Installation Instructions: Install doors to comply with manufacturer's written instructions and referenced quality standard, and as indicated.
- C. Job-Fitted Doors: Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer. Machine doors for hardware. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.
- D. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

3.3 ADJUSTING

- A. Operation: Rehang or replace doors that do not swing or operate freely.
- B. Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if Work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION 081416

DIVISION 08 – OPENINGS
SECTION 083323
OVERHEAD SECTIONAL DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Overhead sectional (lift clearance) door with electrical operator.
- B. Related Requirements:
 - 1. Section 042000 "Unit Masonry" for new masonry wall opening.
 - 2. Section 055000 "Metal Fabrications" for miscellaneous steel supports.
 - 3. Refer to electrical documents for associated electrical work.

1.3 SUBMITTALS

- A. Shop Drawings: Show details of materials and fabrication. Show relationships to adjacent materials. For electrically operated door, show control location.
- B. Certificates: Submit manufacturer's certification that Installer is approved by manufacturer
- C. Maintenance Data: Submit manufacturer's materials describing proper maintenance; include parts list.

1.4 QUALITY ASSURANCE

- A. Comply with AIS "American Iron & Steel Requirement of the Consolidated Appropriations Act of 2014" (Public Law 113-76).

1.5 PRODUCT STORAGE AND HANDLING

- A. Delivery: Uncrate doors, frames and related accessories. Remove all padding and packing in contact with aluminum immediately upon arrival in order to prevent staining.
- B. Storage: In strict compliance with manufacturer's instructions.

PART 2 - PRODUCTS

2.1 MANUFACTURERS, GENERAL

- A. Source Limitations: Obtain operators and controls from overhead coiling door manufacturer

2.2 SECTIONAL OVERHEAD DOOR

- A. Basis of Design: Upward acting, lift clearance, steel faced, insulated sectional panel doors, "TC224" manufactured by Raynor Manufacturing Co.
- B. Comparable products of other manufacturers must be submitted to the Architect a minimum of seven (7) days prior to Bid Opening. Only those which are accepted as approved products will be identified in an addendum issued by the Architect.
- C. Panels: 2" nominal thickness formed from exterior and interior facing sheets of stucco embossed exterior 24 ga./interior 26-ga. commercial quality hot dip galvanized steel conforming to ASTM A 525/A 526, A60/G60 or better zinc coating; bonded to a foamed plastic core in such a way as to create a thermal break between front and back faces. Panels may have horizontal ribs for additional strength
 - 1. Insulation: Manufacturer's standard, fire resistant, rigid foam expanded polystyrene insulation, filling panel and providing an overall U-value of minimum 10.25 or better as tested per ASTM C 236.
 - 2. End Stiles: Minimum 18-gauge.
 - 3. Custom Bottom Bar.
 - 4. Color: Custom powder coated color as approved by Architect.
- D. Hardware:
 - 1. Hinges and Brackets: Made from galvanized steel.
 - 2. Track Rollers: Shall run on hardened steel ball bearings.
 - 3. Lift Handles and Step Downs: Combination lift/ step on units; one at each side of door.
- E. Tracks: 3", 12-gauge, galvanized steel, wedge or cam type opening and closing action, suspended on track support system configured to guide door up the wall. Tracks shall be mounted on a continuous angle and shall be fully adjustable for sealing door to jamb.
- F. Operation: Remote controlled motor, as follows:
 - 1. ControlHoist 2.0 Standard by Raynor.
 - 2. Counterbalance: Oil tempered helical wire torsion spring, capable of 10,000 cycles, on a continuous header cross shaft sized to encase the helical spring and to carry curtain load with maximum deflection not exceeding 0.03" per ft. of opening width.
 - 3. Mounting Brackets: 3/16" thick steel plates forming end closures and having ball or roller bearings at rotating support points.
 - 4. Safety Cables: Galvanized aircraft type lifting cables with min. safety factor of 5 to 1.
 - 5. Operator: Electric RBT jackshaft type, powered by belt reduced 1/2 HP, 115 volt, 1 phase, industrial duty motor with reversing contactor starter, adjustable clutch and magnetic solenoid brake, in NEMA 1 enclosure.

6. Emergency Disconnect: Include for all operators.
7. Controls: "Control Hoist 2.0" Push button station, and automatic limit switches that will break circuit at termination of travel. Door shall be arranged to stop at intermediate points by STOP button, from where it can be operated in either direction.
 - a. Interior push button stations shall be of an approved type, at locations shown on Drawings, having UP, DOWN, and STOP buttons.
 - b. Include electric or pneumatic safety edge along bottom edge of door to reverse door if obstruction is met during downward travel.
 - c. Push button switch, motor and all other electrical items shall be furnished prewired by door manufacturer. Furnish wiring diagram to Electrical Contractor.
8. Emergency Operation: Chain.

2.3 FABRICATION

- A. Fabricate door in strict accordance with reviewed Shop Drawings.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

- A. Inspection:
 1. Prior to installation of door, carefully inspect the installed work of all other trades and verify that such work is complete to the point where proper installation of door may commence.
 2. Verify that door may be installed in accordance with the original design and reviewed Drawings.

3.2 INSTALLATION

- A. General: Install door in strict accordance with all pertinent codes and regulations, the original design, the reviewed Shop Drawings, and the manufacturer's current recommendations, anchoring all components firmly into position.
 1. Electrician will connect motor and will extend conduit and wiring to switch and starter.

3.3 ADJUSTING AND LUBRICATING

- A. Adjust hardware and moving parts to function smoothly so that doors operate easily, free of warp, twist, or distortion.
 1. Adjustment: Operate motor operated door continuously for 15 minutes through full open and shut cycles to verify proper functioning, without overheating operator motors. Adjust as required

- B. Lubricate bearings and sliding parts as recommended by manufacturer.
- C. Adjust seals to provide tight fit around entire perimeter.

3.4 TOUCH-UP AND CLEAN-UP

- A. Touch-Up: Upon completion of the installation, touch up all scuffs and abrasions in the surface finishes.
- B. Clean-up all debris and legally remove from site.

END OF SECTION 083323

SECTION 084113

ALUMINUM FRAMED ENTRANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes:

1. Aluminum entrance and vestibule doors and frames.
2. Seals around frame perimeters.
3. Weatherstripping.
4. Installation of hardware furnished for aluminum entrances by hardware supplier as specified in Section 087100 - Finish Hardware.
5. Perimeter sealant installation in accordance with requirements of Section 079200 - Joint Sealants.

- B. Related Requirements:

1. Section 042000 "Unit Masonry" for installing aluminum door frames into masonry walls.
2. Section 079200 "Joint Sealants" for sealing at aluminum door frames
3. Section 087100 "Finish Hardware" for new aluminum doors and frames finish hardware.
4. Section 088000 "Glazing" for new glass.

1.3 QUALITY ASSURANCE

- A. Installer's Qualifications: Company specializing in installation of systems of the type specified for 5 years, and approved by system manufacturer.
- B. Fabrication Tolerances: Fabricate aluminum storefront in accordance with framing manufacturer's prescribed tolerances.
- C. Thermal Break Components: Manufactured to meet the following standards:
 1. AAMA QAG 1-98, "Quality Assurance Processing Guide for Poured and Debridged Polyurethane Thermal Barriers."
 2. AAMA TIR A8-90, "Structural Performance of Poured and Debridged Framing Systems."
 3. AAMA 505-98, "Dry Shrinkage and Composite Performance Thermal Cycling Test Procedure."

D. Coordination:

1. Installer of aluminum entrance doors and frames shall be responsible for installing each complete with glass and perimeter sealant.
2. Coordinate with Finish Hardware Supplier as required to assure proper fitting of hardware items furnished under Section 087100.
 - a. Hardware Installation: According to templates approved by hardware item manufacturers.
 - b. Hardware Templates: Report to Architect in writing should templates not be delivered by Hardware Supplier in sufficient time to meet construction schedules.
3. Glazing: Installer of aluminum entrance doors shall be responsible for installing them complete with glass.

1.4 SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, and finishes.

B. Shop Drawings: Show elevations and details, including gaskets, weatherstripping, methods of anchoring, type of alloy, finishes; size and thickness of individual parts, dissimilar metal protection.

1. Shop drawings for the systems shall bear the seal and signature of a Structural Engineer licensed in the State of Illinois and contain:
 - a. Anchor locations - If anchors other than thru-jamb type are used, contractor to provide required interior trim as required to conceal fasteners whether shown on the drawings or not.
 - b. Structural integrity.
 - c. Wind loading.
 - d. Structural loading.
 - e. All installations shall be based on the 2015 IBC.

C. Samples: Submit for Architect's review:

1. 2 samples 6" long of each color available for each type of glazing sealant and gasket exposed to view.
2. Full size samples of each framing system.

D. Certificates: Submit manufacturer's certification that Installer is approved by manufacturer.

1.5 PRODUCT STORAGE, AND HANDLING

A. Uncrate doors, frames and related accessories and store in strict compliance with the manufacturer's instructions. Remove all padding and packing in contact with aluminum immediately upon arrival in order to prevent staining.

1.6 WARRANTIES

- A. Manufacturer shall agree to repair or replace units whose components fail due to inferior materials or workmanship within 10 years of installation. Failures shall include but are not be limited to:
 - 1. Structural failures including excessive deflection, leakage or air infiltration.
 - 2. Failure of insulating glass, including interpane dusting or misting and internal dew point rising above -50°F.

- B. Warranty Period:
 - 1. Window Manufacturer: 10 years from date of Substantial Completion.
 - 2. Window Installer: 5 years from date of Substantial Completion.
 - 3. Finish: Manufacturer's standard warranty.

PART 2 - PRODUCTS

2.1 MANUFACTURER AND TYPE

- A. Acceptable Products:
 - 1. Exterior Entrance Doors and Frames:
 - a. Thermally Broke Aluminum Door Frame: TriFab "VG 451T" as manufactured by Kawneer as the Basis-of-Design or comparable products by Efc0, Tubelite, Manko or YKK AP or Owner Approved Equal.
 - 1) Frames shall have with a nominal profile of 2" x 4 1/2".
 - b. Non-Thermally Broke Aluminum Entrance Doors: Doors shall be heavy duty swing type, wide stile (2" deep) as manufactured by Kawneer as the Basis-of-Design or comparable products by Efc0, Tubelite, Manko or YKK AP.
 - c. Hardware and Lock Cylinders: As furnished under Section 087100 – Finish Hardware.

2.2 MATERIALS AND CONSTRUCTION

- A. Aluminum (Framing and Components):
 - 1. Material Standard: ASTM B 221; 6063-T6 alloy and temper.
 - 2. Wall Thickness: minimum wall thickness of 3/16.”
 - 3. Tolerances: Reference to tolerances for wall thickness and other cross-sectional dimensions of storefront members are nominal and in compliance with AA Aluminum Standards and Data.
 - 4. Thermal Breaks: Manufacturer’s standard type. Poured-in-place polyurethane type shall have maximum tensile strength of 4,300 psi.
- B. Accessories:
 - 1. Fasteners: Where exposed, shall be Stainless Steel.
 - 2. Gaskets: Glazing gaskets shall be extruded EPDM rubber.
 - 3. Perimeter Anchors: Aluminum. When steel anchors are used, provide insulation between steel material and aluminum material to prevent galvanic action.
 - 4. Dissimilar Metal Protection: Alkali resistant bituminous paint conforming to AN-P 31, plastic separators, insulating tapes or manufacturer’s standard, subject to Architect’s approval.
- C. Weatherstripping: Thermoplastic elastomer weatherstrip system on all sides of exterior doors and/or frames, meeting AAMA 702 requirements. Provide surface applied bottom weatherstrip with flexible blade gasket at bottoms of doors.
- D. Internal Joint Sealant: Polyisobutylene non-hardening thin-joint sealant “Presstite #579” or equal.
- E. Sealants: See Section 079200 - Joint Sealants.
- F. Glass: See Section 088000 - Glazing.
- G. Material Separation: Provide a coating or material between dissimilar materials as recommended by aluminum door manufacturer to protect against corrosion of aluminum materials.

2.3 FABRICATIONS

- A. Fabricate components per manufacturer's installation instructions and with minimum clearances and shim spacing around perimeter of assembly, yet enabling installation and dynamic movement of perimeter seal.
- B. Accurately fit and secure joints and corners. Make joints flush, hairline and weatherproof.
- C. Prepare components to receive anchor devices. Fabricate anchors.
- D. Arrange fasteners and attachments to conceal from view.

2.4 FINISH

- A. Finish Bronze Anodized Finish, AA-C22A44, Class 1 (min. 0.7 mils thickness and sealed), to match existing color
- B. Unexposed metal surfaces may remain uncoated.

2.5 FABRICATION

- A. General: Fabricate and assemble in as large sections in shop as consistent with shipping and field requirements.
- B. Joints: Shall be flush, hairline. Field splices and joints between sections shall produce strength to resist misalignment and deformations imposed by handling and live loads. Keep fasteners concealed.
- C. Doors: Corners: Dual moment construction consisting of mechanical fastening using extruded aluminum channel clips and bolt fasteners and SIGMA deep penetration plug welds and fillet welds.
- D. Reinforce doors and frames for hardware with backing plates of non-magnetic steel or hot-dip galvanized steel complying with ASTM A 36.
 - 1. Reinforce for butt hinges with 1/4" steel plates 10" long welded to aluminum with 6 welds, each 1/2" long.
 - 2. Reinforce for closers with 10-gauge plate, 12-gauge plate for other hardware.
 - 3. Reinforce for all other cutouts and mortises similarly.
- E. Provide positive means to drain to the outside any water entering the system.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.
- B. Drill and tap frames to receive nontemplated, mortised, and surface-mounted hardware.
- C. All surfaces that may contact steel, concrete or masonry construction shall be prepared with dissimilar protection materials hereinbefore specified. Aluminum surfaces to remain exposed shall be protected from bituminous paint application.

