

**PROJECT MANUAL**  
FOR CONSTRUCTION OF

# CLARK COUNTY HEALTH DEPARTMENT FIRST FLOOR - CLINIC RENOVATIONS

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Jeffersonville, Indiana



**Kovert**Hawkins  
architects  
**PROJECT MANUAL**

FOR CONSTRUCTION OF

# CLARK COUNTY HEALTH DEPT FIRST FLOOR - CLINIC RENOVATIONS

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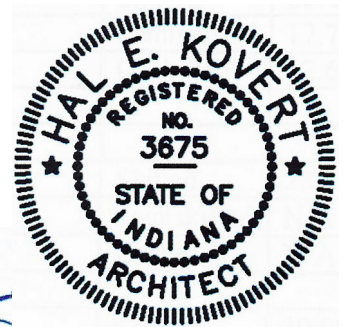
1201 Wall Street

Jeffersonville, Indiana

**KOVERT HAWKINS ARCHITECTS, INC.**

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A handwritten signature in blue ink, appearing to read "Hal E. Kovert", written over a horizontal line.

Date: February 26, 2019  
File: 200901.01

Hal E. Kovert, AIA  
State Registration Number 3675

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SECTION 00 11 13 - NOTICE TO BIDDERS

Notice is hereby given that sealed proposals will be received:

BY: Clark County Indiana Commissioners  
501 East Court Avenue, Room 404  
Jeffersonville, IN 47130

FOR: Clark County Health Department  
First Floor – Clinic Renovations  
1201 Wall Street  
Jeffersonville, IN 47130

AT: Clark County Indiana Commissioners  
501 East Court Avenue, Room 404  
Jeffersonville, IN 47130

UNTIL: 2:00 p.m. (project local time)

DATE: March 19, 2019

At which time all proposals will be opened and publicly read aloud. Proposals received after the hour and date set for receiving of proposals, will be returned unopened.

All work will be awarded under a single General Contract.

Proposals shall be executed on the Contractor's Bid for Public Works, Form 96 (Revised 2013), Parts I and II, in full accordance with the Proposal Documents, which are on file with the Owner and Architect and may be examined by Bidders at the following locations:

Clark County Indiana Commissioners  
501 East Court Avenue, Room 404  
Jeffersonville, IN 47130

Kovert Hawkins Architects, Inc.  
630 Walnut Street  
Jeffersonville, IN 47130

**PRE-BID CONFERENCE**

DATE: Tuesday, March 12, 2019  
TIME: 9:00 Project Local Time  
LOCATION: 1201 Wall Street, Jeffersonville, IN 47130

All bidders and plan services will have free access to a complete electronic set of Drawings and Specifications. All bid documents may be downloaded free of charge in electronic PDF format for viewing, printing and distribution to bidders, sub-bidders, suppliers, and reprographics services at the discretion and responsibility of the General Contractors. Bidders shall complete the Plan Holder List form via [www.koverthawkins.com/bid-information](http://www.koverthawkins.com/bid-information). Upon completion of the form, bidders will be re-directed to the Project Page where all bid information may be downloaded. Bidders should bookmark this link and [www.koverthawkins.com/bid-information](http://www.koverthawkins.com/bid-information) for future access. A list of updated Plan Holders and Addenda will periodically be posted and made available for download.

The Architect retains all copyright to the bid documents, as instruments of their professional service. Bidders, or any other persons, may not use the PDF files for any other purpose than preparing a bid for this project.

All General Contractors planning to submit a bid for this project are required to be Registered Plan Holders. Registered Plan Holders are only those who complete the Plan Holder List form via the Architect's website as

indicated above. Addenda and any other additional information will be emailed only to these registered plan holders (using the address provided on the Plan Holder List form) as they become available. Bidders obtaining partial copies of the bid documents from any other source are not Registered Plan Holders and will not be automatically provided with Addenda or other bidding updates as prepared by the Architect. Non-Registered Plan Holders assume all responsibility for obtaining all necessary information in a timely manner.

General Contractors shall certify on the Proposal Form that they have obtained a complete set of construction documents, including all Drawings, Specifications and Addenda, and have reviewed the jobsite to sufficiently familiarize themselves with the existing conditions.

All questions and requests for substitutions shall be directed to:

**Brendan Brown**

Kovert Hawkins Architects, Inc.

Brendan.brown@koverthawkins.com

Bid Security in the amount of five percent (5%) of the Proposal, including all add alternates must accompany each Proposal in accordance with the Instructions to Bidders.

The Owner reserves the right to accept or reject any bid and to waive any irregularities in bidding. The Base Bid may be held for a period not to exceed Forty-Five (45) days before awarding Contracts. All additive Alternate Bids may be held for a period not to exceed Thirty (30) days after signing of Contract.

Should a successful Bidder withdraw his bid, or fail to execute a satisfactory contract within ten (10) days after notice of acceptance of his bid, the Owner may declare the Bid Security forfeited as liquidated damages, not as penalty.

The successful Bidder shall furnish a Performance Bond and Labor and Materials Payment Bond in an amount equal to one hundred percent (100%) of the Contract Sum with an approved surety company and said bond shall remain in full force and effect for a period of one (1) year after date of final acceptance of the work. The cost of all bonds shall be included in the bid price.

CLARK COUNTY COMMISSIONERS  
February 26, 2019

END OF SECTION 00 11 13





# AIA® Document A701™ – 1997

## Instructions to Bidders

### for the following PROJECT:

*(Name and location or address)*

Clark County Health Department  
First Floor - Clinic Renovations  
1201 Wall Street  
Jeffersonville, IN 47130

### THE OWNER:

*(Name, legal status and address)*

Clark County Commissioners  
Clark County Government Center  
501 East Court Avenue, Room 404  
Jeffersonville, IN 47130

### THE ARCHITECT:

*(Name, legal status and address)*

Kovert Hawkins Architects, Inc.  
630 Walnut Street  
Jeffersonville, IN 47130

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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.

## ARTICLE 1 DEFINITIONS

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

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

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

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

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

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

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

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

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

## ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 The Bidder by making a Bid represents that:

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

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

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

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

## ARTICLE 3 BIDDING DOCUMENTS

### § 3.1 COPIES

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

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

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

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

### § 3.2 INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

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

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

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

### § 3.3 SUBSTITUTIONS

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

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

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

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

### § 3.4 ADDENDA

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

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

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

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

## **ARTICLE 4 BIDDING PROCEDURES**

### **§ 4.1 PREPARATION OF BIDS**

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

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

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

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

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

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

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

### **§ 4.2 BID SECURITY**

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

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

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

### **§ 4.3 SUBMISSION OF BIDS**

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

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

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

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

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

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

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

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

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

## **ARTICLE 5 CONSIDERATION OF BIDS**

### **§ 5.1 OPENING OF BIDS**

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

### **§ 5.2 REJECTION OF BIDS**

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

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

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

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

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

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

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

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

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

### **§ 6.3 SUBMITTALS**

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

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

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

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

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

## **ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND**

### **§ 7.1 BOND REQUIREMENTS**

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

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

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

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

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

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

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

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

## **ARTICLE 8 FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR**

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

SECTION 00 22 13 - SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

The following supplements modify the Instructions to Bidders, AIA Document A701 - 2018, entitled “Instructions to Bidders”. Where a portion of the Instruction to Bidders is modified or deleted by these Supplementary Instructions, the unaltered portions of the Instructions To Bidders shall remain in effect.

ARTICLE 9 - SUPPLEMENTARY INSTRUCTIONS

- 9.1 Article 3 - BIDDING DOCUMENTS, delete the current Paragraph and replace with the following:  
3.1.1 All bid documents may be downloaded free of charge in PDF format via the Architect’s website as identified in the Notice To Bidders. Any/all desired printing of bid documents, including all costs associated therewith, is to be borne by the bidders. The Architect retains all copyright to all Bid Documents. Bidders may not use the Bid Documents for any purpose except preparing a bid for this project.
- 9.2 Article 3 - BIDDING DOCUMENTS, delete the current Paragraph and replace with the following:  
3.1.2 Bid documents are available to sub-bidders in accordance with Paragraph 3.1.1.
- 9.3 Article 3 - BIDDING DOCUMENTS, add the following Paragraph:  
3.1.5 In the event of any discrepancy between electronic versions and any hard copy, printed versions of the files, the hard copy version on file at the Architect’s office will govern.
- 9.4 Article 3 - BIDDING DOCUMENTS, add the following Paragraph:  
3.3.5 When specifications include a list of acceptable manufacturers, it is done for the express purpose of establishing a basis of durability, efficiency, configuration, maintain Owner’s maintenance stock, and not for the purpose of limiting competition. These said names establish the products on which the bidder’s proposal shall be based for that particular specification item. Proposed substitutions must be submitted in accordance with Specification Section 01 62 00 - Product Options and Substitutions.
- 9.5 Article 3 - BIDDING DOCUMENTS, delete Paragraph 3.4.3.
- 9.6 Bidder shall submit financial statement as required by the Proposal Form.
- 9.7 Bidder shall submit two (2) copies of all required Bidding Documents.
- 9.8 All bidders shall submit Contractor’s Bid For Public Works-Form 96, Part I and Part II (Revised 2013), as required by the Proposal Form.
- 9.9 Article 7 – PERFORMANCE BOND AND PAYMENT BOND.  
Under Section 7.1.1, delete the words “If stipulated in the Bidding Documents, the” and substitute the word “The”.  
Under Section 7.1.1, add the following sentence: “The costs for all Bonds must be included in the bid price.”  
Delete Section 7.1.2 in its entirety.
- 9.10 Materials supplied for this project are exempt from Indiana State Sales Tax.  
Products purchased from sources outside the State of Indiana may require payment of sales tax to that particular jurisdiction. All costs for such tax will be the responsibility of the Contractor.
- 9.11 Electronic submissions of bids are NOT acceptable. This includes fax and e-mail.

END OF SECTION 00 22 13

SECTION 00 41 00 – CONTRACTOR’S BID FORM: PUBLIC WORKS

1.01 PROJECT MANUAL

A. All requirements of the Project Manual shall apply to this Section.

1.02 SCOPE

A. Contractor’s Bid Form shall be Contractor’s Bid For Public Works-Form 96 (Revised 2013), as modified and as included in Section 00 42 01 and Section 00 42 02.

1. Part I of Form 96 must be completed as required by statutes.
2. Part II of Form 96 must be completed as required by statutes only if project is one hundred thousand dollars (\$100,000) or more (IC 36-1-12-4).
3. Proposal form shall be submitted in duplicate (one signed original and one copy).
4. Forms to be reproductions of those included in Project Manual.
5. Contractor may bid each, any, or all separate contracts listed.