3.3 INSTALLATION

- A. Set frames in locations shown, level, plumb and in line. Seal joints between framing members and mullions. Where moldings are jointed, accurately cut and fit members to result in tightly closed joints.
- B. Do not use exposed fasteners except as approved by Architect.

- C. Internal Drainage: Cut, join and seal members to form positive paths of drainage within the framing in order to prevent any water that may enter the system from leaking through to interior of building.
- D. Frame Anchors: Unless indicated or approved otherwise, space anchors all around opening at not more than 24" o.c. Powder-actuated fasteners will not be allowed.
- E. Glazing Application:
 - 1. Center plane.
 - 2. Outside glazed.
- F. Glazing Beads: Make corners square, butted and tightly fit.
- G. Glazing Seals: Furnish seals to glass installer, ready for installation of glazing.
- H. Apply sealant to both sides of perimeter of frames, using materials and methods specified in Section 079200 - Joint Sealants, including submissions.
- I. Install Material Separation: Provide a coating or material between dissimilar materials as recommended by aluminum door system's manufacturer to protect against corrosion of aluminum materials.
- J. Finish Hardware: Install finish hardware as specified in Section 087100.

3.4 ADJUSTING, CLEANING AND PROTECTION

- A. Hardware Adjustment: Adjust and check each operating item, to ensure proper operation and function.
- B. Hardware Lubrication: Lubricate moving parts with lubricant recommended by manufacturer. Use graphite-type lubricant if none other recommended.
- C. Hardware Replacement: Replace units that cannot be adjusted and lubricated to operate freely and smoothly as intended.
- D. Cleaning: Clean aluminum surfaces promptly after installation of frames and doors, exercising care to clean corners and to avoid damage of the protective coating (if any). Remove excess glazing and sealant compounds, dirt and other substances. Final cleaning will be done by General Contractor just prior to time of acceptance.
- E. Touch-Up: Scratches and abrasions shall be touched-up with finish manufacturer's recommended coating, to satisfaction of Architect.
- F. Protection:
 - 1. General Contractor shall provide protective measures and other precautions as required through remainder of construction period, according to recommendations of Installer, to ensure that doors and frames will be without damage or deterioration (other than normal weathering) at time of acceptance.
 - 2. Plastic films applied for protection during shipment shall not be used for protection after installation of aluminum.

END OF SECTION 084113

SECTION 085113

ALUMINUM STOREFRONT WINDOWS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes:

- 1. Fixed exterior aluminum storefront windows.

- B. Related Requirements:

- 1. Section 042000 "Unit Masonry" for installing aluminum window frames into masonry walls.
- 2. Section 079200 "Joint Sealants" for perimeter sealing of aluminum windows to exterior walls.
- 3. Section 084113 "Aluminum Framed Entrances" for aluminum doors and frames.
- 4. Section 088000 "Glazing" for glass.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at location as directed by Architect

- 1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
- 2. Review, discuss, and coordinate the interrelationship of aluminum windows with other exterior wall components. Include provisions for anchorage, flashing, sealing perimeters, and protecting finishes.
- 3. Review and discuss the sequence of work required to construct a watertight and weathertight exterior building envelope.
- 4. Inspect and discuss the condition of substrate and other preparatory work performed by other trades.

1.4 ACTION SUBMITTALS

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

- 1. Include construction details, material descriptions, glazing and fabrication methods, dimensions of individual components and profiles, hardware, and finishes for aluminum windows.

- B. Shop Drawings: Include plans, elevations, sections, hardware, accessories, operational clearances, and details of installation, including anchor, flashing, and sealant installation.
 - 1. Shop drawings must be prepared wholly by the window manufacturer, or a qualified engineering services firm under the direction of the manufacturer.
 - 2. Shop drawings for the window system shall bear the seal and signature of a Structural Engineer licensed in the State of Illinois and contain:
 - a. Anchor locations - If anchors other than thru-jamb type are used, contractor to provide required interior trim as required to conceal fasteners whether shown on the drawings or not.
 - b. Structural integrity.
 - c. Wind loading.
 - d. Structural loading.
 - e. All window installations shall be based on the 2015 IBC.
- C. Samples: For each exposed product and for each finish specified, 2 by 4 inches (50 by 100 mm) in size.
- D. Samples for Initial Selection: For units with factory-applied color finishes.
 - 1. Include similar Samples of hardware and accessories involving color selection.
- E. Samples for Verification: For aluminum windows and components required, showing full range of color variations for finishes, and prepared on Samples of size indicated below:
 - 1. Exposed Finishes: 2 by 4 inches (50 by 100 mm).
 - 2. Exposed Hardware: Full-size units-.
- F. Product Schedule: For aluminum windows. Use same designations indicated on Drawings.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For manufacturer and Installer.
- B. Product Test Reports: For each type of aluminum window, for tests performed by a qualified testing agency.
- C. Field quality-control reports.
- D. Sample Warranties: For manufacturer's warranties.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A manufacturer capable of fabricating aluminum windows that meet or exceed performance requirements indicated and of documenting this performance by test reports, and calculations.
- B. Installer Qualifications: An installer acceptable to aluminum window manufacturer for installation of units required for this Project, who has a minimum of 5 years experience in similar window installation projects.

1.7 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace aluminum windows that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Failure to meet performance requirements.
 - b. Structural failures including excessive deflection, water leakage, condensation, and air infiltration.
 - c. Deterioration of materials and finishes beyond normal weathering.
 - 2. Warranty Period:
 - a. Window Manufacturer: 10 years from date of Substantial Completion.
 - b. Window Installer: 5 years from date of Substantial Completion.
 - c. Aluminum Finish Manufacturer: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Acceptable Manufacturers: Drawings and specifications are based upon:
 - 1. Basis-of-Design is Kawneer Window System or comparable products by Efco, Tubelite or Manko or Approved Equal during Bidding:
 - a. Exterior Fixed Window: 451 TVG, 2" x 4 1/2".
- B. Source Limitations: Obtain aluminum windows from single source from single manufacturer.

2.2 MATERIALS

- A. All aluminum members, frames, sash bars, glazing beads, muntins and mullions shall be extruded from 6063T alloy of suitable temper and have a minimum tensile strength of 28,000 psi.
 - 1. No main member shall have a wall thickness less than .070"
 - 2. Aluminum glazing beads shall be snap-in type with a minimum wall thickness of .050".
 - 3. Sills/subsills shall have a minimum wall thickness of .090".
- B. Aluminum Glazing Beads: Extruded snap-in type with glazing legs no less than 3/4".
- C. Thermal Barrier: Poured in place polyurethane with max. tensile strength of 4300 psi.
 - 1. Thermally Improved Construction: Fabricate frames, sashes, and muntins with an integral, concealed, low-conductance thermal barrier located between exterior materials and window members exposed on interior side in a manner that eliminates direct metal-to-metal contact.

- D. Weatherstripping: Two rows of jacketed foam or neoprene fin gaskets or polypropylene pile installed in dovetailed grooves extruded in sash members and secured to prevent movement, shrinkage or loss. Jacketed type shall conform to AAMA 701.2.
- E. Glazing Seals: As furnished by window manufacturer; color as selected by Architect from manufacturer's standard color options. Any of the following types may be used:
 - 1. Extruded EPDM dry gasket seals with impervious skins.
 - 2. Extruded vinyl dry gasket seals with impervious skins, meeting ASTM D 2287.
 - 3. Extruded neoprene dry gasket seals with impervious skins, meeting ASTM D 2000, type 2BC415 to 3BC415.
 - 4. Extruded silicone dry gasket seals with impervious skins.
 - 5. Expanded neoprene gaskets with impervious skins meeting ASTM C 509, Grade 4.
 - 6. Butyl tape and silicone wet seals as standard to window manufacturer.
- F. Anchors: Aluminum or steel. When anchors are steel they must be primed with shop coat of approved zinc chromate primer and insulated from the aluminum members or must be cadmium or zinc plated to meet ASTM A 165 or A 164 requirements.
- G. Fasteners:
 - 1. Frame Assembly Fasteners: Non-magnetic stainless steel.
 - 2. Miscellaneous Fasteners: Aluminum or non-magnetic stainless steel, with finish color to match frames where exposed to view.
 - 3. Frame Anchor Clip Fasteners: Expansion bolts, toggle bolts or lag screws, as required by building construction material, not less than 1/4" dia., cadmium or zinc plated steel in accordance with ASTM A 164 and A 165.
 - 4. No plastic expansion anchors allowed.
- H. Receptors: Head and Jamb receptors are NOT allowed.
- I. Dissimilar Metal Protection: Alkali resistant bituminous paint conforming to AN-P 31, plastic separators, insulating tapes or manufacturer's standard, subject to Architect's approval.

2.3 COMPONENTS

- A. Hardware:
 - 1. All steel components including attachment fasteners to be stainless steel except as otherwise noted.
 - 2. Extruded aluminum components 6063-T5 or T6.
 - 3. Thermo-plastic or thermo-set plastic caps, housings and other components to be injection-molded nylon, extruded PVC or other suitable compound.
- B. Sealants:
 - 1. All sealants shall comply with applicable provisions of AAMA 800 and/or Federal Specifications FS-TT-001 and 002 Series.
 - 2. Frame joinery sealants shall be suitable for application specified and as tested and approved by window manufacturer.

2.4 WINDOW PERFORMANCE REQUIREMENTS

A. Design Wind Loads:

1. The design wind pressure for the project shall be per the IBC 2015 code and should be determined by the Structural Engineer licensed in the State of Illinois obtained by the manufacturer.
2. All structural components, including meeting rails, mullions, anchors and added reinforcing shall be designed accordingly, by a Structural Engineer licensed in the State of Illinois, complying with deflection and stress requirements as listed herein.

B. Air Test: Air infiltration maximum 0.1 cfm per square foot at 6.24 psf pressure differential when tested in accord with ASTM E283.

C. Water Test: No uncontrolled water leakage at 12.00 psf static pressure differential, with Water application rate of 5 gallons/hr/sq ft when tested in accord with SASTM E331 and ASTM E547.

2.5 GLAZING

A. See Specification Section 088000 "Glazing".

2.6 FABRICATION

A. Fabricate aluminum windows in sizes indicated. Include a complete system for assembling components and anchoring windows.

B. Weather strip each operable sash to provide weathertight installation.

C. Weep Holes: Provide weep holes and internal passages to conduct infiltrating water to exterior.

2.7 ALUMINUM FINISHES

A. Finish: Finish Bronze Anodized Finish, AA-C22A44, Class 1 (min. 0.7 mils thickness and sealed), to match existing color.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Verify rough opening dimensions, levelness of sill plate, and operational clearances.

C. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure weathertight window installation.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Comply with manufacturer's written instructions for installing windows, hardware, accessories, and other components. For installation procedures and requirements not addressed in manufacturer's written instructions, comply with installation requirements in ASTM E 2112.
- B. Install windows level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction to produce weathertight construction.
- C. Install windows and components to drain condensation, water penetrating joints, and moisture migrating within windows to the exterior.
- D. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.
- E. Glazing Application:
 - 1. Center plane.
 - 2. Outside glazed.

3.3 ADJUSTING, CLEANING, AND PROTECTION

- A. Clean exposed surfaces immediately after installing windows. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.
 - 1. Keep protective films and coverings in place until final cleaning.
- B. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.
- C. Protect window surfaces from contact with contaminating substances resulting from construction operations. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written instructions.

END OF SECTION 085113

DIVISION 08 – OPENINGS
SECTION 087100
FINISH HARDWARE

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.

B. SUMMARY

1. Mechanical door hardware for interior and exterior swinging doors.

1.2 ACTION SUBMITTALS

A. **Product Data:** For each type of product indicated. Include construction and installation details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Other Action Submittals:

1. **Door Hardware Schedule:** Prepared by or under the supervision of Installer, detailing fabrication and assembly of door hardware, as well as installation procedures and diagrams. Coordinate final door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

a. **Submittal Sequence:** Submit door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate the fabrication of other work that is critical in Project construction schedule.

b. **Format:** Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule." Double space entries, and number and date each page.

c. **Content:** Include the following information:

- 1) Identification number, location, hand, size, and material of each door and frame.
- 2) Locations of each door hardware set, cross-referenced to Drawings on floor plans and to door and frame schedule.
- 3) Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.
- 4) Fastenings and other pertinent information.

- 5) Explanation of abbreviations, symbols, and codes contained in schedule.
 - 6) Mounting locations for door hardware.
 - 7) List of related door devices specified in other Sections for each door and frame.
2. Keying Schedule: Prepared by or under the supervision of Installer, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations that are coordinated with the Contract Documents. Coordinate all keying with the Owner. Existing keyway is a Schlage IC Everest 'D' system. Contact Ken Stafford at 815-319-4670 for keying requirements.

1.3 INFORMATIONAL SUBMITTALS

- A. Warranty: Special warranty specified in this Section.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Supplier of products and an employer of workers trained and approved by product manufacturers and an Architectural Hardware Consultant who is available during the course of the Work to consult with Contractor, Architect, and Owner about door hardware and keying.
1. Warehousing Facilities: In Project's vicinity.
 2. Scheduling Responsibility: Preparation of door hardware and keying schedules.
- B. Source Limitations: Obtain each type of door hardware from a single manufacturer.
- C. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.
- D. Accessibility Requirements: Comply with applicable provisions in the DOJ's 2010 ADA Standards for Accessible Design and ICC A117.1.
1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf (22.2 N).
 2. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.
 3. Closers: Adjust door and gate closer sweep periods so that, from an open position of 90 degrees, the time required to move the door to a position of 12 degrees from the latch is 5 seconds minimum.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.

- B. Tag each item or package separately with identification coordinated with the final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.
- C. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

1.6 COORDINATION

- A. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- B. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.
- C. Existing Openings: Where hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide proper door operation.