B. The executed Proposal Form and Non-Collusion Affidavit will become a part of the successful Bidder’s Contract Documents.

END OF SECTION 00 41 00



PROPOSAL FORM: PART I  
Form 96 (Revised 2013)

**CONTRACTOR’S BID FOR PUBLIC WORKS**  
Prescribed by the State Board of Accounts

CONTRACTORS BID FOR: **Clark County Health Department**  
**First Floor – Clinic Renovations**  
1201 Wall Street  
Jeffersonville, IN 47130

PART I  
**(Part I to be completed for all bids)**

Date (Month, Day, Year): \_\_\_\_\_

Governmental Unit (Owner): *CLARK COUNTY COMMISSIONERS*

County: \_\_\_\_\_

Bidder (Firm): \_\_\_\_\_

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

City, State, Zip: \_\_\_\_\_

Telephone No.: \_\_\_\_\_

Fax No.: \_\_\_\_\_

E-Mail Address: \_\_\_\_\_

Agent of Bidder: \_\_\_\_\_  
(if applicable)

Pursuant to notices given, the undersigned offers to furnish labor and/or material necessary to complete the public works project of CLARK COUNTY COMMISSIONERS (Governmental Unit) in accordance with plans and specifications prepared by Kovert Hawkins Architects, Inc. and their consultants for the sum of:

BASE BID

Lump Sum \_\_\_\_\_ \$ \_\_\_\_\_

The undersigned further agrees to furnish a bond or certified check with this bid for an amount specified in the notice of the letting. If alternative bids apply, the undersigned submits a proposal for each in accordance with the notice.

ADDENDA

Acknowledges receipt of:

Addendum No. \_\_\_\_\_ ( ) pages Dated \_\_\_\_\_

Addendum No. \_\_\_\_\_ ( ) pages Dated \_\_\_\_\_

Addendum No. \_\_\_\_\_ ( ) pages Dated \_\_\_\_\_

Addendum No. \_\_\_\_\_ ( ) pages Dated \_\_\_\_\_

ALLOWANCES

By initialing adjacent to amounts below, bidder acknowledges allowance amounts are included in the forgoing bid:

**Contingency Allowance** within the **Base Bid** per Section 01220 **\$ 35,000** initials \_\_\_\_\_

COMPLETION OF WORK

Undersigned guarantees, if awarded contract, to complete the work within \_\_\_\_\_( ) calendar days.

DISCRIMINATION

The Contractor and his subcontractors, if any, shall not discriminate against or intimidate any employee, or applicant for employment, to be employed in the performance of this contract, with respect to any matter directly or indirectly related to employment because of race, religion, color, sex, national origin or ancestry. Breach of this covenant may be regarded as a material breach of the Contract.

CERTIFICATION OF USE OF UNITED STATES STEEL PRODUCTS (if applicable)

I, the undersigned bidder or agent as a contractor on a public works project, understand my statutory obligation to use steel products made in the United States (I.C. 5-16-8-2). I hereby certify that I and all subcontractors employed by me for this project will use U.S. steel products on this project if awarded. I understand that violations hereunder may result in forfeiture of contractual payments.

NON-COLLUSION AFFIDAVIT

The undersigned bidder or agent, being duly sworn on oath, says that he has not, nor has any other member, representative, or agent of the firm, company, corporation or partnership represented by him, entered into any combination, collusion or agreement with any person relative to the price to be bid by anyone at such letting nor to prevent any person from bidding nor to induce anyone to refrain from bidding, and that this bid is made without reference to any other bid and without any agreement, understanding or combination with any other person in reference to such bidding.

He further says that no person or persons, firms, or corporation has, have or will receive directly or indirectly, any rebate, fee, gift, commission or thing of value on account of such sale.

GENERAL CONTRACTOR CERTIFICATION

I hereby certify that we have obtained a complete set of construction documents, including all Drawings, Specifications and Addenda, and have reviewed the jobsite to sufficiently familiarize ourselves with the existing conditions.

Dated at \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
(Name of Organization)

BY \_\_\_\_\_

\_\_\_\_\_  
(Title of Person Signing)

OATH AND AFFIRMATION

I hereby affirm under the penalties for perjury that the facts and information contained in the foregoing bid for public works are true and correct.

Dated at \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
(Name of Organization)

BY \_\_\_\_\_

\_\_\_\_\_  
(Title of Person Signing)

ACKNOWLEDGEMENT

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

Before me, a Notary Public, personally appeared the above-named \_\_\_\_\_ and  
(Name of Person Signing)  
swore that the statements contained in the foregoing document are true and correct.

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_

County of Residence: \_\_\_\_\_

ACCEPTANCE

The above bid is accepted this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_,

subject to the following conditions: \_\_\_\_\_  
\_\_\_\_\_.

Contracting Authority Members:

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

END OF SECTION 00 42 01

PROPOSAL FORM: PART II  
Form 96 (Revised 2013)

**CONTRACTOR’S BID FOR PUBLIC WORKS**  
Prescribed by the State Board of Accounts

Part II

**(Part II to be completed only if project is \$100,000 or more - IC 36-1-12-4).**

Governmental Unit: **CLARK COUNTY COMMISSIONERS**

Bidder (Firm): \_\_\_\_\_

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

These statements to be submitted under oath by each bidder with and as a part of his bid.  
Attach additional pages for each section as needed.

SECTION I: EXPERIENCE QUESTIONNAIRE

1. What public works projects has your organization completed for the period of one (1) year prior to the date of the current bid?

<i>Contract Amount</i>	<i>Class of Work</i>	<i>Completion Date</i>	<i>Name and Address of Owner</i>

2. What public works projects are now in process of construction by your organization?

<i>Contract Amount</i>	<i>Class of Work</i>	<i>Expected Completion Date</i>	<i>Name and Address of Owner</i>

3. Have you ever failed to complete any work awarded to you? \_\_\_\_\_ If so, where and why?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

4. List references from private firms for which you have performed work.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

SECTION II: PLAN AND EQUIPMENT QUESTIONNAIRE

1. Explain your plan or layout for performing proposed work.

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2. Please list the names and addresses of all subcontractors that you have used on public works projects during the past five (5) years along with a brief description of the work done by each subcontractor.

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3. If you intend to sublet any portion of the work, state the name and address of each subcontractor, equipment to be used by the subcontractor, and whether you will require a bond. However, if you are unable to currently provide a listing, please understand a listing must be provided prior to contract approval. Until the completion of the proposed project, you are under a continuing obligation to immediately notify the governmental unit in the event that you subsequently determine that you will use a subcontractor on the proposed project.

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4. What equipment do you have available to use for the proposed project? Any equipment to be used by subcontractors may also be required to be listed by the governmental unit.

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5. Have you entered into contracts or received offers for all materials which substantiate the prices used in preparing your proposal? If not, please explain the rationale used which would corroborate the prices listed.

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SECTION III: CONTRACTOR’S FINANCIAL STATEMENT

Attachment of bidder’s financial statement is mandatory. Any bid submitted without said financial statement as required by statute shall thereby be rendered invalid. The financial statement provided hereunder to the governing body awarding the contract must be specific enough in detail so that said governing body can make a proper determination of the bidder’s capability for completing the project if awarded.

SECTION IV: NON-COLLUSION AFFIDAVIT

The undersigned bidder or agent, being duly sworn on oath, says that he has not, nor has any other member, representative, or agent of the firm, company, corporation or partnership represented by him, entered into any combination, collusion or agreement with any person relative to the price to be bid by anyone at such letting nor to prevent any person from bidding nor to induce anyone to refrain from bidding, and that this bid is made without reference to any other bid and without any agreement, understanding or combination with any other person in reference to such bidding.

He further says that no person or persons, firms, or corporation has, have or will receive directly or indirectly, any rebate, fee, gift, commission or thing of value on account of such sale.

SECTION V: OATH AND AFFIRMATION

I hereby affirm under the penalties for perjury that the facts and information contained in the foregoing bid for public works are true and correct.

Dated at \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
*(Name of Organization)*

BY \_\_\_\_\_

\_\_\_\_\_  
*(Title of Person Signing)*

ACKNOWLEDGEMENT

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

Before me, a Notary Public, personally appeared the above-named \_\_\_\_\_ and  
*(Name of Person Signing)*  
swore that the statements contained in the foregoing document are true and correct.

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_.

\_\_\_\_\_  
*Notary Public*

My Commission Expires: \_\_\_\_\_ County of Residence: \_\_\_\_\_

SECTION 00 45 46.02 – INDIANA CERTIFICATE OF QUALIFICATIONS FOR PUBLIC WORKS PROJECTS

1.01 PROJECT MANUAL

- A. All requirements of the Project Manual apply to this Section.

1.02 SCOPE

- A. All contractors shall have Indiana Certificate of Qualification for Public Works Projects per Indiana Code IC 5-16-13 prior to beginning construction on site.
- B. Tier 1 contractor(s) shall be certified prior to final execution of the Owner/Contractor Agreement.
- C. A “contractor” requiring certification generally refers to a contractor in any contractor tier.
1. “Tier 1 contractor” has a direct contract with the government agency (Owner). This is also known as the “prime contractor” or “general contractor”.
  2. “Tier 2 contractor” has a direct contract with a Tier 1 contractor. This is also known as a subcontractor.
  3. “Tier 3 contractor” has a direct contract with a Tier 2 contractor. This is also known as a sub-subcontractor.
  4. “Lower tier contractor” has a direct contract with a Tier 3 contractor or lower tier contractor
  5. A supplier or firm not performing any work on site is not required to be qualified.
- D. A contractor of any tier is EXEMPT from requirements of this section if the total amount of their work awarded is less than Three Hundred Thousand dollars (\$300,000).