1.7 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures including excessive deflection, cracking, or breakage.
 - b. Faulty operation of doors and door hardware.
 - c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.
 - 2. Warranty Period: Two years from date of Substantial Completion, unless otherwise indicated.
 - a. Exit Devices: Three years from date of Substantial Completion.
 - b. Manual Closers: 10 years from date of Substantial Completion.
 - c. Bored Locksets: 3 years from date of Substantial Completion.
 - d. Hinges: Life of Building from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

- A. Provide door hardware for each door as scheduled in Part 3 "Door Hardware Schedule" Article to comply with requirements in this Section as follows:

1. Continuous Hinges: As specified.
2. Panic Hardware: Von Duprin 99 Series, No substitutions.
3. Locks/Cylinders: Schlage ND Series, No substitutions.
4. Closers: LCN 4011/4111, No substitutions.
5. All Other Hardware: As specified or Owner approved equal.

2.2 FABRICATION

- A. Manufacturer's Nameplate: Do not provide products that have manufacturer's name or trade name displayed in a visible location except as otherwise approved by Architect.
 1. Manufacturer's identification is permitted on rim of lock cylinders only.
- B. Base Metals: Produce door hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18.
- C. Fasteners: Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware, unless otherwise indicated.
 1. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.
 2. Spacers or Sex Bolts: For through bolting of hollow-metal doors and wood doors.
 3. Gasketing Fasteners: Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

2.3 FINISHES

- A. Provide finishes complying with BHMA A156.18 as indicated in door hardware schedule.
- 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.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.

3.3 INSTALLATION

- A. Mounting Heights: Mount door hardware units at heights to comply with the following unless otherwise indicated or required to comply with governing regulations.
 - 1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
- B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing. Do not install surface-mounted items until finishes have been completed on substrates involved.
 - 1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
 - 2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- C. Hinges: Install type quantities indicated in door hardware schedule.
- D. Thresholds: Set threshold in full bed of sealant.
- E. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
- F. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.
- G. Closers: Sex-bolt all closers on wood doors.

3.4 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
 - 1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

3.5 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items as necessary to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

3.6 DOOR HARDWARE SCHEDULE

Hardware Group No. 01

A3

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	ND70JD RHO	626	SCH
1	EA	FSIC CORE	23-030 EV D	626	SCH
1	EA	WALL STOP	WS406/407CCV	630	IVE

Hardware Group No. 02

A6 A21 A30B

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	224XY	628	IVE
1	EA	CLASSROOM LOCK	ND70JD RHO	626	SCH
1	EA	FSIC CORE	23-030 EV D	626	SCH
1	EA	SURFACE CLOSER	4111 EDA	689	LCN
1	EA	WALL STOP	WS406/407CCV	630	IVE

Hardware Group No. 03

A18

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	224XY	628	IVE
1	EA	CLASSROOM LOCK	ND70JD RHO	626	SCH
1	EA	FSIC CORE	23-030 EV D	626	SCH
1	EA	SURFACE CLOSER	4111 SCUSH	689	LCN
1	EA	GASKETING	188SBK PSA	BK	ZER

Hardware Group No. 04

A28B

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	224XY	628	IVE
1	EA	CLASSROOM LOCK	ND70JD RHO	626	SCH
1	EA	FSIC CORE	23-030 EV D	626	SCH
1	EA	SURFACE CLOSER	4111 EDA	689	LCN
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	EA	GASKETING	188SBK PSA	BK	ZER

Hardware Group No. 05

A29

A31

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	224XY	628	IVE
1	EA	CLASSROOM LOCK	ND70JD RHO	626	SCH
1	EA	FSIC CORE	23-030 EV D	626	SCH
1	EA	SURFACE CLOSER	4011	689	LCN
1	EA	WALL STOP	WS406/407CCV	630	IVE

Hardware Group No. 06

A9

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	224XY	628	IVE
1	EA	STOREROOM LOCK	ND80JD RHO	626	SCH
1	EA	FSIC CORE	23-030 EV D	626	SCH
1	EA	SURFACE CLOSER	4011	689	LCN
1	EA	WALL STOP	WS406/407CCV	630	IVE

Hardware Group No. 07

A11 A13 A19B A22B A25B

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	224XY	628	IVE
1	EA	CLASSROOM LOCK	ND70JD RHO	626	SCH
1	EA	FSIC CORE	23-030 EV D	626	SCH
1	EA	OH STOP	90S	630	GLY
1	EA	SURFACE CLOSER	4011	689	LCN

Hardware Group No. 08

A12 A17 A24 A27

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	224XY	628	IVE
1	EA	STOREROOM LOCK	ND80JD RHO	626	SCH
1	EA	FSIC CORE	23-030 EV D	626	SCH
1	EA	ELECTRIC STRIKE	6211 FSE CON 12/16/24/28 VAC/VDC	630	VON
1	EA	SURFACE CLOSER	4111 EDA	689	LCN
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	EA	CREDENTIAL READER	BY DIVISION 28		B/O

CREDENTIAL READER DEVICE IS TO RELEASE THE ELECTRIC STRIKE ALLOWING THE DOOR TO BE OPENED. IMMEDIATE EGRESS IS ALWAYS AVAILABLE. KEYED INGRESS IS ALSO AVAILABLE.

ITEMS TO BE PROVIDED BY THE DIVISION 28 SUPPLIER:
CREDENTIAL READER DEVICE.
REQUIRED POWER AND WIRING TO THE ELECTRIC STRIKE.

Hardware Group No. 09

A14

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	224XY	628	IVE
1	EA	CLASSROOM LOCK	ND70JD RHO	626	SCH
1	EA	FSIC CORE	23-030 EV D	626	SCH
1	EA	WALL STOP	WS406/407CCV	630	IVE

Hardware Group No. 10

A15 A19A A22A A25A A30A

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	027XY	628	IVE
1	EA	PANIC HARDWARE	LD-99-L-06 996L	626	VON
1	EA	RIM HOUSING	20-079	626	SCH
1	EA	FSIC CORE	23-030 EV D	626	SCH
1	EA	ELECTRIC STRIKE	6113 FSE CON BSS 12/24 VAC/VDC	630	VON
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4111 EDA	689	LCN
1	EA	MOUNTING PLATE	4110-18	689	LCN
1	EA	BLADE STOP SPACER	4110-61	689	LCN
1	EA	WEATHER STRIPPING	BY DOOR/FRAME MANUFACTURER		B/O
1	EA	DOOR SWEEP	39A	A	ZER
1	EA	THRESHOLD	566A-V3-223	A	ZER
1	EA	CREDENTIAL READER	BY DIVISION 28		B/O

CREDENTIAL READER DEVICE IS TO RELEASE THE ELECTRIC STRIKE ALLOWING THE DOOR TO BE OPENED. IMMEDIATE EGRESS IS ALWAYS AVAILABLE. KEYED INGRESS IS ALSO AVAILABLE.

ITEMS TO BE PROVIDED BY THE DIVISION 28 SUPPLIER:
CREDENTIAL READER DEVICE.
REQUIRED POWER AND WIRING TO THE ELECTRIC STRIKE.

Hardware Group No. 11

A20

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	224XY	628	IVE
1	EA	STOREROOM LOCK	ND80JD RHO	626	SCH
1	EA	FSIC CORE	23-030 EV D	626	SCH
1	EA	ELECTRIC STRIKE	6211 FSE CON 12/16/24/28 VAC/VDC	630	VON
1	EA	SURFACE CLOSER	4111 SCUSH	689	LCN
1	EA	KICK PLATE	8402 10" X 2" LDW B-CS	630	IVE
1	EA	GASKETING	188SBK PSA	BK	ZER
1	EA	CREDENTIAL READER	BY DIVISION 28		B/O

CREDENTIAL READER DEVICE IS TO RELEASE THE ELECTRIC STRIKE ALLOWING THE DOOR TO BE OPENED. IMMEDIATE EGRESS IS ALWAYS AVAILABLE. KEYED INGRESS IS ALSO AVAILABLE.

ITEMS TO BE PROVIDED BY THE DIVISION 28 SUPPLIER:
CREDENTIAL READER DEVICE.
REQUIRED POWER AND WIRING TO THE ELECTRIC STRIKE.

Hardware Group No. 12

A28A

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	027XY	628	IVE
1	EA	CLASSROOM LOCK	ND70JD RHO	626	SCH
1	EA	FSIC CORE	23-030 EV D	626	SCH
1	EA	ELECTRIC STRIKE	6211AL FSE CON 12/16/24/28 VAC/VDC	630	VON
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4111 EDA	689	LCN
1	EA	MOUNTING PLATE	4110-18	689	LCN
1	EA	BLADE STOP SPACER	4110-61	689	LCN
1	EA	WEATHER STRIPPING	BY DOOR/FRAME MANUFACTURER		B/O
1	EA	DOOR SWEEP	39A	A	ZER
1	EA	THRESHOLD	566A-V3-223	A	ZER
1	EA	CREDENTIAL READER	BY DIVISION 28		B/O

CREDENTIAL READER DEVICE IS TO RELEASE THE ELECTRIC STRIKE ALLOWING THE DOOR TO BE OPENED. IMMEDIATE EGRESS IS ALWAYS AVAILABLE. KEYED INGRESS IS ALSO AVAILABLE.

ITEMS TO BE PROVIDED BY THE DIVISION 28 SUPPLIER:
CREDENTIAL READER DEVICE.
REQUIRED POWER AND WIRING TO THE ELECTRIC STRIKE.

Hardware Group No. 13

A32A A32B

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	ELECTRIC STRIKE	6300 FSE 12/24 VAC/VDC	630	VON
1	EA	CREDENTIAL READER	BY DIVISION 28		B/O

CREDENTIAL READER DEVICE IS TO RELEASE THE ELECTRIC STRIKE ALLOWING THE DOOR TO BE OPENED. BALANCE OF EXISTING HARDWARE TO REMAIN.

ITEMS TO BE PROVIDED BY THE DIVISION 28 SUPPLIER:
CREDENTIAL READER DEVICE.
REQUIRED POWER AND WIRING TO THE ELECTRIC STRIKE.

Hardware Group No. 14

A27A1 A27A2

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
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NOTE: ALL HARDWARE BY DOOR MANUFACTURER.

Hardware Group No. 15

A28C

Provide each RU door(s) with the following:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
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NOTE: ALL HARDWARE BY OTHERS.

Hardware Group No. 16

A29A

Provide each PR door(s) with the following:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR	
2	EA	CONT. HINGE	224XY	628	IVE
2	EA	MANUAL FLUSH BOLT	FB458	626	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	STOREROOM LOCK	ND80JD RHO	626	SCH
1	EA	FSIC CORE	23-030 EV D	626	SCH
2	EA	SURFACE CLOSER	4111 SHCUSH	689	LCN

END OF SECTION 087100

SECTION 088000
GLAZING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes:
 - 1. Glazing of exterior aluminum storefront windows, doors and aluminum entrances.
 - 2. Glazing of interior door/sidelight frames.
 - 3. Glazing of interior hollow metal doors.
- B. Related Requirements:
 - 1. Section 081113 "Hollow Metal Doors Frames" for glazing of new hollow metal door and frames.
 - 2. Section 084113 "Aluminum Framed Entrances" for glazing of new aluminum entrances.
 - 3. Section 085113 "Aluminum Storefront Windows" for glazing of new aluminum windows.

1.3 QUALITY ASSURANCE

- A. Comply with all pertinent codes and regulations, including the Consumer Product Safety Commission Safety Standard for Architectural Glazing Materials (16 CFR 1201) and the State of Illinois Safety Glazing Materials Act.
- B. Comply with all pertinent recommendations in the Glazing Manual of the Flat Glass Marketing Association.
- C. All glass shall bear glass manufacturer's label stating variety and grade.

1.4 SUBMITTALS

- A. Product Data: Submit manufacturers' product data describing each type of glass and glazing item specified herein.
- B. Samples: Submit for Architect's review 2 samples, 6" square, of each type of glass required.
- C. Manufacturer's Instructions: Submit glazing gasket manufacturer's recommendations for each installation situation.

1.5 WARRANTIES

- A. Installer shall guarantee installed work to be waterproof for a period of 5 years.
- B. Insulating glass units shall be warranted for 10 years against failure, including interpane dusting or misting and internal dew point rising above -50°F. Warranty shall provide for replacement of glass and glazing, including labor.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver glazing materials to job site in sealed containers with manufacturer's original labels attached to each piece of glass. Provide UL labels for fire rated glass. Provide cushions at edges to prevent impact damage.
- B. Store glass on edge, under cover and protect from staining.
- C. Avoid deformation of units. Protect faces from scratches and abrasion.

PART 2 - PRODUCTS

2.1 ACCEPTABLE GLAZING PRODUCTS

- A. Acceptable Glass Manufacturers: See below.
- B. Acceptable Glass Fabricators: Oldcastle Glass Co.
- C. Insulating-Glass Units: ASTM E 2190, certified through IGCC as complying with requirements of IGCC.
- D. Glass Types:
 - 1. GL 1: 1" Insulated Tempered Tinted Glass - No substitutions:
 - a. Exterior Lite: ¼" Tint to match existing glazing Tempered.
 - b. ½" airspace with argon.
 - c. Interior Lite: ¼" Clear Tempered Vitro Solarban 60 on #3 surface.
 - 2. GL 2: 1/4" Clear Tempered Glass
 - 3. GL 3: 1" Insulated Metal Panel: 1" thick insulated sandwich panels consisting of an isocyanurate core laminated to 1/8" tempered hardboard substrates with smooth aluminum skins.
 - a. "R" Value of Core: At least 6.
 - b. Finish: On both sides of panels shall be smooth aluminum with a Kynar 500 finish in color as approved by Architect.
 - c. Lamination: With thermo-plastic, moisture and fungus resistant adhesive, subjected to direct heat before assembly closure in order to drive off excess solvents.
 - d. Acceptable Manufacturer: Mapes Industries, Citadel Architectural Products or Architect approved equal.
 - 4. GL-4: Fire rated Safety Clear Glass.