1.03 TIER 1 CONTRACTOR

- A. Must contribute a minimum of 15% of the initial contract amount by any combination of items 1, 2 or 3 listed below:
1. Work performed directly by Tier 1 contractor’s employees
  2. Materials supplied directly by Tier 1 contractor
  3. Services supplied directly by the Tier 1 contractor’s employees

1.04 INSURANCE REQUIREMENTS

- A. Minimum requirements for each individual or firm in any contractor tier:
- B. See Supplementary General Conditions, Section 00 73 01, Article 11

1.05 DRUG TESTING

- A. Per Indiana Code, IC-4-13-18
1. Required of all contractors, regardless of tier.
  2. Written plan for employee drug testing program that complies with IC-4-13-18

1.06 EMPLOYEE VERIFICATION

- A. Per Indiana Code, IC-22-5-1.7-3
1. Required of all contractors, regardless of tier.
  2. Participate in the E-Verify Program



1.07 APPRENTICESHIP & TRAINING PROGRAM

- A. Per Indiana Code, IC-5-16-13-12
  
- B. Contractors with 10 or more employees
  - 1. Provide access to training program applicable to tasks performed in normal course of employment.
  - 2. Compliance may be accomplished through any of the following:
    - a. Apprenticeship program
    - b. Programs offered by Ivy Tech Community College of Indiana
    - c. Programs offered by Vincennes University
    - d. Programs established by or for the contractor
    - e. Programs offered by an entity sponsored by the US Dept of Labor
    - f. Programs that results in the award of industry recognized portable certification
    - g. Programs approved by US Dept of Transportation or INDOT.
  
- C. Tier 1 and tier 2 contractors with 50 or more employees
  - 1. Must participate in an apprenticeship or training program which meets the standards of any of the following:
    - a. The US Department of Labor, Bureau of Apprenticeship and Training
    - b. The Indiana Department of Labor
    - c. The US Department of Transportation, Federal Highway Administration
    - d. INDOT

1.08 RECORDS

- A. Per Indiana Code, IC-5-16-13-13
  
- B. Payroll and related records of a contractor in any contractor tier must be:
  - 1. Preserved by the contractor for a period of three (3) years after completion
  - 2. Open to inspection by the department of workforce development

END OF SECTION 00 45 46.02

SECTION 00 43 13 - BID SECURITY FORM

1.01 PROJECT MANUAL

All requirements of the Project Manual shall apply to this Section.

1.02 SCOPE

A. Contractors Bid Security shall be either:

1. Bid Bond.
2. Certified Check.
3. Cashier's Check.

B. The Bid Bond, if used, shall be AIA Document A310 - 2010, entitled "Bid Bond".

1. Bond shall be by an acceptable Surety Company licensed to do business in the State of **Indiana**.
2. A copy of this form is bound herewith.

C. Bid Security shall be:

1. In an amount equal to five (5) percent of the total lump sum base bid plus (5) percent of all add alternates.
2. Security shall be executed in favor of the Owner.
3. Should the successful Bidder fail to enter into a contract or furnish the required Bonds within ten (10) days from date of notice of award, the Owner may declare the Bidder's Bid Security forfeited and the Security amount retained by the Owner as liquidated damages.

D. Refer to Section 00 43 93 - Contractor's Bid Submittal Checklist for requirements as to time of submission.

END OF SECTION 00 43 13

 **AIA** Document A310™ – 2010**Bid Bond****CONTRACTOR:***(Name, legal status and address)***SURETY:***(Name, legal status and principal place of business)***OWNER:***(Name, legal status and address)*Clark County Commissioners  
Clark County Government Center  
501 East Court Avenue, Room 404  
Jeffersonville, IN 47130**BOND AMOUNT: \$****PROJECT:***(Name, location or address, and Project number, if any)*Clark County Health Department  
First Floor - Clinic Renovations  
1201 Wall Street  
Jeffersonville, IN 47130

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

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

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or

**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.

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

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legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this    day of    ,

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

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

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

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

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

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

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

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



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SECTION 00 52 00 - AGREEMENT FORM

1.01 PROJECT MANUAL

All requirements of the Project Manual shall apply to this Section.

1.02 SCOPE

A. The agreement shall be AIA Document A101 - 2017, entitled “Standard Form of Agreement Between Owner and Contractor”.

1. Where the basis of payment is a stipulated sum.
2. Copy of this form is bound herewith.

B. This form, when fully executed, becomes a part of the successful Bidder’s Contract Documents.

END OF SECTION 00 52 00

 **AIA** Document A101™ – 2017**Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum**

**AGREEMENT** made as of the    day of    in the year  
*(In words, indicate day, month and year.)*

**BETWEEN** the Owner:  
*(Name, legal status, address and other information)*

Clark County Commissioners  
Clark County Government Center  
501 East Court Avenue, Room 404  
Jeffersonville, IN 47130  
Telephone Number: (812) 285-6275

and the Contractor:  
*(Name, legal status, address and other information)*

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

Clark County Health Department  
First Floor - Clinic Renovations  
1201 Wall Street  
Jeffersonville, IN 47130

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

Kovert Hawkins Architects, Inc.  
630 Walnut Street  
Jeffersonville, IN 47130  
Telephone Number: 812.282.9554  
Fax Number: 812.282.9171

The Owner and Contractor agree as follows.

**ADDITIONS AND DELETIONS:**

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

The parties should complete A101™–2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201™–2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

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## TABLE OF ARTICLES

- 1 THE CONTRACT DOCUMENTS
- 2 THE WORK OF THIS CONTRACT
- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
- 4 CONTRACT SUM
- 5 PAYMENTS
- 6 DISPUTE RESOLUTION
- 7 TERMINATION OR SUSPENSION
- 8 MISCELLANEOUS PROVISIONS
- 9 ENUMERATION OF CONTRACT DOCUMENTS

### EXHIBIT A INSURANCE AND BONDS

#### ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

#### ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

#### ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:

*(Check one of the following boxes.)*

- The date of this Agreement.
- A date set forth in a notice to proceed issued by the Owner.
- Established as follows:

*(Insert a date or a means to determine the date of commencement of the Work.)*

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

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

#### § 3.3 Substantial Completion

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

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

[ ] Not later than ( ) calendar days from the date of commencement of the Work.

[ ] By the following date:

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

Portion of Work	Substantial Completion Date
-----------------	-----------------------------

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

**ARTICLE 4 CONTRACT SUM**

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor’s performance of the Contract. The Contract Sum shall be (\$ ), subject to additions and deductions as provided in the Contract Documents.

**§ 4.2 Alternates**

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

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

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

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

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

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

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

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

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

§ 4.6 Other: (Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)



## ARTICLE 5 PAYMENTS

### § 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the day of the month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than ( ) days after the Architect receives the Application for Payment.

*(Federal, state or local laws may require payment within a certain period of time.)*

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

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

- .1 That portion of the Contract Sum properly allocable to completed Work;
- .2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
- .3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

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

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

### § 5.1.7 Retainage

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

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

**§ 5.1.7.1.1** The following items are not subject to retainage:  
(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

**§ 5.1.7.2** Reduction or limitation of retainage, if any, shall be as follows:  
(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)

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

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

**§ 5.1.9** Except with the Owner’s prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

## **§ 5.2 Final Payment**

**§ 5.2.1** Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor’s responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

**§ 5.2.2** The Owner’s final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect’s final Certificate for Payment, or as follows:

## **§ 5.3 Interest**

Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

(Insert rate of interest agreed upon, if any.)

%

## **ARTICLE 6 DISPUTE RESOLUTION**

### **§ 6.1 Initial Decision Maker**

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.  
(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

## § 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:

*(Check the appropriate box.)*

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

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

## ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner’s convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:

*(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner’s convenience.)*

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

## ARTICLE 8 MISCELLANEOUS PROVISIONS

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

§ 8.2 The Owner’s representative:

*(Name, address, email address, and other information)*

§ 8.3 The Contractor’s representative:

*(Name, address, email address, and other information)*

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

**§ 8.5 Insurance and Bonds**

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

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

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

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

§ 8.7 Other provisions:

**ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS**

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101™-2017, Standard Form of Agreement Between Owner and Contractor
- .2 AIA Document A101™-2017, Exhibit A, Insurance and Bonds
- .3 AIA Document A201™-2017, General Conditions of the Contract for Construction
- .4 AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:  
*(Insert the date of the E203-2013 incorporated into this Agreement.)*

.5 Drawings

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

.6 Specifications

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

.7 Addenda, if any:

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

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

.8 Other Exhibits:

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

Init.

AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:  
(Insert the date of the E204-2017 incorporated into this Agreement.)

The Sustainability Plan:

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

Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
----------	-------	------	-------

**.9** Other documents, if any, listed below:

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

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

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

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

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

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

Init.

/

SECTION 00 52 99 - ESCROW AGREEMENT

1.01 PROJECT MANUAL

All requirements of the Project Manual shall apply to this Section.

1.02 SCOPE

- A. All funds retained by the Owner from approved certificates for payment shall be placed in Escrow per **Indiana** Statutes.
1. Escrow Agreement Form shall be provided by the Escrow Agent and shall be acceptable to both the Owner and the Contractor.
  2. Escrow Agreement, when executed shall become a part of the Contract Documents.
  3. All escrowed funds shall be deposited in a financial institute as agreed upon by both parties to the Contract.

END OF SECTION 00 52 99

SECTION 00 61 13 – CONTRACTOR’S BOND FOR CONSTRUCTION

1.01 PROJECT MANUAL

All requirements of the Project Manual shall apply to this Section.

1.02 SCOPE

- A. The Performance Bond and Labor and Material Payment Bond shall be AIA Document A312 - 2010, comprised of two sections entitled “Performance Bond” and “Payment Bond”.
  - 1. Bonds shall be executed by an acceptable Surety Company licensed to do business in the State of **Indiana**.
  - 2. A copy of this form is bound herewith.
- B. Bonds shall be executed in an amount equal to one hundred percent (100%) of the contract amount in favor of the Owner conditioned on the full and faithful performance of the contract and full payment of all obligations arising there under.
- C. This form when fully executed becomes a part of the successful bidder’s Contract Documents.

END OF SECTION 00 61 13



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

## Performance Bond

**CONTRACTOR:**

*(Name, legal status and address)*

**SURETY:**

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

**OWNER:**

*(Name, legal status and address)*

Clark County Commissioners  
Clark County Government Center  
501 East Court Avenue, Room 404  
Jeffersonville, IN 47130

**CONSTRUCTION CONTRACT**

Date:

Amount: \$

Description:

*(Name and location)*

Clark County Health Department  
First Floor - Clinic Renovations  
1201 Wall Street  
Jeffersonville, IN 47130

**BOND**

Date:

*(Not earlier than Construction Contract Date)*

Amount: \$

Modifications to this Bond:                      None                      See Section 16

**CONTRACTOR AS PRINCIPAL**

Company:                      *(Corporate Seal)*

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

Name and  
Title:

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

**SURETY**

Company:                      *(Corporate Seal)*

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

Name and  
Title:

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

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

*(Architect, Engineer or other party:)*

**ADDITIONS AND DELETIONS:**

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.

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



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

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

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

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

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

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

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

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

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

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

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

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

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

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

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

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

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

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

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

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

#### § 14 Definitions

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

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

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

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

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

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

§ 16 Modifications to this bond are as follows:

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

**CONTRACTOR AS PRINCIPAL**

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

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

**SURETY**

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

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



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

## Payment Bond

**CONTRACTOR:**

*(Name, legal status and address)*

**SURETY:**

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

**OWNER:**

*(Name, legal status and address)*

Clark County Commissioners  
Clark County Government Center  
501 East Court Avenue, Room 404  
Jeffersonville, IN 47130

**CONSTRUCTION CONTRACT**

Date:

Amount: \$

Description:

*(Name and location)*

Clark County Health Department  
First Floor - Clinic Renovations  
1201 Wall Street  
Jeffersonville, IN 47130

**BOND**

Date:

*(Not earlier than Construction Contract Date)*

Amount: \$

Modifications to this Bond:

None

See Section 18

**CONTRACTOR AS PRINCIPAL**

Company: *(Corporate Seal)*

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

**SURETY**

Company: *(Corporate Seal)*

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

Name and \_\_\_\_\_

Title:

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

Name and \_\_\_\_\_

Title:

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

**AGENT or BROKER:**

**OWNER'S REPRESENTATIVE:**

*(Architect, Engineer or other party:)*

**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.

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

Init.

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User Notes:

(3B9ADA45)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## **§ 16 Definitions**

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

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

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

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

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

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

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

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

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

**CONTRACTOR AS PRINCIPAL**

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

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

**SURETY**

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

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

SECTION 00 72 00 - GENERAL CONDITIONS

1.01 PROJECT MANUAL

All requirements of the Project Manual shall apply to this Section.

1.02 SCOPE

A. The General Conditions shall be AIA Document A201 - 2017, entitled "General Conditions of the Contract for Construction".

1. A copy of which is bound herewith.

END OF SECTION 00 72 00





# AIA<sup>®</sup> Document A201<sup>™</sup> – 2017

## General Conditions of the Contract for Construction

### for the following PROJECT:

*(Name and location or address)*

Clark County Health Department  
First Floor - Clinic Renovations  
1201 Wall Street  
Jeffersonville, IN 47130

### THE OWNER:

*(Name, legal status and address)*

Clark County Commissioners  
Clark County Government Center  
501 East Court Avenue, Room 404  
Jeffersonville, IN 47130

### THE ARCHITECT:

*(Name, legal status and address)*

Kovert Hawkins Architects, Inc.  
630 Walnut Street  
Jeffersonville, IN 47130

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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.

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

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User Notes:

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## ARTICLE 1 GENERAL PROVISIONS

### § 1.1 Basic Definitions

#### § 1.1.1 The Contract Documents

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

#### § 1.1.2 The Contract

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

#### § 1.1.3 The Work

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

#### § 1.1.4 The Project

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

#### § 1.1.5 The Drawings

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

#### § 1.1.6 The Specifications

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

#### § 1.1.7 Instruments of Service

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

#### § 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

### § 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent

consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

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

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

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

### **§ 1.3 Capitalization**

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

### **§ 1.4 Interpretation**

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

### **§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service**

**§ 1.5.1** The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

**§ 1.5.2** The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

### **§ 1.6 Notice**

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

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

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

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

## § 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

## ARTICLE 2 OWNER

### § 2.1 General

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

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

### § 2.2 Evidence of the Owner's Financial Arrangements

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

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

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

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

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

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements,

assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

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

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

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

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

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

#### **§ 2.4 Owner's Right to Stop the Work**

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

#### **§ 2.5 Owner's Right to Carry Out the Work**

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

### **ARTICLE 3 CONTRACTOR**

#### **§ 3.1 General**

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

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

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

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### § 3.2 Review of Contract Documents and Field Conditions by Contractor

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

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

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

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

### § 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

### § 3.4 Labor and Materials

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

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

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

### **§ 3.5 Warranty**

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

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

### **§ 3.6 Taxes**

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

### **§ 3.7 Permits, Fees, Notices and Compliance with Laws**

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

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

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

### **§ 3.7.4 Concealed or Unknown Conditions**

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

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

### **§ 3.8 Allowances**

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

**§ 3.8.2** Unless otherwise provided in the Contract Documents,

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

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

### **§ 3.9 Superintendent**

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

**§ 3.9.2** The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

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

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

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

**§ 3.10.2** The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the



Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

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

### **§ 3.11 Documents and Samples at the Site**

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

### **§ 3.12 Shop Drawings, Product Data and Samples**

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

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

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

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

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

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

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

**§ 3.12.8** The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

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

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

**§ 3.12.10.1** If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

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

### **§ 3.13 Use of Site**

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

### **§ 3.14 Cutting and Patching**

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

**§ 3.14.2** The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

### **§ 3.15 Cleaning Up**

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

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

### § 3.16 Access to Work

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

### § 3.17 Royalties, Patents and Copyrights

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

### § 3.18 Indemnification

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

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

## ARTICLE 4 ARCHITECT

### § 4.1 General

**§ 4.1.1** The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

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

### § 4.2 Administration of the Contract

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

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

**§ 4.2.3** On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the

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Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

#### § 4.2.4 Communications

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

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

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

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

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

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

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

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

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations

and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

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

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

## **ARTICLE 5 SUBCONTRACTORS**

### **§ 5.1 Definitions**

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

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

### **§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work**

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

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

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

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

### **§ 5.3 Subcontractual Relations**

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor,

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

#### **§ 5.4 Contingent Assignment of Subcontracts**

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

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

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

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

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

### **ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS**

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

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

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

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

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

#### **§ 6.2 Mutual Responsibility**

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

**§ 6.2.2** If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work,

promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

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

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

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

### **§ 6.3 Owner's Right to Clean Up**

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

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

### **§ 7.1 General**

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

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

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

### **§ 7.2 Change Orders**

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

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

### **§ 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:

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- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

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

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

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

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

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

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

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

#### § 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will



affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

## **ARTICLE 8 TIME**

### **§ 8.1 Definitions**

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

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

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

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

### **§ 8.2 Progress and Completion**

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

**§ 8.2.2** The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

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

### **§ 8.3 Delays and Extensions of Time**

**§ 8.3.1** If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

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

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

## **ARTICLE 9 PAYMENTS AND COMPLETION**

### **§ 9.1 Contract Sum**

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

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

### **§ 9.2 Schedule of Values**

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

unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

### **§ 9.3 Applications for Payment**

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

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

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

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

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

### **§ 9.4 Certificates for Payment**

**§ 9.4.1** The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

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

## § 9.5 Decisions to Withhold Certification

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

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

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

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

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

## § 9.6 Progress Payments

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

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

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

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

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

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

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

**§ 9.6.8** Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

### **§ 9.7 Failure of Payment**

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

### **§ 9.8 Substantial Completion**

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

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

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

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

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

## **§ 9.9 Partial Occupancy or Use**

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

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

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

## **§ 9.10 Final Completion and Final Payment**

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

**§ 9.10.2** Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

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

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

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

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

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

### **§ 10.1 Safety Precautions and Programs**

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

### **§ 10.2 Safety of Persons and Property**

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

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

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

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

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

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

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

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

### § 10.2.8 Injury or Damage to Person or Property

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

### § 10.3 Hazardous Materials and Substances

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

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

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

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

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

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

### § 10.4 Emergencies

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

## ARTICLE 11 INSURANCE AND BONDS

### § 11.1 Contractor's Insurance and Bonds

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

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

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

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

### § 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

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

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

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### § 11.3 Waivers of Subrogation

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

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

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

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

### § 11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

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

## ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

### § 12.1 Uncovering of Work

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

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to

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

## **§ 12.2 Correction of Work**

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

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

### **§ 12.2.2 After Substantial Completion**

**§ 12.2.2.1** In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

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

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

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

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

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

## **§ 12.3 Acceptance of Nonconforming Work**

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

## **ARTICLE 13 MISCELLANEOUS PROVISIONS**

### **§ 13.1 Governing Law**

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

## § 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

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

## § 13.3 Rights and Remedies

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

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

## § 13.4 Tests and Inspections

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

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

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

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

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

## § 13.5 Interest

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

## ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

### § 14.1 Termination by the Contractor

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

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

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

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

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

### § 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

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

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

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

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

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance,

the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

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

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

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

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

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

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

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

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

**§ 14.4.3** In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

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

#### **§ 15.1 Claims**

##### **§ 15.1.1 Definition**

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

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

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

##### **§ 15.1.3 Notice of Claims**

**§ 15.1.3.1** Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

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

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

**§ 15.1.4.1** Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

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

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

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

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

**§ 15.1.6.1** If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

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

#### **§ 15.1.7 Waiver of Claims for Consequential Damages**

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

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

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

#### **§ 15.2 Initial Decision**

**§ 15.2.1** Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

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

Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

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

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

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

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

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

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

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

### **§ 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 15.1.7, 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** Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

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

#### § 15.4 Arbitration

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

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

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

#### § 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party 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 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party 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 those of the Owner and Contractor under this Agreement.



**SECTION 00 73 01 - SUPPLEMENTARY GENERAL CONDITIONS**

Unless otherwise provided in these Supplemental Conditions, all work shall be governed by the terms of AIA Document A201 - 2017, entitled “General Conditions of the Contract for Construction”. The following Supplemental Conditions, modify, delete from and add to AIA A201. Where an Article Paragraph, Subparagraph or Clause of AIA A201 is modified, deleted from or added to by these Supplemental Conditions, the unaltered provisions of that Article, Paragraph, Subparagraph or Clause shall remain in full force and effect. To the extent that there is any conflict or ambiguity between AIA A201 and these Supplemental Conditions, then these Supplemental Conditions shall control.

**ARTICLE 1 - GENERAL PROVISIONS**

**1.1.1 THE CONTRACT DOCUMENTS**

Add the following:

The Contract Documents also include the following bid documents:

1. Proposal Form (Form 96, Part I and II) – Contractor’s Bid for Public Works.

**1.1.5 THE DRAWINGS**

Add the following Paragraphs:

- |         |   |
|---------|---|
| 1.1.5.1 | The Drawings are a graphic representation intended to convey the design intent of the Project. They are a 2-dimensional representation of a 3-dimensional Project, and they do not provide a detail for every construction condition of the project. The Drawings are a small scale representation of complex construction assemblies and components, and not every element of the Project can be indicated in these small scale representations. The Drawings are not an instruction manual, nor are they assembly instructions. They are meant for use by experienced, competent construction professionals with the ability to read, interpret, co-ordinate, interpolate and infer information from them. The Drawings do not indicate every component and assembly necessary to construct the Project. It is the Contractor’s responsibility to provide all components and assemblies necessary to provide a safe, complete and finished Project, which is reasonably fit for its intended purpose, whether or not such components and assemblies are detailed on the Drawings. |
| 1.1.5.2 | In general, all drawings are diagrammatic and schematic, and cannot indicate every offset, fitting, and accessory, nor can they indicate the field coordination work required to avoid all conflict with other trades. Contractor shall check drawings, shop drawings, and actual equipment of other trades to verify spaces available and make reasonable modifications, as directed, without extra cost to Owner; maintain headroom and other requirements in all areas; and where such requirements appear inadequate, notify Architect/Engineer before proceeding.  |

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

Add the following sentence to Paragraph 1.2.1:

It is the Contractor’s responsibility to provide all work necessary for a complete and finished Project of first class quality. The Contractor will work skillfully, carefully and will perform in all respects in a workmanlike manner.