2.2 GLAZING MATERIALS:

- A. Approved Manufacturers: Use products of the following:
 - 1. Tremco Manufacturing Co.
 - 2. G.E.
 - 3. Dap, Inc.
 - 4. Pecora Corp.
 - 5. Protective Treatments, Inc. (PTI).
 - 6. Vetrotech (Saint-Gobain).
- B. Spacers: Neoprene, 40-50 durometer hardness, having proven compatibility with sealants used.
- C. Setting Blocks: Neoprene, 70-90 durometer hardness, having proven compatibility with sealants used, width of rabbet less 1/16" by lengths sufficient for weight of glass supported.
- D. Compressible Filler Rod: Closed-cell or waterproof-jacketed rod stock of synthetic rubber or plastic foam, proven to be compatible with sealants used, flexible and resilient, with 5-10 psi compression strength for 25% deflection.
- E. Cleaners, Primers and Sealers: Type recommended by sealant or gasket manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean the glazing channel, or other framing members to receive glass, immediately before glazing. Remove coatings that are not firmly bonded to the substrate. Remove lacquer from metal surfaces wherever elastomeric sealants are used. Verify that weep holes are free of obstructions.
- B. Apply primer or sealer to joint surfaces wherever recommended by sealant manufacturer.
- C. Cut glass with smooth straight edges to full sizes required by openings. Do not attempt to cut, seam, nip or abrade glass that is tempered, heat strengthened, or coated.

3.3 INSTALLATION

A. Glass:

1. Set glass on setting blocks at quarter points, and fix without springing or inducing bowing. Install with proper bite and clearances all around.
2. Glass having waviness shall be set with waves placed horizontally unless Architect directs otherwise. Lites viewed in series or as a group shall have uniform draw, bow and similar characteristics.
3. Tempered glass having tong marks shall be installed so that tong marks are within rabbets at top of opening.

3.4 CLEANING

- A. All glass shall be left whole, free from checks or other defects, and cleanly washed inside and out and the building left ready for occupancy when directed by the Architect.
- B. Any defective glass that may appear after cleaning shall be removed and replaced with perfect glass.

END OF SECTION 088000

DIVISION 09 – FINISHES
SECTION 092900
GYPSUM BOARD SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes:
 - 1. Provide and install gypsum board partition on metal studs with acoustical insulation.
 - 2. Provide gypsum board ceilings, soffits and to bottom chord of wood trusses.
- B. Related Requirements: Section includes surface preparation and the application of paint systems
 - 1. Section 033000 "Cast-In-Place Concrete" for concrete slab-on-grade.
 - 2. Section 061753 "Shop Fabricated Wood Trusses" for ceiling framing structure.
 - 3. Section 099113 "Painting" for finish painting of gypsum board surfaces.

1.3 ACTION SUBMITTALS

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

1.4 DELIVERY, STORAGE AND HANDLING

- A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.5 FIELD CONDITIONS

- A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written instructions, whichever are more stringent.
- B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.
- C. Do not install panels that are wet, moisture damaged, and mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 FRAMING MATERIALS

A. Metal Studs:

1. Standard Walls: Zinc coated steel channel studs, 20-gauge, 3-5/8" and size except as required otherwise, conforming to ANSI/ASTM C 645 or GA 201 or GA 216.
2. Fire rated Ceiling (1 hr.): Zinc coated steel channel studs, 25-gauge, 2-1/2", conforming to UL Des U415, system A or U469.

B. Runner Tracks:

1. 20-gauge metal, matching stud width. Use tracks with minimum 1-1/4" leg when indicated or directed.
2. Deflection Track: Provide for deck deflection by using "VertiTrack" manufactured by The Steel Network, Inc., tel: 888-474-4876 or approved equal, complete with manufacturer's patented fasteners having step bushings sized to the gauge of the studs.

C. Reinforcing Strips: Electro-galvanized 20-gauge sheet steel meeting ASTM A 525, 8" wide.

D. Angle Connectors: Galvanized 20-gauge sheet steel meeting ASTM A 525, formed into angle with 1-1/2" leg

E. Ceiling and Soffit Framing: 25-gauge galvanized steel having 1-1/2" wide, knurl faced flange. Use hat section and Z-section channels of sizes required.

2.2 GYPSUM BOARD, GENERAL

A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.3 INTERIOR GYPSUM BOARD

A. Gypsum Board for Typical Walls, Ceilings & Soffits,: ASTM C 1396/C 1396M, Fire rated, tapered edge, conforming to ANSI/ASTM C 36 & C 1396, 5/8" thick:

1. "Tough Rock Fireguard X Abuse Resistant Gypsum Board" by Georgia Pacific.
2. "Gold Bond Hi-Abuse XP Gypsum Board" by National Gypsum Company.
3. "Fiberock Abuse Resistant Interior Panels" by USG.
4. Or approved equal

B. Moisture & Mold Gypsum Resistant Board For Interior Walls, Ceilings & Soffits: Mold and moisture resistant, fire resistant, Type X, tapered edge, 5/8" thickness except as otherwise noted on drawings:

1. "Tough Rock Mold Guard" by Georgia Pacific.
2. "Gold Bond Brand XP Fire-Shield" by National Gypsum Company.
3. "Brand UltraLight FIRECODE X" by USG.
4. Or approved equal,

C. Liner Panels: 1" sheetrock gypsum liner panels., for 1 hr. fire rated ceiling system

2.4 FINISH MATERIALS

- A. Edge and Corner Reinforcement: Manufacturer's standard trim beads made of hot-dip galvanized steel with either knurled and perforated or expanded flanges, and beaded for concealment of flanges in joint compound. Vinyl trim NOT allowed.
1. Corner Beads: Paper-faced heavy gauge metal or plastic with extra wide flanges, equal to USG "B1XW EL" or No-Coat "Ultracorner".
 2. Edge Beads: Paper-faced heavy gauge metal or plastic "L" type with extra wide flanges, equal to USG "B4 (1")" or No-Coat "L Trim.
 3. Control Joint Beads: Flexible expansion channel, such as USG #093 or Gold Bond ".093 Zinc Control Joint."

2.5 JOINT TREATMENT MATERIALS

- A. General: Comply with ASTM C 475/C 475M.
- B. Reinforcing Tape: Perforated joint reinforcing tape, paper or fiberglass, asbestos free.
- C. Joint Compound: Ready mixed all-purpose drywall joint compound, type and mix as required for conditions of humidity and temperature. Use topping type compound for finishing coats.

2.6 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.
- B. Fasteners: Screws meeting ASTM **C 954** and the following:
1. For direct attachment to masonry: Tapcon Screws or Perma-Grip Nails as recommended by Gypsum Board mfg.
 2. For metal to metal framing: 1/2" long, Type S, shallow pan-head screws.
 3. For gypsum board: 1-1/4" Type S bugle-head screws.
 4. For tracks to concrete: Powder-actuated stud pins sized to penetrate concrete at least 1/2".
 5. For moving (deflection) joints: "VertiClip Step Bushing Fasteners" sized to match gauge of studs.
- C. Acoustical Sealant: One of the following:
1. USG "Acoustical Sealant"
 2. W.W. Henry Co. "313 Sound Control Sealant"
 3. Tremco "Acoustical Sealant"
 4. Pecora "Acoustical Sealant BA-98"
 5. Norton "Norseal V730 and V740FR Acoustical Foam Tape"
- D. Acoustical Insulation: Sound attenuation blanket of thickness to produce an STC rating of not less than 48 in the constructions indicated, as manufactured by Johns Manville (Schuller), USG or Zonolite Grace.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates including welded hollow-metal frames and support framing, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.
- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 FRAMING INSTALLATION

A. Partitions:

- 1. Base Tracks: Install continuous tracks, straight and true, accurately aligned to the layout at base and at tops of studs. Set floor tracks in a continuous bead of acoustical sealant. Secure tracks at each end and a maximum of 24" o.c. in between. Use powder actuated pin anchors for anchoring to concrete.
- 2. Studs: Set studs plumb, not more than 16" o.c. and not more than 2" from abutting walls. In each line of studs, face flanges all in the same direction.
- 3. Partition Heights: All studs shall extend to heights as noted on Drawings.
- 4. Stud Securement: Studs shall engage both floor and top runners. Secure studs to tracks with 2 screws at top and 2 screws at bottom, one each at both inside and outside flanges.
- 5. Top Track: Provide multiple runner track installation, at top of wall to accommodate deck deflection.
- 6. Stud Flanges: Do not cut to accommodate pipes, conduit, etc. without Architect's specific approval for each case.

B. Ceiling & Soffits:

- 1. Non Fire Rated: Frame with furring channels attached to bottom chord of roof trusses with screws or ring shank nails.
- 2. 1 Hour Fire Rated Ceiling: 2 ½" C-H studs, 25 gauge at 24" o.c. in accordance with UL Des. U415, system A or U469.

C. Control Joints:

- 1. Placement: As indicated, consistent with lines of building spaces. Provide additional control joints in locations approved by General Contractor so that no expanse of wall exceeds 30 feet.
- 2. Framing: Frame each control joint in walls with 2 nearly abutting studs set back to back. Seal each side of space between studs with bead of sealant.
- 3. Control joints shall be installed both sides of door frames up to top of wall.

3.3 APPLYING AND FINISHING PANELS, GENERAL

- A. Comply with ASTM C 840.
- B. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.
- C. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
- D. Form control and expansion joints with space between edges of adjoining gypsum panels.
- E. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
 - 1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
 - 2. Fit gypsum panels around ducts, pipes, and conduits.
 - 3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch wide joints to install sealant.
- F. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

3.4 APPLYING INTERIOR GYPSUM BOARD

- A. Install interior gypsum board in the following locations:
 - 1. Partitions: Type "X": Vertical surfaces unless otherwise indicated.
 - 2. Ceilings: Type "X"; Single layer attached to bottom chord of wood trusses.
- B. Single-Layer Application:
 - 1. On partitions/walls, apply gypsum panels vertically (parallel to framing) unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
 - a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
 - 2. Fastening Methods: Apply gypsum panels to supports with steel drill screws.
- C. Fire Rated Ceiling: 1 hr. fire rated construction consisting of 1 layer of 5/8" fire code core gypsum panels with joints finished, 2 1/2" C-H studs, 25 gauge at 24" o.c. and 1 layer of sheetrock liner panels in accordance with UL Des. U415, system A or U469.

3.5 INSTALLING TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

- B. Acoustical Insulation: Install acoustical blanket insulation in all interior partition stud spaces. Insulation shall extend to ceiling level unless noted otherwise and fill all voids. Place insulation behind and around electrical and mechanical items within partitions and tight to items passing through partitions.
- C. Acoustical Sealant: Apply sealant continuously to joint between gypsum board and bottom track at partitions filled with acoustical insulation. Also, seal any untaped edges or corner joints butting into other wall materials at insulated partitions.
- D. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect for visual effect.
- E. Interior Trim: Install cornerbeads at outside corners.

3.6 FINISHING GYPSUM BOARD

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints or beveled edges, and damaged surface areas.
- C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:
 1. Level 1: At panel surfaces that will not be visible.
 2. Level 4: At panel surfaces that will be covered by finish painting.

3.7 PROTECTION

- A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.
- B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- C. Remove and replace panels that are wet, moisture damaged, and mold damaged.
 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 092900

SECTION 093013
CERAMIC TILE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes:
 - 1. Porcelain tile on new CMU wall,
 - 2. Porcelain cove base on new slab on grade, and existing concrete.
 - 3. Moisture Vapor Treatment
 - 4. Seal all grout lines after installation.
- B. Related Requirements:
 - 1. Section 033000 "Cast-In-Place Concrete" for new slab-on-grade.
 - 2. Section 042000 "Unit Masonry" for CMU walls.
- C. General Scope of Work: Provide all floor preparation, labor, materials and accessories as required to provide the ceramic tile as indicated on the Drawings, as described in the Specifications, and as needed for a complete and proper installation including, but not limited to, the following:

1.3 ACTION SUBMITTALS

- A. Product Data: Submit manufacturer's product descriptions of all materials as well as instructions for setting and grouting materials.
- B. Samples:
 - 1. Tile Colors: Submit for each type and class of tile required 1 full size tile of color selected by Architect for his approval.
 - 2. Grout Colors: Submit manufacturer's sample to match grout color selected by Architect for his approval.
- C. Certificates: Provide manufacturer's TCA Master Grade Certificate for porcelain tile before starting work.
- D. Check lead times for tile, which may be 6-8 weeks. Order accordingly.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Supply extra 5% of total quantity of floor and wall tile used. Place in clean marked cartons and deliver to Owner for Owner's maintenance use.

1.5 QUALITY ASSURANCE

- A. Installation Standards: Per recommendations contained in "Handbook for Ceramic Tile Installation," latest edition, by Tile Council of America, Inc. (TCA).
- B. Installation Practices: Maintain as recommended by mortar and grout materials' manufacturer.
- C. Tile Grades: Provide tile equal to or exceeding Standard Grade requirements of ANSI A137.1.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Packaging: Deliver materials and store on site in original containers with seals unbroken and labels intact until time of use.
- B. Shade and Lot Number: Tile for each area of installation shall come from the same shade and lot number.