Add the following Paragraphs 1.2.2.1 and 1.2.3.1:

- 1.2.2.1 The Drawings are not intended to define the scope of work among various trades, sub-contractors, material suppliers and vendors. The sheet numbering system is for the convenience of the Architect and the Architect's consultants only, and is not intended to define a sub-contractor's or material supplier's scope of work. Information is detailed, described and located at various locations throughout the Drawings. No consideration will be given to requests for change orders which relate to a failure of the Contractor, or the Contractor's sub-contractors and suppliers to obtain and review a complete set of Contract Documents during bidding, nor to maintain a complete set of Contract Documents during construction. Where bidding is separated into a number of different prime contracts, this paragraph applies to each of the separate prime contracts.
- 1.2.3.1 In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following priorities.
1. The Agreement
  2. Addenda, with those of later date having precedence over those of earlier date.
  3. The Supplementary Conditions.
  4. The General Conditions of the Contract for Construction.
  5. Drawings and Specifications.

In the case of an inconsistency between Drawings and Specifications or within either Document not clarified by addendum, the better quality or greater quantity of Work shall be provided in accordance with the Architect's interpretation. The Contractor has a duty to inquire about possible ambiguities and inconsistencies which are patent or obvious during the bidding process, and will not receive additional compensation or be excused from resulting difficulties in performance for failure to point out any inconsistencies after that point. In the case of disregard by the Contractor of such inconsistencies and ambiguities, the Architect may require the Contractor to remove and correct work which has been installed at no additional cost to the Owner.

## **ARTICLE 2 - OWNER**

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

2.3.4 DELETE Subparagraph 2.3.4 in its entirety and replace with the following:

Neither the Owner nor the Architect shall be liable for inaccuracies or omissions contained in any surveys for the site of the Project, nor shall any inaccuracies or omissions in such items relieve the Contractor of its responsibility to perform the Work in accordance with the Contract Documents.

## **ARTICLE 3 - CONTRACTOR**

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

3.3.4 ADD the following new Subparagraph:

The Contractor shall maintain total control of and shall be fully responsible for the Contractor's employees, agents, representatives, workers, Subcontractors, sub-subcontractors and other such persons or entities, and shall remove from the Site any such persons or entities not in compliance with the Contract Documents as interpreted by the Architect or the Owner. The Contractor shall assure harmonious labor relations at and adjacent to the Site so as to prevent any delays, disruption or interference to the Work. The Contractor shall prevent strikes, sympathy strikes, slowdowns, work interruption, jurisdictional disputes or other labor disputes resulting for any reason whatsoever, from the

acts or failure to act, of the employees of the Contractor or any of its Subcontractors material suppliers, or other such persons or entities. The Contractor agrees that it will bind and require all of its Subcontractors, material suppliers and other such persons or entities to agree to all of the provisions of this subparagraph. If the Contractor or any of its Subcontractors, material suppliers or other such persons or entities fail to fulfill any of the covenants set forth in the Subparagraph, the Contractor will be deemed to be in default and substantial violation of the Contract Documents.

### **3.5 WARRANTY**

Add the following new Subparagraphs 3.5.3, 3.5.4, 3.5.5, 3.5.6, 3.5.7, 3.5.8, 3.5.9 and 3.5.10

- 3.5.3 For a period of one (1) year from the date of Substantial Completion, the Contractor warrants as provided in Subparagraph 3.5.1 and further warrants to the Owner, and the Architect that (a) all movable or adjustable work shall remain in working order, including hardware, doors, windows, apparatus, machinery, mechanical and electrical equipment and (b) the Contractor's portion of the Work shall be waterproof and weatherproof in every respect.
- 3.5.4 In addition to all the Contractor warranties and obligations to correct defective Work provided by law or as set forth in any of the Contract Documents, the Contractor agrees, upon notice from the Owner or the Architect, to pay for, and if requested, correct, repair, restore and cure any damage or injury, whenever the same shall occur or appear, resulting from any defects, omissions or failure in workmanship or materials, and indemnify, hold harmless, and defend the Owner against any and all claims, losses, costs, damages and expenses, including attorneys' fees, suffered by the Owner as a result of such damage or injury, whenever such damage or injury shall occur or appear.
- 3.5.5 The commencement and terms of the guarantees and warranties required by the Contract Documents shall not in any manner be affected by any delay in the commencement, progress or completion of the Work, regardless of the cause therefore.
- 3.5.6 The foregoing guarantees and warranties shall not shorten any longer warranty or liability period provided for by law or in the Contract Documents or otherwise received from the Contractor or any Subcontractor, material supplier or manufacturer, nor supersede the terms of any special warranty given by the Contractor, nor shorten any period of the Contractor's legal liability for defective Work, but shall be in addition thereto.
- 3.5.7 Notwithstanding anything to the contrary contained herein with respect to warranties, it is understood and agreed that the foregoing warranties and guarantees shall not affect, limit or impair the Owner's right against the Contractor with regard to latent defects in the Work which do not appear within the applicable warranty period and which could not, by the exercise of reasonable care and due diligence, be ascertained or discovered by the Owner within such warranty period. The Contractor shall correct and cure any such latent defects which are reported to the Contractor by the Owner in writing within ninety (90) days after such latent defect first appears or could, by the exercise of reasonable care and due diligence, be ascertained or discovered by the Owner.
- 3.5.8 Neither the acceptance of any of the Work by the Owner, in whole or in part, nor any payment, either partial or final, by the Owner to the Contractor, shall constitute a waiver by the Owner of any claims against the Contractor for defects in the Work, whether latent or apparent, and no such payment or acceptance of the Work by the Owner shall release or discharge the Contractor of the Contractor's surety, if any, from any such claims for breach of such warranties.

- 3.5.9 Upon completion of the Work, the Contractor shall furnish the Owner with all written warranties, guarantees, operating manuals, all shop drawings and submittals used in the project relative to equipment installed, and if requested by the Architect, a complete set of reproducible drawings with all field changes noted on them relating to the improvements constructed.
- 3.5.10 If required by the Owner or the Architect, the Contractor shall deliver to the Owner a signed affidavit stating that the Work has been constructed in accordance with the Contract Documents. If such affidavit is required, final payment or a final certificate for payment shall not be tendered until such affidavit has been delivered to the Owner.

**3.6 TAXES**

- 3.6.1 ADD the following new Subparagraph:

Material and properties purchased by contracts with the Owner that become a permanent part of the structure or facilities constructed are not subject to the Indiana Gross Retail Tax (Sales Tax). The Contractor shall obtain a copy of the Owner's exemption certificate and then issue copies of this certificate to his suppliers when acquiring materials and properties for use on the Project. The Contractor shall enforce this exemption clause for his purchases and for those of his Subcontractors.

**3.8 ALLOWANCES**

Refer to Section 01 21 13 - Cash Allowances for further provisions on this subject.  
Refer to Section 01 21 16- Contingency Allowance for further provisions on this subject.

**3.12 SHOP DRAWINGS, PROJECT DATA AND SAMPLES**

Refer to Section 01 33 00 - Submittal Procedures for further provisions on this subject.

**3.13 USE OF SITE**

ADD the following new Subparagraphs 3.13.1 and 3.13.2:

- 3.13.1 If the Owner requires the contractor to relocate materials or equipment which have been stored on the Site or within the Project, the Contractor shall relocate such materials or equipment at no additional cost to the Owner.
- 3.13.2 The Contractor is solely responsible for its Site access. The Contractor shall keep all roads, walks, ramps and other areas on and adjacent to the Site in good working order and condition and free from obstructions which might present a hazard to or interference with traffic or the public. When construction operations necessitate the closing of traffic lanes, the Contractor shall be responsible for arranging such closings in advance with the authorities having jurisdiction, the Owner, and adjacent property Owners. The Contractor shall provide adequate barricades, signs and other devices for traffic guides and public safety. Contractor shall maintain all adjacent streets to that Project in a clean condition and shall clean all dirt and mud from the Project and from such adjacent street on a daily basis.

**3.14 CUTTING AND PATCHING**

Refer to Section 01 73 29 - Cutting and Patching for further provisions on this subject.

**3.15 CLEANING UP**

Refer to Section 01 74 23 - Cleaning for further provisions on this subject.

**ARTICLE 4 – ARCHITECT**

**4.2 ADMINISTRATION OF THE CONTRACT**

ADD the following new Subparagraphs 4.2.2.:

- 4.2.2.1 The Owner is entitled to reimbursement from the Contractor for amounts paid to the Architect for site visits made necessary by the fault of the Contractor or by defects or deficiencies in the Work.

**ARTICLE 6 - CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS**

**6.2 MUTUAL RESPONSIBILITY**

ADD the following new Subparagraphs 6.2.6 and 6.2.7:

- 6.2.6 No Contractor, other Contractor, or Subcontractor, shall be entitled or permitted to sue or make a claim against the Owner or the Architect on account of any delay, disruption or acceleration or damage related thereto. If, however, the Owner or the Architect is sued or receives a claim from a Contractor or other Contractor on account of any alleged delay, disruption, interference or acceleration or damage related thereto caused, or alleged to be caused, in whole or in part, by the Contractor, the Contractor shall defend and indemnify the Owner and the Architect therefore, and reimburse them for their attorney's fees, costs and expenses.
- 6.2.7 Inasmuch as the completion of the Project within the Contract Time is dependent upon the close and active cooperation of all those engaged therein, it shall be expressly understood and agreed that the Contractor shall lay out and install its Work at such time or times and in such manner as not to delay, interfere, or disrupt the Work of others.