PART 2 - PRODUCTS

2.1 CERAMIC TILE MATERIALS.

- A. Cove Base and Cove Base Outcorner Product & Manufacturer: Modern Oasis by Marazzi
 - a. Distributor: American Olean Midwest
Contact: Lori Grala lgrala@aolmidwest.com c: 773-401-7300
 - b. Size: 6" x 12" Cove Base
 - c. Size: 6" x 1" Outcorner
 - d. Install: Coordinate with wall tile in the standard 90-degree installation position.
 - e. Grout: 3/16"
Color : To be selected from full range of color options. Cove base and Wall tile shall be the same color.
- B. Wall Tile Product & Manufacturer: Modern Oasis by Marazzi
 - a. Distributor: American Olean Midwest
Contact: Lori Grala lgrala@aolmidwest.com c: 773-401-7300
 - b. Size: 12" x 24" – Cut height required in field to cover top portion of exposed CMU block, below bottom of Cabinet. Match layout of existing tile in field.
 - c. Install: Match grout line of wall tile to Cove base tiles 12" length.
 - d. Grout: 3/16"

- e. Color: To be selected from full range of color options.

2.2 SETTING AND GROUTING MATERIALS

- A. Setting Material for Wall Tile and Cove Base Tile: Dry-set mortar conforming to ANSI A 118.1 or latex portland cement mortar conforming to ANSI A 118.4.
- B. Setting Materials:
 - 1. Ceramic Tile Grout: Polymer Modified Tile Grout conforming to ANSI A 118.7. Color to be selected by Architect from full range of options. Must apply grout sealer.
 - 2. Grout Sealer: Use one of the following:
 - a. American Olean "Grout Sealer,"
 - b. TEC Inc. "Grout Guard Plus."
 - 3. Floor Patching/Leveling Compound: Floor Patching/Leveling Compound;
 - a. "Speccrete Concrete Magic" by Specco Industries, Inc.
 - b. "Thorocrete" by Harris Specialty Chemicals, Inc.
 - c. "VersaPatch - Latex-Modified Floor Patch" by TEC Inc.
 - d. "Feather Patch" by Bonsal
 - e. "*Levelplan*" by Mapei.
- C. Water: Clean and drinkable.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Preparation:
 - 1. Clean all surfaces to receive porcelain tile of any material which would adversely affect the installation of the new ceramic tile system.
- B. Installer shall examine the areas and conditions under which tile is to be installed and notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work, including documentation of testing results. Starting of work shall be construed as acceptance of the suitability of the existing surfaces to receive work.
- C. Verify that building air temperature and relative humidity are within manufacturers' recommended limits and that concrete floor temperatures are within 20°F of surrounding air temperatures.
- D. Flooring Contractor shall provide Moisture Vapor Barrier as follows:
 - 1. Manufacturer: Custom.

2. Provide RedGard Uncoupling Mat TDS-357 on all areas to receive new ceramic tile. Manufacturer: Custom. Provide all materials required for complete system. Follow manufacturers specifications for prep and installation methods.

3.2 INSTALLATION

- A. Ceramic Tile Walls: Install over concrete masonry units (CMU) in accordance with ANSI Specifications.
- B. Ceramic Tile Cove Base on CMU and at contact with New Concrete Slabs on Grade: Thin-set in conformance to ANSI specifications. TCA detail F113, Dry-Set Mortar or Latex-Portland Cement Mortar.
- C. See plans for locations.
- D. Uniformity of Color: Set tile in each area using only tile from the same shade and lot number. Mix tiles from several boxes, and rotate the tiles to disguise variations and ensure a non-repeat appearance.
- E. Lay out all tile work to avoid cuts less than one-half tile in size.
- F. Alignment of Floor and Base Joints: Align to match existing. Align base joints with floor joints.
- G. Grout shall finish even with bottom of cushion edges on tile.
- H. Grout and seal at profile edge where Cove base toe meets concrete.

3.3 CLEANING

- A. General: Upon completion of placement and grouting, clean all new porcelain tile floor so they are free of foreign matter. Use neutral cleaner.
 1. Clean as recommended by tile and grout manufacturers' printed instructions, but no sooner than 14 days after installation. Protect metal surfaces. Flush surface with clean water before and after cleaning. Do not use acid solutions in rooms or areas where stainless steel occurs.
 2. Results Required: Leave the finished installation clean and free of cracked, chipped, broken, unbonded, or otherwise defective tile work.

3.4 PROTECTION

- A. Floor Grout: Shall be sealed after grout is applied.
- B. Protective Coating: When recommended by the tile manufacturer, apply protective coat of neutral protective cleaner to completed tile walls & base.
- C. Protective Covering:

1. Protect installed tile floors with kraft paper or other heavy covering during the construction period to prevent damage and wear.
 2. Before final inspection, remove protective coverings and rinse neutral cleaner from all tile surfaces.
- D. Foot and Wheel Traffic: Prohibit all traffic from using tiled floors for at least 3 days, preferably 7 days.

END OF SECTION 093013

SECTION 095123

ACOUSTICAL CEILINGS & WALL 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:
 - 1. Acoustical tiles for ceilings and wall panels.
 - 2. Acoustical ceiling suspension systems.
- B. Related Requirements:
 - 1. Section 004323 "Alternates" for Alternate Bid Work designated for this section.
 - 2. Section 042000 "Unit Masonry" for attachment of panels to CMU walls.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product, submit product data from manufacturer's brochures describing each of the products to be used.
- B. Samples:
 - 1. Submit samples of acoustical materials and suspension system members for review before ordering any materials.
 - 2. For each exposed product and for each color and texture specified, 6-inches- in size.
- C. Samples for Verification: For each component indicated and for each exposed finish required, prepared on Samples of size indicated below.
 - 1. Acoustical Tile: Set of full-size Samples of each type, color, pattern, and texture.
 - 2. Exposed Moldings and Trim: Set of 6-inch long Samples of each type and color.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Maintenance Stock: Furnish not less than 1 unopened bundle of each type of acoustical ceiling units for future maintenance. Distribute quantities in approximate proportion to the different types of units installed. Deliver to location on site designated by Owner.

1.5 QUALITY ASSURANCE

- A. Qualifications of Installers: Use only personnel who are thoroughly trained and experienced in the erection of the selected systems.

- B. Installation Standards: Comply with recommendations of the current CISCA “Ceiling Systems Handbook” except as specified otherwise hereinafter, and maintain a copy of the handbook at the site for Architect’s inspection while work of this Section is being accomplished.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver acoustical tiles, suspension-system components, and accessories to Project site in original, unopened packages and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.
- B. Before installing acoustical tiles, permit them to reach room temperature and a stabilized moisture content.
- C. Handle acoustical tiles carefully to avoid chipping edges or damaging units in any way.

1.7 FIELD CONDITIONS

- A. Environmental Limitations: Do not install acoustical tile ceilings until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

1.8 WARRANTIES

- A. Ceiling Panels: Where so specified herein below, products shall be warranted to be free from defects in materials and workmanship for a period of 10 years from date of purchase when subjected to the conditions of temperature and humidity specified.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Flame-Spread Index: Comply with ASTM E 1264 for Class A materials.
 - 2. Smoke-Developed Index: 450 or less.

2.2 ACOUSTICAL TILES, GENERAL

- A. Source Limitations:
 - 1. Acoustical Ceiling Tile: Obtain each type from single source from single manufacturer.
 - 2. Suspension System: Obtain each type from single source from single manufacturer.

- B. Acoustical Tile Standard: Provide manufacturer's standard tiles of configuration indicated that comply with ASTM E 1264 classifications as designated by types, patterns, acoustical ratings, and light reflectances unless otherwise indicated.
 - 1. Mounting Method for Measuring NRC: Type E-400; plenum mounting in which face of test specimen is 15-3/4 inches (400 mm) away from test surface according to ASTM E 795.
- C. Acoustical Tile Colors and Patterns: Match appearance characteristics indicated for each product type.

2.3 ACOUSTICAL TILES

- A. Acoustical Ceiling Panels Types:
 - 1. Type ACT-1: Angled tegular, fissured 24" x 24" x 3/4", lay-in panels; Accepted Products, USG "22121 ClimaPlus High NRC CAS", Armstrong #1732 or approved equal.
 - 2. Type ACT-2: Square edged, 23-3/4" x 23-3/4" x 1", lay-in panels; Accepted Products, "Sound Silencer (PEPP) white color by Acoustical Surfaces, Inc. – No substitutions.
 - 3. Type ACT-3: Square edged, 24" x 24" x 1/2", lay-in panels; Accepted Products, USG "Sheetrock Brand Clean Room", Armstrong #607 or approved equal.
- B. Acoustical Wall Panels: Square edged, 24" x 48" x 1", lay-in panels; Accepted Products, "Sound Silencer (PEPP) white color by Acoustical Surfaces, Inc. – No substitutions.

2.4 METAL SUSPENSION SYSTEMS

- A. Exposed Grid Ceiling Suspension Systems: Rigid metal, complying with ASTM C 635, intermediate duty system, consisting of interlocking cross tees and main tee runners (not less than .020" thick) made from cold rolled, zinc-bonded or electro-galvanized steel and creating flush joints at intersections.
 - 1. Components shall support items penetrating the ceilings, including light fixtures and HVAC outlets/inlets.
 - 2. Tee sections shall be double web type with a 1" exposed flange cap finished in baked white enamel.
 - 3. Hold-Down Clips (for use where specified): Manufacturer's standard electro-galvanized steel hold-down clips.
 - 4. Use USG "Donn DX" suspension systems for 24" x 24" grids or approved equal.
- B. Wall Molding: Angle type, hemmed metal molding with finish to match grid system.
- C. Hanger Wire: Pre-stretched, galvanized, soft-annealed mild steel wire conforming to ASTM A 641, 12-gauge.
- D. Carrying Channels (for bridging between structural members overhead): Hot or cold rolled steel 1-1/2" channels painted with black asphaltic rust inhibitive paint and weighing not less than 475 lbs. per 1000 lineal feet.
- E. Tie Wire for Attachment of Channels to Structure: Galvanized steel wire conforming to ASTM A 641, 16-gauge.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, including structural framing and substrates to which acoustical tile ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine acoustical tiles before installation. Reject acoustical tiles that are wet, moisture damaged, or mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical tiles to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width tiles at borders, and comply with layout shown on reflected ceiling plans.

3.3 INSTALLATION OF SUSPENDED ACOUSTICAL TILE CEILINGS

- A. General: Install acoustical panel ceilings to comply with ASTM C 636, according to manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."
- B. Suspend ceiling hangers from building's structural members and as follows:
 - 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
 - 2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension-system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
 - 3. Secure wire hangers to ceiling suspension members and to supports above with a minimum of three tight turns. Connect hangers directly either to structures or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
 - 4. Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices that are secure and appropriate for both the structure to which hangers are attached and the type of hanger involved. Install hangers in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
 - 5. Do not support ceilings directly from permanent metal forms or floor deck. Fasten hangers to cast-in-place hanger inserts, postinstalled mechanical or adhesive anchors, or power-actuated fasteners that extend through forms into concrete.
 - 6. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.

7. Do not attach hangers to steel deck tabs.
 8. Do not attach hangers to steel roof deck. Attach hangers to structural members.
 9. Space hangers not more than 48 inches o.c. along each member supported directly from hangers unless otherwise indicated; provide hangers not more than 8 inches from ends of each member.
 10. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.
- C. Secure bracing wires to ceiling suspension members and to supports with a minimum of four tight turns. Suspend bracing from building's structural members as required for hangers without attaching to permanent metal forms, steel deck, or steel deck tabs. Fasten bracing wires into concrete with cast-in-place or postinstalled anchors.
 - D. Install edge moldings and trim of type indicated at perimeter of acoustical tile ceiling area and where necessary to conceal edges of acoustical tiles.
 1. Do not use exposed fasteners, including pop rivets, on moldings and trim.
 - E. Install suspension-system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
 - F. Install acoustical tiles in coordination with suspension system and exposed moldings and trim. Place splines or suspension-system flanges into kerfed edges so tile-to-tile joints are closed by double lap of material.
 1. Fit adjoining tile to form flush, tight joints. Scribe and cut tile for accurate fit at borders and around penetrations through tile.
 2. Hold tile field in compression by inserting leaf-type, spring-steel spacers between tile and moldings, spaced 12 inches o.c.

3.4 INSTALLATION OF ACOUSTICAL PANELS TO CMU WALLS

- A. Install walls panels with ASI Acoustical adhesive, screws and Z-clips as per manufacturer's written instructions

3.5 CLEANING

- A. Clean exposed surfaces of acoustical tile ceilings, including trim and edge moldings. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage. Remove and replace tiles and other ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 095123

DIVISION 09 – FINISHES
SECTION 096519
RESILIENT FLOORING & BASE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes:

1. Preparation of concrete floors to receive Luxury Vinyl Tile (LVT), accessories, and wall surface to receive new rubber base.
2. Moisture testing of concrete floors, documentation of tests.
3. Moisture Mitigation is required for all new flooring.
4. Skim coat area to receive new LVT flooring.
5. Installation of new LVT
6. Installation of new Rubber Base.
7. Installation of Resilient floor transitions and trim accessories.

- B. Related Requirements:

1. Section 099100 "Gypsum Board Systems" for gypsum board walls.

1.3 ACTION SUBMITTALS

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

- B. Submit 3 sets of samples of each type, color and finish of resilient flooring, base and accessory required.

1. Provide manufacturer's standard boxed selection kit for flooring and 6" long samples of accessories.
2. Include full range of colors and pattern variations.
3. Upon request, provide 12" square samples of the flooring colors selected from the sample kit.

- C. Submit a letter from the resilient flooring manufacturer that the adhesive proposed to be used is compatible with the resilient flooring.

1.4 QUALITY ASSURANCE

- A. Manufacturers: Wherever possible, provide resilient flooring, adhesives and accessories produced by a single manufacturer.

- B. Flammability: Provide only materials, including adhesives, which will produce an installation having:
 - 1. Critical Radiant Flux of not less than 0.45 watts per cm² when tested per ASTM E 648.
 - 2. Smoke Density no greater than 450 when tested per ASTM E 662.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Furnish to the Owner in unopened boxes for future maintenance not less than 5% of each kind and color of floor tile installed.
 - 2. Furnish not less than 10 linear feet of each type, color, pattern, and size of rubber base installed.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store resilient base and installation materials in dry spaces protected from the weather.
- B. Install resilient base after other finishing operations, including painting, have been completed.

1.7 WARRANTY

- A. Provide a 2 year installation warranty.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Luxury Vinyl Tile (LVT)
 - 1. Manufacturer: Mannington
 - 2. Contact: Ryan Lindquist 630.272.7788 Ryan.Lindquist@mannington.com
 - 3. Collection: Amtico, Active Lines, 40ml thickness.
 - 4. LVT-1 Field tile 6" x 36" plank -95% total tile.
Style: Shift
Color: Pop ALS401

LVT-2 Accent tile 6" x 36" plank – 5% total tile
Style: Shift
Color: Pop Blue ALS403 (accent color)
 - 5. Installation Method: Brick, 50% offset.
 - 6. Install LVT-2 randomly placed within field 5% of total tile..Accent tile may run into walls in some locations.
 - 7. Length of planks shall run north to south in all locations.

B. Wall Base:

1. Manufacturer: Tarkett Cove Wall Base
 - a. Rubber material complying with ASTM F 1861, 6" base. Use 946 Contact adhesive. Refer to drawings for locations. 1/8" .080" thick, Style B coved profile, furnished in rolls. 4" Base at Cabinets. See plans for locations of each height.
 - b. Color: Burnt Umber 63
 - c. Provide Rubber Base and edge Transitions as required.

C. Edge Transitions:

1. Manufacturer: Tarkett Slimline
2. Provide even heights between floor finishes, for a smooth level transition between flooring heights/types. Skim such with Portland based cement product may be used to achieve level heights between flooring types.
3. Provide Tarkett Slimline transitions best suited for transitions between two flooring types as required on site. Provide sample of proposed types with floor sample submittal.
4. Color: 63 Burnt Umber

D. Adhesives:

1. Use Manufacturers recommended adhesives for all flooring types, base, transitions, and accessories. Follow manufacturers product data sheets and installation methods.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
 1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of rubber base.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog, installation instructions.
- D. Verify that wall surfaces to receive rubber base are free of bond breakers. Report to Contractor in writing any surfaces unsuitable to develop a permanent bond.
- E. Verify that building air temperature and relative humidity are within manufacturers' recommended limits and that concrete floor temperatures are within 20°F of surrounding air temperatures.
- F. Provide required floor Moisture Vapor Emission Rate (MVER) testing, pH testing and Relative Humidity testing prior to flooring installations. MVER Testing (ASTM F-1869-

10), RH Testing (ASTM F-2170 -10), pH Testing (ASTM F-710-10). A minimum of one test per 1,000 square feet of flooring space is required. Check manufacturer's full requirements and warranties prior to installation. Cost for testing is paid for by the flooring contractor.

1. Moisture meter readings and plastic mat test results will not be accepted as conclusive.
 - a. Perform tests in areas where drying is most restricted but not closer than 5ft to a perimeter.
 - b. Report adverse conditions including documentation of test results to the general contractor in writing.

G. Moisture mitigation is required for all new/existing concrete floors receiving flooring under this specification section. The Flooring Contractor shall provide:

Acceptable Manufacturer and Products:

1. Bone Dry Pro Surface Sealer System, for use on chemically abated slabs.
2. Bone Dry Pro Sealer System, for use on new concrete slabs, or existing slabs not abated.

Bone Dry Contact: James Gourley james@bonedryproducts.com

www.bonedryproducts.com (262) 694- 9748 ext 803

Provide all physical materials for complete Bone Dry Sealer system. Follow manufacturer's complete specification sections and product data sheets. Follow manufacturers full recommended preparation and installation methods. Provide documentation of any type of adhesive solvent/chemicals used, to determine manufacturers recommended prep methods.

- a. Clean floor of all foreign substances – drywall, paint, dust, debris.
 - b. Scarify/Etch concrete.
 - c. Fully protect all adjacent surfaces. Flooring contractor responsible to remove product from of any adjacent surfaces.
 - d. Apply Bone Dry.
 - e. Wait 24 hours, prior to flooring installation.
3. Follow Manufactures installation methods
 4. Register project with Bone Dry Manufacturer. Provide Manufacturers certificate of 20 year warrantee.
 5. Provide written documentation from Bone Dry that their system is approved for use with each flooring type and their adhesive.

H. Start of flooring installation work shall be construed as acceptance of the suitability of the surfaces to receive work and acceptance of full responsibility for completed work. Remove and replace at no charge to Owner all work under this Section which may require removal in order to correct defects caused by insufficient examination and preparation of the substrates.

3.2 PREPARATION

A. Should excessive alkalinity be discovered, treat the affected areas with a water solution containing 10% muriatic or acetic acid and allow solution to dry. Verify and comply with flooring manufacturers PH level requirements.

- B. Skim coat areas to receive new LVT flooring using Schonox SL Patch Portland Cement Based compound, at 1/8", or a Schonox Leveler, following manufactures recommended installation, product data sheets, and specifications
- C. Fill saw cut joints, construction joints, expansion joints, cracks and depressions with flexible vinyl filler or portland cement product as required to prevent show-through.
- D. Clean and prepare to a satisfactory condition all surfaces scheduled to receive resilient flooring.
- E. Check the match of LVT tiles to ensure that there is no visible variation between dye lot runs.
- F. Prepare walls and cabinet bases to receive new wall base as required. Remove bond breakers down to a solid, durable substrate. Fill voids with approved filler.
- G. Vacuum the floor just before application of flooring, until clean and free of dust.

3.3 RESILIENT FLOORING INSTALLATION

- A. Comply with manufacturer's written instructions for installing Luxury Vinyl Tile.
- B. Install flooring after building finishes, including painting, have been completed and permanent heating system is operating.
- C. Place flooring with adhesive cement in strict compliance with manufacturer's recommendations, including open time. Tightly cement resilient flooring to floor, leaving an installation without open cracks, voids, raised or puckered joints, telegraphing of substrate imperfections or adhesive spreader marks, or other surface imperfections.
- D. Butt the flooring tightly to vertical surfaces and edgings. Scribe as necessary around obstructions to produce neat joints, laid tight, even, and straight.
- E. Extend flooring into toe spaces, door reveals, and similar spaces.
- F. Lay tile from center marks established with principal walls, discounting minor offsets, so that tile at opposite edges of the room are of equal width. Adjust as necessary to avoid use of tiles less than 6" wide at room perimeters. Lay tile square to room axis, unless otherwise shown.
- G. Match tiles for color and pattern by using tile from cartons in same sequence as manufactured and packaged. Lay tile with grain in basket-weave pattern.
- H. Install tile manufacturer's recommended **PORTLAND CEMENT BASED** floor patch filler material, by Schonox, to raise level of tile flush with other adjacent floor materials.
- I. Install edging strips at all unprotected edges of flooring. Place resilient edge strips tightly butted to flooring and secure with adhesive.

3.4 RUBBER BASE INSTALLATION

- A. Comply with manufacturer's written instructions for installing rubber base.

- B. Apply rubber base to walls, in rooms and areas where base is required.
- C. Install rubber base in lengths as long as practical without gaps at seams and with tops of adjacent pieces aligned.
- D. Tightly adhere rubber base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
- E. Do not stretch rubber base during installation.
- F. On masonry surfaces or other similar irregular substrates, fill voids along top edge of rubber base with manufacturer's recommended adhesive filler material.
- G. Preformed Corners: Install preformed corners before installing straight pieces.

3.5 ADJUSTMENTS

- A. Tiles that have not “seated” in level plane with surrounding tile shall be removed and cleaned and re-set with new adhesive.
 - 1. Misaligned joints in base shall be reset or replaced with new, properly fitting pieces as required.
 - 2. Any resilient base that shrinks on the wall within 1 year of installation shall be replaced at no charge to the Owner.
- B. Tile showing broken corners or fracture lines entirely across their surfaces shall be warmed, removed and new tile of same color, etc., substituted. Repair tile showing minor breaks and fractures.

3.6 CLEANING

- A. Cleaning: Remove temporary coverings and protection of adjacent work areas.
 - 1. Repair or replace damaged installed products.
 - 2. Clean installed products in accordance with manufacturer’s instructions prior to Owner’s acceptance.

3.7 PROTECTION

- A. Protect vinyl composition tiles and rubber base from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

END OF SECTION 096519

SECTION 099113
PAINTING

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 finish painting of:
 - 1. New and existing hollow metal frames, steel lintels.
 - 2. New and existing CMU block.
 - 3. New and existing gypsum board walls.
 - 4. New and existing gypsum soffits/ceilings.
- B. Related Requirements: Section includes surface preparation and the application of paint systems
 - 1. Section 04200 "Unit Masonry" for CMU walls to be finish painted.
 - 2. Section 081113 "Hollow Metal Frames and Doors".
 - 3. Section 092900 "Gypsum Board Systems" for gypsum board partitions to be finish painted in field.

1.3 SUBMITTALS

- A. Product Data: Submit for Architect's review on all products to be used. List each material and cross-reference it to the specified paint and finish system and application. Identify by manufacturer's catalog number and general classification.
- B. Color Samples: When so requested, submit samples of each finish and topcoat color for Architect's review. Also, submit samples on portions of work at the site as directed by Architect, not less than 4ft x 4ft size.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Maintenance Supply: Deliver to Owner in unused containers 1 gallon of each type and color of paint used on the Project. Mark each container with color and room names/numbers where paint was used, without obscuring manufacturer's label. Deliver these containers to place on site designated by Owner.

1.5 QUALITY ASSURANCE

- A. Comply with State of Illinois Regulations (effective date July 1, 2009) regarding VOC (Volatile Organic Compounds).

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).
 - 1. Maintain containers in clean condition, free of foreign materials and residue.
 - 2. Remove rags and waste from storage areas daily.

1.7 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).
- B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Approved Manufacturers: Sherwin Williams as listed per category, or equal by Pittsburgh Paints PPG or Benjamin Moore.
- B. Approved Products: Manufacturer's products listed hereinafter in the Painting Schedule represent types and grades required. Comparable products of other manufacturers listed in preceding paragraph will also be acceptable.
- C. Grades: Materials not displaying manufacturer's identification as a best-grade product will not be acceptable.
- D. Thinners: Paint manufacturer's preferred solvent.

Colors: As selected by Architect from manufacturer's full range. One (1) field color and up to two (2) accent colors may be selected. Typically one (1) accent wall per room. Larger areas may use two (2) accent colors.

Preliminary colors:

Field Paint Color: SW7066 Grey Matters

Accent Paint Color: SW9142 Moscow Midnight

Hollow Metal Doors/Frames: SW7068 Grizzle Gray

- E. See Drawings for paint locations.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Conditions: Applicator must examine areas and conditions under which painting work is to be done and shall notify Contractor in writing of conditions detrimental to proper and timely completion of work.
- B. Moisture Contents: Do not apply coatings to surfaces where electronic moisture meter indicates values above 12%, except that for wood, moisture content may be not exceed 15%.
- C. Proceed with coating application only after unsatisfactory conditions have been corrected.
 - 1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
 - 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer.
- E. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

3.3 REPAINTING EXISTING PAINTED SURFACES

- A. Surface Preparation:
 - 1. Do not paint existing surfaces until any items attached to existing surfaces and not scheduled for painting (e.g. door hardware) have been removed. (The trade

removing the attachments shall replace them to their original positions after painting is complete.).

2. Wash surfaces to be repainted.
3. Remove all loose, blistered, cracked or otherwise defective paint and varnish. Sand surfaces smooth, free of depressions. Cut out and fill cracks or other defects to match adjoining surfaces.

3.4 APPLICATION

- A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."
 1. Use applicators and techniques suited for paint and substrate indicated.
 2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
 3. Paint entire exposed surface of door frames.
 4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
 5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- B. Tint undercoats same color as topcoat, but tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.5 FIELD QUALITY CONTROL

- A. Architect's Inspection: All work where a coat of material has been applied must be inspected and approved by Architect before application of succeeding specified coat; otherwise no credit for the coat applied will be given and the work in question shall be recoated.
 1. Contractor shall touch up and restore painted surfaces damaged by testing.
 2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.6 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.7 PAINTING SCHEDULE

- A. New and Existing Interior Hollow Metal Frames, **Doors**, Steel Lintels.
 - 1 coat - S-W Pro-Industrial ProCryl Universal Acrylic Primer, B66-310, or equal by Ben Moore or PPG
 - 2 coats - SW Pro Industrial Water Based Alkyd Urethane Enamel, Semi Gloss B53-1250 (4.0-5.0 mils wet, 1.4-1.7 mils dry per coat)

Omit Primer on Existing substrates. Sand, clean, prep, as stated herein.

- B. New and Existing Concrete Units (CMU) Walls.
 - Block filler - S-W PrepRite Blockfiller, B25W25 Series or equal by Ben Moore or PPG
 - 1 coat - S-W Pro Industrial Precatalyzed Waterbased Epoxy, Eg Shell. K45- series, or equal by Ben Moore or PPG
 - 1 coat - S-W Pro Industrial Precatalyzed Waterbased Epoxy, Eg Shell. K45- series (4 mils wet, 1.5 mils dry per coat), or equal by Ben Moore or PPG

Note: Block filler applied by airless spray and back rolled to fill all voids, at max. s.f./gal. rate recommended by manufacturer for 16 mil thickness.

Omit Blockfiller coating on existing CMU.

- C. New and Existing Interior Gypsum Board Walls.
 - 1 coat S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 Or equal by Ben Moore or PPG
 - 2 coats S-W Pro Industrial Waterbased Catalyzed Epoxy Eg shell. K45 Series. Or equal by Ben Moore or PPG

Omit Primer on existing Gyp. Clean, prep, as stated herein.