**ARTICLE 7 - CHANGES IN THE WORK**

**7.1 GENERAL**

Add the following new Subparagraphs 7.1.4 and 7.1.5:

- 7.1.4 Consultants to Architect or Owner:
1. Consultants to Architect or Owner shall have NO authority to modify Contract requirements in the Scope of Work or Contract Time.
  2. Consultants to Architect or Owner shall have no direct communication with Contractor or subcontractors, suppliers and vendors to Contractor without the express consent of the Architect.
  3. Any direct communication authorized by the Architect shall be for clarifications of the Work only and shall not act to authorize any changes in the Scope of Work, Contract Sum or Contract Time.
- 7.1.5 The overhead, profit and commission percentages included in a Change Order or Construction Change Directive must not exceed the maximums given at the end of this paragraph, and will be considered to include, but not be limited to, insurance (other than Workman's Compensation Insurance, FICA, Medicare and FUTA), bonds, small tools, incidental job burdens, supervisory expense, project management expense, clerical expense, preparatory expense and general office expense. Workmen's Compensation Insurance, and employment taxes under FICA, Medicare and FUTA are to be itemized separately and no percentage for overhead, profit and commission will be allowed on them. The percentages for overhead, profit and commission will be negotiated and may vary according to the nature, extent and complexity of the work involved, but not to exceed the maximum percentages shown. Not more than three percentages

will be allowed regardless of the number of tiers of sub-contractors; that is, the markup on work subcontracted by a subcontractor will be limited to one overhead percentage and one profit percentage in addition to the prime contractor’s commission percentage. On proposals covering both increases and decreases in the amount of the contract, the overhead, profit, and where applicable, commission, will be computed on the net change only. On proposals for decreases in the amount of the contract, the overhead and profit shall be added to the decrease in direct cost:

<i>Description</i>	<i>Overhead</i>	<i>Profit</i>	<i>Commission</i>
To Contractor on work performed by other than his/her own forces	0%	0%	10%
To Contractor for that portion of work performed by his/her own forces	10%	10%	0%
To Sub-contractor for that portion of work performed by his/her own forces	10%	10%	0%

**7.3 CONSTRUCTION CHANGE DIRECTIVES**

Add the following new Subparagraph to 7.3.4.6:

- 7.3.4.6 Amount for overhead and profit as set forth in this Agreement shall be in accordance with the schedule set forth in Article 7.1.5.

**ARTICLE 8 - TIME**

**8.2 PROGRESS AND COMPLETION**

ADD the following Subparagraphs 8.2.4, 8.2.5 and 8.2.6:

- 8.2.4 Whenever it may be useful or necessary for the Owner to do so, the Owner may take possession of the Project or parts thereof at any time that it is determined by the Architect that the Work has been completed to a point where the Owner may occupy or use said Project, or parts thereof, without interference, delay or disruption to the continued execution of the work. The Owner may at such time install furnishings and equipment as it sees fit or may at its discretion hire other Contractors for this purpose. Such use or occupation shall not relieve the Contractor of these warranty obligations as provided in the Contract Documents nor shorten their commencement dates.
- 8.2.5 Except as otherwise provided herein, substantial completion of work shall be within the number of calendar days stated by the Contractor on the Proposal Form and shall become a contract obligation. The time for completion of the work shall be extended for the period of any excusable delay, which term shall include only those delays directly caused by any of the reasons enumerated in the following subparagraph 8.3.2 and 8.3.3.
- 8.2.6 Completion shall be understood to be substantially complete for the Owner’s beneficial occupancy, with only minor Punch List” items yet to be completed and items such as balancing of heating system, etc., which cannot be completed due to climatic conditions.

**8.3 DELAYS AND EXTENSIONS OF TIME**

DELETE Subparagraph 8.3.1 in its entirety and substitute the following:

- 8.3.1 If the Work is delayed, disrupted, interfered with our constructively accelerated (hereinafter and collectively referred to as "Hindrance" or "Hindrances") at any time by any act or neglect of the Owner, the Architect, other Contractors or Subcontractors, or any of their employees, or by changes ordered in the Work, fire, unusual delay in transportation, unavoidable casualties, or other cause beyond the Contractor's control as elsewhere provided in the Contract Documents, then the Contract Time shall be increased by Change Order for such reasonable time as the Architect may determine.

DELETE Subparagraph 8.3.3 in its entirety and substitute the following:

- 8.3.3 Whether or not any Hindrance shall be the basis for an increase in the Contract Time, the Contractor shall have no claim against the Owner or the Architect for an increase in the Contract Sum, nor a claim against the Owner or the Architect for a payment or allowance of any kind for damage, loss or expense resulting from any Hindrance. As between the Contractor and the Owner, except for acts constituting intentional or grossly unreasonable interference by the Owner or the Architect with the Contractor's performance of the Work when such acts continue after the Contractor's written notice to the Owner of such interference or disruption, the Contractor shall assume the risk of all Hindrances arising from any and all causes whatsoever, including without limitation, those due to any act or omission of the Owner or the Architect, except only to the extent that an increase to the Contract Time may be due to the Contractor as expressly provided for in this Subparagraph. The Contractor shall bear all costs, expenses and liabilities in connection with Hindrances and all costs, expenses and liabilities of any nature whatsoever, whether or not provided for in the Contract Documents, shall conclusively be deemed to have been within the contemplation of the parties. The only remedy available to the Contractor shall be an increase in the Contract Time.

ADD the following new Subparagraphs 8.3.4, 8.3.5 and 8.3.6:

- 8.3.4 The Owner's exercise of any of its rights under the Contract Documents, including but not limited to its rights regarding changes in the Work, regardless of extent or number of such changes, performance of separate Work or carrying of the Work by the Owner or the Architect, directing overtime or changes in the sequence of the Work, withholding payment or otherwise exercising its rights hereunder, or exercising any of its remedies of suspension of the Work or requirements of correction or re-execution of any defective Work shall not, under any circumstances, be construed as intentional interference or disruption with the Work.
- 8.3.5 No increase in the Contract Time shall be granted for any Hindrance resulting from unsuitable ground conditions, inadequate forces, the failure of the Contractor to place orders for equipment or materials sufficiently in advance to insure their delivery when needed, or any Hindrance resulting from interruptions to or suspensions of the Work so as to enable others to perform their Work, other than as specifically provided elsewhere in the Contract Documents.
- 8.3.6 If the Contractor causes a Hindrance to the Work so as to cause any damage to the Owner or any damages for which the Owner may become liable, the Contractor shall be liable therefore and the Owner may withhold from any amount yet due the Contractor the amount reasonably required to compensate the Owner for such damages, if the amount of compensation exceeds the amount yet paid to the Contractor, the Contractor shall pay the difference to the Owner immediately upon demand.

## **ARTICLE 9 - PAYMENTS AND COMPLETION**

### **9.2 SCHEDULE OF VALUES**

Add the following new Subparagraph 9.2.1:

- 9.2.1 Contractor shall obtain written concurrence in such schedule of values from the Surety furnishing any Performance Bond and Labor and Materials Payment Bond. Copy of written concurrence by the Surety shall be submitted by the time of written submission.

### **9.3 APPLICATIONS FOR PAYMENT**

ADD the following new Subparagraphs: 9.3.1.3, 9.3.1.4, 9.3.1.5, and 9.3.1.6:

- 9.3.1.3 The Owner will pay ninety-five percent (95%) of the amount due the Contractor on Account of progress payments for the entire period of the Contract.
- 9.3.1.4 A subcontractor shall be paid ninety-five percent (95%) of the earned sum by the Contractor for the entire period of the Contract.
- 9.3.1.5 The Owner, Contractor and the Architect/Engineer shall cooperate to the end that retentions shall be paid promptly when all conditions of the Contract have been met.
- 9.3.1.6 Applications for payment, subsequent to the first application, shall be accompanied by Waivers of Lien from the Contractor and all major subcontractors, suppliers, and vendors.

ADD the following at the end of Subparagraph 9.3.3:

- 9.3.3 This provision shall not be construed as relieving the Contractor from the sole responsibility and expense for the care and protection of materials and Work upon which payments have been made or the restoration of any stolen, destroyed or damaged Work, or as a waiver of the right of the Owner to require the fulfillment of all of the terms of the Contract Documents.

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

ADD the following new Subparagraph 9.5.5:

- 9.5.5 If any claim or lien is made or filed with or against the Owner, the Architect, the Project, or the Contract Sum by any persons or entity claiming that the Contractor, Subcontractor, or other person for whom the Contractor is responsible has failed to make payment for labor, services, materials, equipment, taxes or other items or obligations furnished or incurred in connection with the Work, or if at any time there shall be any evidence of such non-payment of any claim or lien which is chargeable to the Contractor, or if the Contractor, Subcontractor, or other person or entity for whom the Contractor is responsible caused damage to any Work on the project, or if the Contractor fails to perform or is otherwise in default under any terms or provisions of the Contract, the Owner shall have the right to retain from any payment then due or thereafter an amount which it deems sufficient to (1) satisfy, discharge and/or defend against such claim, lien, or action brought for judgment which may be recovered thereon, (2) make good any such non-payment, damage, failure, or default (3) compensate the Owner and Architect for any and all losses, liabilities, damages, costs, and expenses, including legal fees and costs, which may be sustained or incurred by either or both of them in connection therewith. The Owner shall have the right to apply and charge against the Contractor retained amounts as may be required for these purposes. If the amount retained is insufficient, the Contractor shall be liable for the difference and pay it directly to the Owner.

### **9.6 PROGRESS PAYMENTS**

DELETE Subparagraph 9.6.6 in its entirety and replace with the following:



- 9.6.6 No recommendation or certification of a progress payment, any progress payment, final payment, or any partial or entire use or occupancy of the Project by the Owner, shall constitute acceptance of any Work not in accordance with the Contract Documents.

ADD the following new Subparagraph 9.6.8:

- 9.6.8 On all Contracts totaling two hundred thousand dollars (\$200,000.00) or more, an escrow account shall be established in a financial institution, as escrow agent, selected by mutual agreement between the Contractor and the Owner at the time Contracts are executed. The establishing of the escrow account shall be in compliance with the requirement of Indiana Code 36-1-12-14.
1. The Escrow Agent shall invest all escrowed principal in obligations selected by the Escrow Agent.
  2. The Escrow Agent shall hold the escrowed principal and income until receipt of notice from the Owner and the Contractor, or the Contractor and the Subcontractor, specifying the part of the escrowed principal to be released from the escrow and to whom that portion is to be released. After receipt of the notice, the Escrow Agent shall remit the designated part of escrowed principal and the same proportion of then escrowed income.
  3. The Escrow Agent shall be compensated for its services as the parties may agree in the amount not to exceed fifty percent (50%) of the escrowed income of the escrow amount.
  4. See Section 9.10 - Final Completion and Final Payment, for provisions of retainage in escrow and final payment.