- D. New and Existing Gypsum Soffits/Ceilings
 - 1 coats - S-W ProMar 200 Zero Interior Latex Primer B28W2600; 1.5 mils DFT or equal by Benjamin Moore pr PPG
 - 2 coats - S-W ProMar 200 Zero Interior Latex Low Sheen Eg-Shel B24-2600, 1.6 mils DFT or equal by Benjamin Moore or PPG.

Omit Primer on existing Gyp. Clean, prep, as stated herein.

- E. Please notify architect 2-3 weeks prior to beginning paint, for paint plan to be provided.
- F. Existing Interior Disturbed Surfaces & Walls During Construction: Touch up existing as required to match existing.

END OF SECTION 099113

SECTION 104413
FIRE EXTINGUISHER SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Fire extinguisher cabinets including fire extinguishers.
- B. Related Requirements:
 - 1. Section 042000 "Unit Masonry" for wall surface.
 - 2. Section 099000 "Painting" for finish painting of F.E. cabinet.

1.3 SUBMITTALS

- A. Manufacturer's Data: Submit 2 copies of manufacturer's specifications and installation instructions for each type of unit specified. Indicate rough opening sizes, anchorages and accessory items.
- B. Submit samples of lettering for cabinet front. Indicate text, letter style, size, color and location.

1.4 QUALITY ASSURANCE

- A. Standards: Comply with the State of Illinois Accessibility Code and Americans with Disabilities Architectural Guidelines (ADAG).
- B. Certifications: Fire extinguishers shall be delivered with certification denoting that they have been inspected for serviceability by a certified fire equipment inspector within the previous 30 days.

PART 2 - PRODUCTS

2.1 FIRE EXTINGUISHER CABINETS

A. Acceptable Models & Manufacturers:

1. Architectural Series Model No. 2409-R4 (Non-Rated) by Larsen's Manufacturing.
2. Clear Vu Series Model No. 1516 (Non-Rated) by J. L. Industries.
3. Alpine Series by Nystrom

B. Type: Semi-recessed complying with ADA requirements.

C. Cabinet Construction:

1. Cabinet Box: Steel with baked enamel finish inside and outside. Inside dimensions approximately 24"H x 9-1/2"W x 6"D (inside box dimensions).
2. Wall Rough Opening: 25" H x 10 1/2"W x 3"D.
3. Hinges: Recessed or continuous.
4. Door: Steel panel with full-height duo type tempered glass cutout, full-size baked enamel finish, white color.
5. Door Handle: Applied type, as selected by Architect from manufacturer's options, including factory finish.
6. Door Frame: Rolled edge design, of steel, factory baked enamel painted white.
7. Identification: Cabinet shall bear the words "FIRE EXTINGUISHER" written vertically, with upright letters stacked on top of each other, on metal part of door panel in manufacturer's standard typeface selected by Architect. Words shall be in red letters.

2.2 FIRE EXTINGUISHERS

- A. Type: 10 lbs capacity, multi-purpose type for A/B/C Class fires, U.L. listed, fully pressurized, with sight gauge, factory charged with manufacturer's standard surface mount bracket for each surface mounted type fire extinguisher.
- B. Placard: Include rigid, permanent sign for mounting next to fire extinguisher stating that extinguisher shall not be used until fire suppression system has been activated.
- C. Serviceability Inspection: Within 30 days prior to delivery to site, each fire extinguisher shall have been inspected for serviceability by a certified fire equipment inspector and shall bear the inspector's current tag or equivalent mark upon delivery.
- D. Quantities: Furnish 1 fire extinguisher for each fire extinguisher cabinet.

PART 3 - EXECUTION

A. INSTALLATION

- B. General: Install surface mounted cabinet units in accordance with details on Drawings and recommendation of manufacturer.
- C. Mounting Heights: Locate bottom of cabinet as shown on Drawings or as directed by Architect except as otherwise required by ADA Standards

END OF SECTION 104413

SECTION 123553
METAL CASEWORK

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 metal casework consisting of:
 - 1. Metal casework including but not limited to:
 - a. Base cabinets with doors, shelf and drawers.
 - b. Locks on all drawers and doors:
- B. Related Requirements:
 - 1. Section 033000 "Cast-In-Place Concrete" for Concrete slab-on-grade.
 - 2. Section 042000 "Unit Masonry" for abutting wall structure.
 - 3. Section 061000 "Carpentry Work" for plastic laminate and solid surface countertops.

1.3 REFERENCES

- A. ADA (ATBCB ADAAG) Americans with Disabilities Act Accessibility Guidelines Americans with Disabilities Act (ADA).
- B. ISO 9001:2008 – Quality Management International Standards Organization (ISO).

1.4 SUBMITTALS

- A. Submit under provisions of Section 013300.
- B. Shop drawings: Provide large-scale plans and elevations of casework, as well as cross sections, rough-in and anchor placements, tolerances and clearances.
 - 1. Show ends, details and locations of anchorages and fitting to floors, walls, and base.
 - 2. Indicate relationship of units to doors, surrounding walls and other building components
- C. Product Data.
 - 1. Submit manufacturer's catalog for reference. Include cabinet dimensions, configurations and component thicknesses.
- D. Samples:

1. Submit a sample cabinet made in accordance with this specification. Samples shall be delivered, at no cost to the architect or owner, to a destination set forth by the architect.
2. Samples shall be full size with the approximately dimensions of 24" w x 36" h x 22" d with one drawer and one door.
3. Samples may be held by the Owner or Architect to insure that all equipment delivered conforms in every respect to the sample.

1.5 QUALITY ASSURANCE

- A. Design Data/Test Reports: Manufacturer shall submit test data and design criteria which are in compliance with the project specifications.
- B. Certificates: All certifications required in the specifications shall be submitted with the original submittal package under separate cover. Certificates must be provided with the signature of a qualified individual of the supplier.
- C. Manufacturers' Instructions: Provide manufacturer's instructions for installation and maintenance of all products provided and installed within this section.
- D. Manufacturers: All items, including accessories, shall be manufactured or furnished by the same laboratory casework company:
- E. Installer: Certified by the manufacturer. Certification must be provided by Installation Company.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver or install metal casework until the following conditions are met:
 1. Ceiling, and overhead work is completed.
 2. Painting and floor finishes work are completed.
- B. Store completed metal casework protected from the weather.
- C. Protect finished surfaces from soiling and damage during handling and installation. Keep covered with polyethylene film or other protective cover.
- D. The supplier of the metal casework is responsible for removing any waste or refuse resulting from the installation work pertaining to casework; thereby leaving the project site clean and free of debris. Trash container(s) to be provided by the general contractor.

1.7 WARRANTY

- A. Furnish a written warranty that Work performed under this Section shall remain free from defects as to materials and workmanship for a period of one (2) years from date of substantial completion. Defects in materials and workmanship that may develop within this time are to be replaced without cost or expense to the Owner.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Products: Basis of Design: AMS Air Maser Systems Corp. or equal by Kewanee, Teclab or Mott.
- B. Substitutions: Comparable products of other manufacturers as approved by Architect during the bidding phase.

2.2 CASEWORK, GENERAL

- A. Casework Product Standard: Comply with SEFA 8 M, "Laboratory Grade Metal Casework."

2.3 BASE CABINETS

- A. Standing Counter Height 35" High x 22" Deep of width designated by the design drawings:
 - 1. Removable backs.
 - 2. Flush front construction.
 - 3. Double pan sound deadened drawers and drawer heads.
 - 4. Adjustable doors with full access opening.
 - 5. 13 ga, stainless steel, 5 knuckle institutional type hinge. Send sample for approval.
 - 6. Aluminum bar pulls. Sample must be sent for approval
 - 7. Full depth adjustable shelf, adjustable on 1" centers (one per unit).
 - 8. Removable bottom panned up.
 - 9. Drawer units with extension slides.
 - 10. Base Cabinet Component Gauges (Stainless Steel):

Aprons:	18 Ga.	Legs – 2" sq. tube:	18 ga.
Back Panels:	20 ga.	Shelves:	18 ga.
Bottom Panels:	18 ga.	Side Panels:	18 ga.
Drawer/Dr Outer Panel:	20 ga.	Table Frames:	18 ga.
Dr. Inner Panel:	20 ga.	Drawer Bodies:	20 ga.:
Shelf Support Brackets:	14 ga.		

2.4 CONSTRUCTION

- A. Cabinets:
 - 1. Cabinets shall be constructed of prime 18 gauge steel for the sides, backs, and toe space. 1" X 18 gauge steel tubing shall be used for the top front and back rails. Each front joint is to be welded and ground flush to provide a smooth surface. A 4' high X 3' deep toe space shall be standard. Four corners are to be fitted with a stamped and welded 14 gauge leveling gusset plate, and a plated leveling screw. Leveling screws are provided with a slot for easy adjustment, and non marking nylon glides. Removable back panels shall be furnished on all cabinets. Cabinet bottom will be panned up to contain spills and removable for easy cleaning and maintenance.

- B. Doors – Base Cabinet Doors:
 - 1. Doors shall be double pan construction, with insulating material fastened to the inside for sound deadening, and strength, to prevent panning and bending. Hinges are five knuckle gauge stainless steel, fastened to both the door and cabinet frame with zinc plated steel screws. Door catches plated, friction roller type. Door closes onto nylon bumpers for noise dampening, and over nylon spacers for alignment.
- C. Drawers:
 - 1. Drawer bodies shall be one piece 20 gauge construction, fully covered on all four sides horizontally and formed out of one sheet of steel.
- D. Drawer Suspension.
 - 1. Drawers shall operate on full extension, ball bearing, zinc plated, drawer suspension rated to withstand 10,000 cycles at 100 lbs.
- E. Shelves:
 - 1. Shelves shall be constructed of 18 gauge steel, with channels formed on both the front and back edges. K & V shelf clips are made from 14 gauge steel, and are to be adjustable vertically in 1" increments. Sliding shelves shall use the same ball bearing slides as drawer units.
- F. Fabricated Accessories:
 - 1. All accessories required for specific installations shall be fabricated and finished to the same material and quality standards as the base units they will be made to compliment.

2.5 FINISH

- A. All surfaces shall be (Stainless Steel)
- B. General: Prepare, treat, and finish welded assemblies after assembling
Prepare, treat, and finish components that are to be assembled with mechanical fasteners before assembling. Prepare, treat, and finish concealed surfaces same as exposed surfaces.
- C. Preparation: After assembly, clean surfaces of mill scale, rust, oil, and other contaminants. After cleaning, apply a conversion coating suited to the organic coating to be applied over it.

PART 3 – EXECUTION

3.1 COORDINATION

- A. Metal Casework Subcontractor shall coordinate with General Contractor Subcontractors, to ensure inter-related items provided by the various subcontractors are properly integrated in the finish product.

- B. Each subcontractor shall be required to furnish shop drawings, technical data sheets and instructions and to review each other's documents. Shop drawings shall indicate locations and sizes of all openings required for installation of integrated items.

3.2 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.

3.3 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.

3.4 INSTALLATION OF CABINETS

- A. Comply with installation requirements of casework manufacturer. Install level, plumb, and true; shim as required, using concealed shims. Where casework abuts other finished work, apply filler strips and scribe for accurate fit, with fasteners concealed where practical. Do not exceed the following tolerances:
 - 1. Variation of Tops of Base Cabinets from Level: 1/16 inch in 10 feet.
 - 2. Variation of Faces of Cabinets from a True Plane: 1/8 inch in 10 feet.
 - 3. Variation of Adjacent Surfaces from a True Plane (Lippage): 1/32 inch.
 - 4. Variation in Alignment of Adjacent Door and Drawer Edges: 1/16 inch.
- B. Utility-Space Framing: Secure to floor with two fasteners at each frame. Fasten to partition framing, wood blocking, or metal reinforcements in partitions and to base cabinets.
- C. Base Cabinets: Fasten cabinets to utility-space framing, partition framing, wood blocking, or reinforcements in partitions, with fasteners spaced not more than 16 inches o.c. Bolt adjacent cabinets together with joints flush, tight, and uniform.
 - 1. Where base cabinets are installed away from walls, fasten to floor at toe space at not more than 24 inches o.c. and at sides of cabinets with not less than two fasteners per side.
- E. Install hardware uniformly and precisely. Set hinges snug and flat in mortises.
- F. Adjust casework and hardware so doors and drawers align and operate smoothly without warp or bind and contact points meet accurately. Lubricate operating hardware as recommended by manufacturer.

3.5 INSTALLATION OF COUNTERTOPS

- A. Countertops shall be install by Section 061000 "Carpentry Work: Contractor.

3.7 INSTALLATION OF CASEWORK ACCESSORIES

- A. Install accessories according to Shop Drawings, installation requirements in SEFA 2.3, and manufacturer's written instructions.
- B. Securely fasten adjustable shelving supports, stainless-steel shelves, to partition framing, wood blocking, or reinforcements in partitions.
- C. Install shelf standards plumb and at heights to align shelf brackets for level shelves. Install shelving level and straight, closely fitted to other work where indicated

3.9 FINISHING, CLEANING AND PROTECTION

- A. Repair or remove and replace defective work as directed upon completion of installation.
- B. Clean shop-finishes, touch-up as required and remove and refinish damaged or soiled areas.
- C. Provide necessary protective measures to prevent damage of casework and equipment from exposure to other construction activity. Installer shall advise Contractor of procedures and precautions required to protect metal casework, including temperature/humidity conditions that must be maintained during the remainder of the construction period.
- D. Prior to placement of any other protection, casework shall be covered with 4-mil polyethylene film, for protection against soiling and deterioration during remainder of construction period.