## **9.9 PARTIAL OCCUPANCY OR USE**

- 9.9.1 DELETE the phrase "when such portion is designated by separate agreement with the Contractor" in line 2; DELETE the last two sentences in Subparagraph 9.9.1.

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

- 9.10.1 ADD the following sentence at the end of the Subparagraph:

"Provided, however, that final payment shall not be due and payable until sixty-one (61) days after the Work has been completed and the Contract fully performed".

- 9.10.4 ADD the following at the end of Subparagraph 9.10.4:

"Final payment constituting the unpaid balance of the Contract Sum shall be paid to the Contractor in full, including any retainage *or escrowed principal and escrowed income by the escrow agent*, no less than sixty-one (61) days following the date of substantial completion. If at any of that time there are any remaining uncompleted items, an amount equal to two hundred percent (200%) of the value of each item as determined by the Architect shall be withheld until said items are completed and a Final Certificate of Payment is issued by the Architect".

DELETE Subparagraph 9.10.5 in its entirety and replace with the following:

- 9.10.5 The Contractor's obligation to perform the Work and complete the Project in accordance with the Contract Documents shall be absolute. Neither approval of any progress or final payment, nor the issuance of a Certificate of Substantial Completion, nor any payment by the Owner to the Contractor under the Contract Documents, nor any use or occupancy of the Project or any part thereof by the Owner, nor any act of acceptance by the Owner shall constitute an acceptance of Work not in accordance with the Contract Documents, nor does it constitute a waiver of any claims that arise from: (1) liens, claims, security interests or encumbrances arising out of the contract or settled; or (2) terms of any warranties in favor of the Owner that are provided pursuant to the Contract Documents or otherwise.

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

DELETE Subparagraph 10.1 in its entirety and replace with the following:

10.1 The Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work and in connection with the Contractor's performance of any work other than the Work.

**10.2 SAFETY OF PERSONS AND PROPERTY**

10.2.1 REPLACE the words "reasonable" with the phrase "all necessary" in both instances in line 1.

ADD the following to Subparagraph 10.2.1:

- .4 Protect excavation, trenches, buildings and grounds from all water damage. Furnish necessary equipment to provide this protection during the term of the Contract. Construct and maintain necessary temporary drainage to keep excavations free of water.
- .5 Provide protection of the Work against wind, storms, cold and heat. At the end of each day, cover new Work which may be damaged;
- .6 Provide adequately-engineered shoring and bracing required for safety and for the proper execution of the Work and have same removed when the Work is completed; and
- .7 Protect, maintain and restore benchmarks, monuments and other reference points affected by the Work. If benchmarks, monuments or other reference points are displaced or destroyed, points shall be re-established and markers reset under the supervision of a licensed surveyor, who shall furnish certificates of its work.

10.2.5 INSERT the work "solely" after the word "loss" in the clause which reads "except damage or loss attributable to acts or omissions of the Owner or Architect...".

ADD the following new Subparagraphs 10.2.9, 10.2.10 and 10.2.11:

10.2.9 "The Project is designed to be self-supporting and stable after the Work is fully completed. Except as otherwise provided, it is solely the Contractor's responsibility to determine erection procedures and sequences, and to insure the safety of the Project and its component parts during erection. This includes, but is not limited to, the addition or modification of whatever temporary bracing, guys or tie downs may be necessary. Such material shall be removed after completion of the Work".

10.2.10 The Contractor shall conform with the United States Department of Labor and the State Division of Labor Occupational Safety and Health Administration regulations.

10.2.11 The Contractor shall have the Hazard Communication Program in effect with all their personnel working on the project. All Material Data sheets should be current as required by law.

**ARTICLE 11 - INSURANCE AND BONDS**

**11.1 CONTRACTOR'S INSURANCE AND BONDS**

11.1.1 ADD the following at the end of the subparagraph:

- .1 The form of such bonds shall be acceptable to Owner and in compliance with **Indiana** Statute:
- .2 The Bonds shall remain in effect for a period of not less than one (1) year following the date of Substantial Completion and/or time required to resolve any items of incomplete Work and the

- payment to any owed amounts, whichever time period extends the longer;
- .3 The amount of the Performance Bond and the Labor and Material Bond shall each be 100% of the Contract Sum; and
  - .4 The Contractor shall require the attorney in fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of his power of attorney indicating the momentary limit of such power.
  - .5 The required insurance shall be written for not less than the limits stated in the Owner's Instructions to the Architect (AIA Document G612, Part B) as included in the Project Manual or as required by law, whichever is greater and with the Owner, Architect, Consultants, and Engineers or their assigned names as "Additional Insureds" "Primary" on the insurance policy. Coverages shall be maintained without interruptions from date of commencement, of the work, until date of final payment and termination of any coverage required to be maintained after final payment.

Add the following new Subparagraph 11.1.5 and 11.1.6:

- 11.1.5 The Contractor shall furnish one copy of Certificate of Insurance and Bonds required of each copy of the agreement, which shall specifically set forth evidence of all coverages required. Furnish Owner copies of any endorsements subsequently issued amending coverage limits.
- 11.1.6 The Contractor shall keep the surety informed of the progress of the Work, changes in the Work, requests for release of retainage, request for final payment and any other information required by the surety.

## **11.2 OWNER'S INSURANCE**

- 11.2.1.1 Any errors and omissions insurance maintained by the Architect or the Architect's Consultants shall not serve to exclude the Architect or Architect's Consultant from the mutual waiver of rights outlined in paragraph 11.3.7. The waiver of rights is given in exchange for property insurance covering the work.
- 11.2.2 Change the second sentence to include after sub-subcontractors: "...and Architects and Engineers of Record".

## **ARTICLE 13 – MISCELLANEOUS PROVISIONS**

### **13.2 SUCCESSORS AND ASSIGNS**

- 13.2.1 DELETE the last two sentences of this Subparagraph.  
ADD the following as the last two sentences of the Subparagraph:  
  
"Contractor shall not assign the Contract or any portion thereof without the written consent of Owner. Owner is entitled to assign the Contract or any portion thereof".
- 13.2.2 DELETE this Subparagraph in its entirety.

### **13.4 TESTS AND INSPECTIONS**

- 13.4.7 ADD the following new Subparagraph:

Neither the observations of the Architect, its administration of the Contract Documents, nor inspections tests or approvals by persons other than the Contractor shall relieve the Contractor from its obligation to perform the Work in accordance with the Contract Documents.

13.7 ADD the following new Paragraph:

The Owner will require the Contractor to conduct testing for drugs and alcohol for all workers on the project. Drugs and alcohol shall be as defined by Indiana Code 35-48-4-4.

"The Contractor shall provide, if awarded the right to provide services or materials under this agreement, a list of all personnel used by or on behalf of the Contractor, whether employed by them or not, who will be engaged in the providing of services or delivery of materials and goods.

With said list of persons shall be provided written evidence of drug and alcohol testing with respect to all persons on the list dated within seven (7) days of the said date of the Contract.

Contractor agrees that no person will be providing services who has tested positive to any of the items included and shall be banned from the jobsite for the duration of the project.

Continued testing shall be conducted throughout the project duration every six months maximum. Any persons testing positive shall be removed immediately from the site and shall be banned from the jobsite for the duration of the project.

The Contractors and their employees shall meet all State and Federal statutory requirements".

13.8 ADD the following new Paragraph:

The Contractor and all its subcontractors are required to comply with all provisions of Indiana Code 22-5-1.7 to affirm that it does not knowingly employ or contract with an unauthorized alien or retain an employee or contract with a person that they subsequently learn is an unauthorized alien.

The Contractor is required to enroll in and verify the work eligibility status of all newly hired employees of the contractor through the E-Verify program as defined in IC 22-5-1.7-3.

The Contractor is not required to verify the work eligibility status of all newly hired employees of the contractor through the E-Verify program if the E-Verify program no longer exists and the Contractor signs an affidavit affirming that the Contractor does not knowingly employ an unauthorized alien.

13.9 ADD the following new Paragraph:

There shall be no firearms allowed on the project site or anywhere within the project property.

Exceptions would be made for law enforcement officials, security forces required elsewhere by these Specifications, or per other requirements or allowances specifically made by the Owner.

13.10 ADD the following new Paragraph:

There shall be no smoking or tobacco use allowed within the buildings, on the project site or anywhere within the project property. Violators shall be removed from the project immediately.

Any construction materials in contact with or exposure to such tobacco products shall be removed and replaced with new, at the Contractor's expense.

Additional requirements and levels of protection are afforded to Public Buildings in compliance with Indiana Code 16-41-37, and include an enclosed structure or part of an enclosed structure that is one of the following:

- (1) Occupied by an agency of state or local government.
- (2) Used as a classroom building or a dining area at a state educational institution (as defined in IC 20-12-0.5-1).
- (3) Used as a public school (as defined in IC 20-18-2-15).
- (4) Licensed as a health facility under IC 16-21 or IC 16-28.
- (5) Used as a station for paid firefighters.
- (6) Used as a station for paid police officers.
- (7) Licensed as a child care center or child care home or registered as a child care ministry under IC 12-17.2.
- (8) Licensed as a hospital under IC 16-21 or a county hospital subject to IC 16-22.
- (9) Used as a provider's office.
- (10) School bus (as defined in IC 16-41-37-2.3).

#### **ARTICLE 14 - TERMINATION OR SUSPENSION OF THE CONTRACT**

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

DELETE Subparagraph 14.1.1 in its entirety and replace with the following::

14.1.1 If the Work is stopped for a period of sixty (60) days under an order of any court or other public authority having jurisdiction, or as a result of any act of government such as a declaration of a national emergency making material unavailable, through no act or failure to act of the Contractor or a Subcontractor or their agents or employees or any other persons performing any of the Work under a contract with the Contractor, and the Owner has not otherwise suspended, delayed, disrupted or interrupted the Work in accordance with the Subparagraph, then the Contractor may, upon fourteen (14) days' written notice to the Owner, terminate the Contract, and recover from the Owner payment for all Work executed to date. Recovery by the Contractor of lost anticipated profit and overhead and other consequential and incidental damages is hereby specifically excluded.

14.1.3 DELETE all words following the words "payment for" and ADD the following after "payment for":

"all work executed to date. Recovery by the Contractor of last anticipated profit and overhead and other consequential and incidental damages is hereby excluded."