END OF SECTION 123553

DIVISION 31 – EARTHWORK

SECTION 312000
EARTH MOVING

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 earth moving work consisting of:
 - 1. Excavation for footings and foundations.
 - 2. Rough grading for new concrete slabs-on-grade and stoops on grade.
 - 3. Removal of unsatisfactory material below rough grade and subgrade levels as required.
 - 4. Provision of granular materials from offsite for structural fill as required.
 - 5. Classifying and stockpiling usable excavated material, on site, for re-use.
 - 6. Preparation of subgrades to receive fills.
 - 7. Filling, backfilling and compaction of fills.
 - 8. Finish grading of disturbed site areas.
 - 9. Removal of excess excavated materials.
- B. Related Requirements:
 - 1. Section 033000 "Cast-In-Place Concrete" for cast-in-place concrete work.

1.3 COORDINATION

- A. Coordinate earth moving work for building with civil earthwork.

1.4 SUBMITTALS

- A. Process all submittals per requirements in Section 013300 – Submittal Procedures.
- B. Submit to the Soil Testing Service 50 pound representative samples of each proposed fill material at least 2 days prior to the start of any filling operation.
- C. The Soil Testing Service shall submit 2 copies of all test reports to Owner's Representative.

1.5 QUALITY ASSURANCE

A. Soil Testing and Inspection Service:

1. The Owner shall engage the services of a soils testing service, to test in-place foundation soils and other soil materials proposed for use in the Work.
2. Costs for the first testing of an area shall be paid for by the Owner. All testing required for checking and correcting faulty work or work to be re-done shall be paid for by the Contractor at his own expense.
3. Services shall include:
 - a. Observation of proofrolling.
 - b. Sieve analysis of material to be used for compacted fill beneath footings and for fill beneath concrete slabs in exterior areas.
 - c. Tests for maximum dry density of compacted fill materials.
 - d. In-place field dry density tests for every 2,500 square feet of area of each layer of compacted subgrade fill under building slabs, other than drainage fill, as directed by Owner's Representative.
 - e. In-place field dry density tests, per ASTM D 1556 or ASTM D 2922 and D3017, for each layer of compacted fill under all footings, as directed by Owner's Representative.
 - f. If compaction is found to be unsatisfactory, extra in-place field dry density tests to determine the extent of recompaction work required.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

1.7 FIELD CONDITIONS

- A. Existing Conditions: The excavation contractor shall visit the site prior to submitting his bid in order to determine the existing conditions under which he will be obliged to operate and the extent of the site preparation work required.
- B. Existing Utilities:
1. Locate existing underground utilities in the areas of work before starting earthwork operations. If utilities are to remain in place, provide adequate means of protection during earthwork operations.
 2. Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, consult the Owner's Representative immediately as to how to proceed.
 3. Do not interrupt existing utilities serving facilities occupied or used by the Owner or others, except when permitted in writing by the Owner's Representative and then only after acceptable temporary utility services have been arranged.
 4. Demolish and completely remove from the site underground utilities indicated to be removed. Coordinate with local utility companies for shut-off and capping or sealing of services if lines are active.
- C. Explosives: The use of explosives will not be permitted.

1.8 PROTECTION OF PERSONS AND PROPERTY

- A. Barricade open excavations made as a part of earthwork operations and post with warning lights. Operate warning lights during hours from dusk to dawn each day and as otherwise required.
- B. Protect benchmarks and existing structures, roads, sidewalks, paving and curbs against damage from vehicular or foot traffic.
- C. Protect from frost the bottoms of excavations and soils around and beneath foundations.

1.9 BRACING, SHEETING AND SHORING

- A. Provide bracing, sheeting and shoring for the sides of excavations as necessary to prevent movement or settlement of adjacent structures, utilities, roads and streets, etc. The cost of bracing, sheeting and shoring required shall be deemed to have been included as part of the Contract Sum.
- B. The Contractor shall be entirely responsible for the strength and adequacy of all such bracing, sheeting and shoring, and is liable for any damage or injury caused by or resulting from improperly supported soils and structures. He shall, if required, submit fully detailed Shop Drawings for review prior to placement; however, such review shall not diminish the Contractor's responsibilities in any way.
- C. The Contractor shall issue any notices to owner of adjoining property that may be required by any pertinent laws or ordinances. Furnish copies of such notices to Owner's Representative.
- D. If the safety of any adjacent structures, utilities, etc., shall appear to be endangered, take all proper means to support such embankments, structures, utilities, etc., and notify the Owner. Do not resume operation without the Owner's permission.
- E. Provide and place bracing and shoring ordered by the Owner when necessary to safeguard adjacent buildings, etc. If the Contractor fails to comply promptly when so ordered, the required bracing and shoring may be placed by order of the Owner at the Contractor's expense. Any such action shall not relieve the Contractor of responsibility for the bracing and shoring or liability for damage.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. Fill Materials: Shall be obtained from excavations on the site, provided the material meets the following requirements and is approved by the testing lab. Fill material from offsite shall be obtained from borrow pits approved by the testing lab.
- B. Fill Supporting Footings: Well graded granular material, sand or gravel, tested by the testing laboratory. Not more than 10% shall pass #200 sieve; except that fill placed during wet weather or in wet areas shall have no more than 5% passing #200 sieve. Cohesive soils from excavations on the site may be used provided they can be compacted to 95% of maximum density as determined by ASTM D 1557-78.

- C. Fill Under Interior Floor Slabs, UP TO Drainage Course: Granular material of friable earth, or clay of low plasticity, tested by the testing laboratory.
- D. Drainage Fill Directly Under Interior Floor Slabs: Natural hard, clean sand; or naturally or artificially graded mixture of crushed gravel or crushed stone acceptable to the Owner's Representative and the testing service.
- E. Fill Under Concrete Pads and Stoops: Granular fill, the same as used for footings.
- F. Other (Ordinary) Backfill and Fill: Reasonably uniform soil materials free of organic or frozen material, debris, trash, and of stones 4" or greater in diameter. Soils from excavations on site may be used provided they can be compacted to the densities specified.

PART 3 - EXECUTION

3.1 SITE CLEARING

- A. General:
 - 1. Except as otherwise indicated, remove trees, shrubs, grass, weeds and other vegetation, improvements, or obstructions that directly interfere with installation of new construction. Remove tree stumps and remove roots projecting above surface of finish grade.
 - 2. Carefully and cleanly cut roots and branches of trees indicated to be left standing, where such roots and branches obstruct facilities to be constructed. Do not remove branches and roots for the convenience of construction operations except as approved by Owner for each tree. After cutting branches and roots, immediately apply an approved wound dressing.
- B. Topsoil Removal: Strip topsoil from areas to be excavated for construction. Remove heavy growths of grass from areas before stripping.
 - 1. Remove topsoil down to subsoils.
 - 2. Where trees are indicated to be left standing, stop topsoil stripping a sufficient distance from such trees to prevent damage to the main root system.
 - 3. Topsoil which has been removed without intermingling with other soils and is reasonably free of clay lumps, stones, and other objects over 2" in diameter, and without weeds, roots, and other objectionable material, shall be stockpiled for completion of the work. Topsoil not meeting these criteria may only be used for landscape work and shall be stockpiled separately or removed from the site.
 - 4. Construct stockpiles so as to drain precipitation freely. Cover storage piles as required to prevent wind-blown dust and erosion.

3.2 WATER CONTROL

- A. Grade around excavated areas so as to prevent water from running into trenches, areas for slabs-on-grade and excavations; and grade so as to prevent water from running onto adjacent properties or public thoroughfares.

- B. Keep excavations dry with pumps, piping and temporary drains until backfilling is completed.
- C. Do not discharge drainage water lines into municipal sewers without municipal approval.
- D. Ensure that water discharge does not contain silt.

3.3 EXCAVATION

- A. General: Excavate for all work to elevations and dimensions indicated, plus sufficient space to permit erection and installation of forms for footings and foundation walls.
 - 1. Notify testing lab and Owner of all unexpected sub-surface conditions. Discontinue work in area until Owner provides notification to resume work.
- B. All subgrades for footing and building slabs shall be approved by the soils testing service. Give soils testing service adequate notice as to when excavations are scheduled to reach subgrade elevations shown on Drawings.
- C. Authorized Additional Excavation: If an unacceptable subgrade material is encountered at the subgrade elevation shown on the Drawings, the Owner may direct the Contractor to excavate to a greater depth by way of Change Order.
- D. Unauthorized Excavations: If an acceptable subgrade is encountered at the subgrade elevation shown on the Drawings and excavation goes to a greater depth, no additional payment shall be made by the Owner for such excavation nor for backfilling to repair the over excavation.
- E. Rock Excavation:
 - 1. Definition: Excavation of boulders or pieces of rock, concrete, or masonry measuring more than 1/2 cubic yard; or hard shale or solid ledge rock and masonry requiring continuous use of pneumatic tools or drilling to be removed.
 - 2. Contractor must demonstrate inability to remove by hand pick or by power excavator used for other excavation. Prior to removal, obtain written approval from Owner's Representative that material to be removed qualifies for extra payment.
- F. Protect footing and building slab excavations from freezing until excavations are completely backfilled.

3.4 FILLING AND COMPACTION

- A. General:
 - 1. Remove all debris from excavations before backfilling.
 - 2. No fill to be compacted shall be placed in free water, or on frozen ground.
 - 3. Manipulate and wet the fill materials as required to obtain uniform moisture content throughout. Fills shall be placed at +2% of the material's optimum moisture content. Mix lean to fat clays with lower plasticity clays and/or hydrated lime or lime byproduct materials as necessary to achieve required compaction values.

4. Prior to placement of fills under footings, slabs and pavings, the upper 12" of subgrade shall be brought to within 2% of optimum moisture and compacted to not less than 90% per Modified Proctor Method.
5. All subgrades shall be approved by the soils testing service just prior to placement of fills. Should subgrade become frozen, desiccated, saturated or disturbed, remove the affected material, or scarify, moisture condition and recompact the affected materials. Notify soils testing service well ahead of when excavations are scheduled to reach the subgrade elevations required.
6. Proofroll after placement of fill to verify compliance.

B. Placing Fill to be Compacted:

1. Placement: Place fill material in layers not exceeding 8" in thickness, starting in the deepest area and progressing approximately parallel to the finished grade.
2. Testing Between Layers: Compaction of each layer shall be tested as specified. Obtain approval from Owner's Representative before next layer of fill is started.
3. Drainage Course Under Interior Concrete Slabs On Grade: Install a layer of the specified granular fill 6" thick, such that, after compaction, the top of the fill will be at the bottom elevation of the slab as indicated by the Drawings, plus 0", minus 1/2".
4. Fill Under Exterior Platform Slabs: Extend granular fill down to bottom of platform foundation.

C. Compaction Procedures:

1. Compact the soils immediately after placement, while they retain their optimum moisture content; otherwise, manipulate and wet the soil as required to obtain the required moisture content uniformly throughout.
2. Suspend compaction operations when proper results cannot be obtained because of rain or soggy conditions, or when other conditions are unsatisfactory.
3. Compact with vibratory compaction and/or rolling equipment to the specified densities. Compaction by travel of grading equipment will not be considered adequate. Use small vibratory or hand tamping compactors whenever fill is placed adjacent to walls or around footings and columns.
4. Each layer of fill shall be compacted all across its surface to the required density before additional fill may be placed.
5. If compaction is found to be unsatisfactory, recompact until required density is achieved.

D. Compaction Densities:

1. Granular Fill Under Footings, Building Slabs and Exterior Platforms: 95% of maximum density, per Modified Proctor Test (ASTM D 1557).
2. Cohesive Soil Fills Within Perimeter of Building Foundations: 95% of maximum laboratory density, per Modified Proctor Test (ASTM D 1557).
3. Fills To 10 Feet Outside of Building Perimeter: 95% of maximum density, per Modified Proctor Test (ASTM D 1557).

E. Replacement of Over-Excavation:

1. Where over-excavation has been authorized, provide approved granular fill to replace the materials excavated from below the designated design subgrade and compact the fill to the required densities. Payment for such additional work will be in accordance with the established unit prices.
2. When authorized over-excavation causes the width of the excavation to be increased, fill the excavation to the extended width with the appropriate fill materials and compact the fill to the required densities. Payment for the additional fill work required will be in accordance with the established unit prices.
3. Where over excavation has not been authorized, fill with granular fill compacted to the required density at the required elevation without additional payment.

3.5 ROUGH GRADING

- A. General: Uniformly grade new filled areas, including adjacent transition areas, and as otherwise indicated within the limits of construction. Include any areas disturbed by construction operations.
1. Smooth the finished surfaces within specified tolerances, with uniform levels of slopes between points where elevations are shown, or between such points and existing grades.
 2. The degree of finish required will be that ordinarily obtainable from either blade-grader or scraper operations.
- B. Interior of Building: Rough grade the areas under slabs-on-grade to not less than 6" nor more than 6-1/2", plus the slab thickness, below finish floor line. Grade the surface so as to be free from irregular surface changes.

3.6 MAINTENANCE

- A. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify the surface, reshape, and compact to the required density prior to further construction.
- B. Protection of Graded Areas: Protect newly graded areas from traffic and erosion, and keep free of trash and debris.
1. Repair and re-establish grades in settled, eroded, and rutted areas to the specified tolerances.
 2. Any settlement of areas shall be filled level and smoothed out, and shall be repaired so as to maintain the required grade level for a period of one year.

3.7 DISPOSAL OF EXCESS AND WASTE MATERIALS

- A. Remove excavated material unsuitable for fill or backfill from Owner's property before backfill operations begin. After backfilling is completed, remove from Owner's property all excess fill material.
- B. Areas under stockpiles not indicated as receiving new construction shall be restored to original condition.

- C. All off-site hauling shall be in tight beds such as to prevent spilling onto streets or highways. Use drip pans where necessary to prevent spilling. Off-site haul routes shall be approved by the appropriate county and city authorities for disposal of wastes from this contract.
- D. All excess material removed from site shall become the property of the Contractor. Legally dispose of all materials removed from the site.

END OF SECTION 312000