ADD the following new Subparagraph 14.1.5:

14.1.5 "The Owner shall not be liable to the Contractor for the Owner's failure to perform its obligations set forth herein if such performance is prevented or interrupted by war (including the consequences thereof), fire, tornado, hurricane, windstorms, labor problems, fuel or transportation shortages, civil unrest, governmental action, or any other natural or economic disaster or cause which is reasonably beyond the control of the Owner ("Force Majeure"). If the estimated duration of the Force Majeure is one year or more, the Contractor shall have the option to terminate this Contract upon thirty (30) days' written notice. In the event that the estimated duration of the Force Majeure is less than one year, the Contract Time shall be increased by the same length of time as the Force Majeure persisted."

**14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE**

14.3.1 DELETE this Subparagraph in its entirety.

14.3.2 DELETE this Subparagraph in its entirety.

**14.4 TERMINATION BY THE OWNER FOR CONVENIENCE**

DELETE Subparagraph 14.4.3 in its entirety and substitute the following:

14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; reimbursable costs actually incurred, including costs attributed to termination of Subcontracts; and an amount representing six percent (6%) of the amount of the work not executed".

**ARTICLE 16 - EQUAL OPPORTUNITY**

16 ADD this new Article 16, including Paragraphs and Subparagraphs as follows:

**16.1 POLICIES OF EMPLOYMENT**

16.1.1 The Contractor and the Subcontractor shall not discriminate against any employee or applicant for employment because of race, religion, color, age, sex or national origin, in connection with, but not limited to employment, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff or termination, rates or pay or other forms of compensation and selection for training including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth its policies of non-discrimination consistent with this Article.

END OF SECTION 00 73 01

SECTION 01 11 00 - SUMMARY OF WORK – SINGLE CONTRACT

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Section Includes:
  - 1. Work covered by the Contract Documents.
  - 2. Contractor's use of premises.
  - 3. Coordination of work and trades.
  
- B. Project is being bid with construction work under one General Contract for all trades.

1.02 WORK COVERED BY CONTRACT DOCUMENTS

- A. Provide and pay for all materials, labor, services, equipment, licenses, permits, fees, taxes, and other items necessary for the execution, installation and completion of Work indicated in Contract Documents.
  
- B. The Work includes coordination with Architect, Owner's Representative, Owner's separate contractors, material suppliers and vendors.

1.03 CONTRACTOR'S USE OF PREMISES

- A. Contractor shall limit his use of premises for work and storage, to allow for Owner's occupancy as identified in this Section.
  
- B. Assume full responsibility for protection and safekeeping of products stored on premises.
  - 1. Move any stored products that interfere with operations of Owner or other Contractor.
  - 2. Obtain and pay for use of additional storage or work areas needed for operations.
  - 3. Available space for construction field offices and storage sheds is limited to the project site. Contractor must arrange for off site storage as required.
  
- C. Contractor shall allow for any other work outside of this contract, whether by Owner's personnel or Contractors under Owner's separate contracts, to proceed without delay or impediment.

1.04 COORDINATION

- A. Schedule, manage and expedite all work under his Contract, coordinating his work with his sub-contractors, material suppliers, vendors, and trades so that no conflicts of timing or location occur.
  - 1. Work shall progress according to approved progress schedule.  
Schedule dates for incorporation of work, and identify all critical path events and dates.
  - 2. Coordinate and provide all floor, ceiling, roof, and wall sleeves.
  - 3. Provide all cutting, fitting or patching required.
  
- B. Keep Architect informed on the progress of the work.
  - 1. Close or cover no work until duly inspected and approved.
  - 2. Uncover un-inspected work and after approval, repair and/or replace all work at no cost to Owner.
  - 3. Notify Architect at least 7 days in advance of utility connections, utility shut-offs, mechanical equipment and oil line cutovers, street or alley closings to allow ample time to receive Owner's written approval of procedure to be followed.
  - 4. Coordinate all operations with the Architect and Owner. Complete in the minimum amount of time.
  
- C. Protection:
  - 1. Do not close or obstruct streets, entrance drives, sidewalks or other facilities without permission of the Owner and local authorities.

2. Conduct operations with minimum interference.
3. Furnish, erect and maintain barricades, warning lights, signs and guards as may be required.

1.05 OWNER OCCUPANCY

- A. Site will be vacated by Owner prior to Notice-to-Proceed for Contractor's complete use of site during construction.
- B. Provide temporary heating and ventilation, temporary dust partitions, plastic sheeting, plywood sheeting, and any other means required to protect all elements of existing building from damage or deterioration during construction.

1.06 PARTIAL OCCUPANCY

- A. Prior to occupancy, execute Certificate of Substantial Completion for designated area.
- B. Contractor provide: Access for Owner's personnel.
- C. Owner provides, upon occupancy:
  1. Maintenance
  2. Operation of HVAC, electrical systems.
  3. Security.

1.07

1.08 CONSTRUCTION SCHEDULING AND PHASING

- A. Owner intends to award the Contract and issue a Notice to Proceed within 10 days after bid opening.
- B. Contractor shall mobilize on site and begin work immediately thereafter.

END OF SECTION 01 11 00



SECTION 01 14 00 - GENERAL CONSTRUCTION REQUIREMENTS

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Section Includes:
1. Special Provisions.
  2. Commencement Activity.
  3. Quality Control.
  4. Pre-final and Final/Occupancy Inspections
  5. Project Closeout.

1.02 SPECIAL PROVISIONS

- A. Project:  
The Project is the total construction for which the Contractor is responsible, including all labor, materials and equipment used or incorporated in such construction.
- B. Work:  
The Work comprises the completed construction designed under the Project and includes labor necessary to produce such construction, and materials and equipment to be incorporated in such construction.
- C. Contract Documents includes the following (See General Conditions 1.1.1 for definition):
1. Project Manual. (See General Conditions 1.1.7 for definition) The Project Manual is composed of the following:
    - a. The Bidding Requirements.
    - b. The Contract Forms.
    - c. The Conditions of the Contract.
    - d. The Specifications. (See General Conditions 1.1.6 for definition)
  2. Drawings (See General Conditions 1.1.5 for definition)
  3. Addenda (See Instructions to Bidders 1.3 for definition)
  4. Other Documents as identified in the Contract for Construction, the General Conditions of the Contract for Construction, and Supplementary General Conditions
- D. Demolition:  
All existing Improvements on the site indicated on the Drawings to be demolished, shall be removed by Contractor. Use such methods as required to complete the work in compliance with all governing authorities and utility company requirements. All existing utility connections shall be disconnected, properly capped and removed by the Contractor. Complete removal of existing foundation walls or footings is required under new construction or other new foundations. Remove all below-grade wood and metal. Any existing basements, cisterns and/or other below grade voids shall be filled with compatible fill material suitable for proposed constructions and compacted per specific requirements. Completely remove cisterns located under new construction. All debris, rubbish, salvage and other materials shall be removed from the site. Protect all adjacent properties and structures, and existing buildings from damage.
- E. Utilities:  
It is the Contractor's responsibility to coordinate with the appropriate utility companies actual location of mains serving the site and route the building utility lines in the most direct route.
1. The location of utilities existing in the building as indicated on the Drawings may be modified by the Contractor to accommodate a more direct route to the utility connection location with written approval from Architect.

F. Permits and Fees:

The Contractor is responsible for verifying any and all fees required from all utilities, agencies and authorities having jurisdiction. The Contractor shall obtain and pay for the Building Permit and all other permits and governmental fees, licenses and inspections required, whether specifically referenced or not. The Contractor is to include in the bid the cost of all charges payable to State, local or special community development agencies and any additional fees as required for the completion of the project, including, but not limited to:

1. Water company connection fees and charges
2. Electrical company charges.
3. Telephone company charges.
4. Sanitary sewer connection fees and charges.
5. Gas Company charges.
6. Fire sprinkler connection fees and charges.

1.03 COMMENCEMENT ACTIVITY

- A. Evidence that the Contractor has started procurement of materials, preparation and submission of shop drawings, preparation of subcontracts and other preparatory work must satisfy the requirement that work began upon receipt of Notice to Proceed.

1.04 QUALITY CONTROL

A. Testing:

1. Employ the services of an independent testing laboratory to take samples, perform tests and make inspections. The costs for such laboratory and tests shall be borne by the Contractor.
2. Submit testing reports as per Architect.
3. Refer to Section 01 45 00-Quality Control for additional requirements.

1.05 PRE-FINAL AND FINAL/OCCUPANCY INSPECTIONS

- A. The Contractor is to notify in writing, the Architect, that the work is complete for a Pre-Final Inspection (also referred to as "Final Punchlist Inspection". The Contractor must provide the Architect at least 10 calendar days advance notice.
- B. The Contractor is to diligently complete all punchlist items before a Final/Occupancy Inspection is scheduled.

1.06 PROJECT CLOSEOUT

A. Cleaning during construction:

1. The premises and the job site shall be maintained in a reasonable neat and orderly condition and kept free from accumulations of waste materials and rubbish during the entire construction period. Remove crates, cartons, and other flammable waste materials or trash from the work areas at the end of each working day. Do not allow debris to blow onto adjoining properties. Respond immediately to request from adjoining property owners to remove any debris that does manage to show up on adjoining properties.
2. Maintain the project in clean condition until the Owner accepts the building.
3. Refer to Section 01 74 23 - Cleaning for additional requirements.

B. Closeout Procedures:

Refer to Section 01 77 00 - Closeout Procedures for additional requirements.

C. Closeout Submittals:

1. Before the project can be closed out, the Contractor shall have provided all submittals required by the Contract Documents. All submittals required by the Contract Drawings or Specifications shall be sent

to the Architect for review and coordination, in accordance with the requirements of the respective Drawing or Specification section. Any items that the Architect determines are incomplete or incorrect shall be corrected and resubmitted.

2. Refer to Section 01 78 00 - Closeout Submittals for additional requirements.
3. Refer to Section 01 78 46 - Closeout Maintenance Materials for additional requirements.

D. Retainage:

1. The Architect will assign a monetary value to all punchlist items not completed, and to all required submittals not received, as of the date of "Final Acceptance" and an amount equal to 200 percent of the total value of those items shall be retained and/or deducted from the Contractor's final payment until the Contractor demonstrates to the Architect's satisfaction that such items have been completed or corrected. Refer to the General Conditions and Supplementary General Conditions for additional information regarding retainage.

END OF SECTION 01 14 00

SECTION 01 21 16 - CONTINGENCY ALLOWANCE

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Section Includes:  
1. Contingency Allowance in Contract Sum.

1.02 CONTINGENCY ALLOWANCE

- A. Allow a lump sum fee of **\$35,000**.
- B. To be included in the Base Bid of Contract.
- C. Itemize Contingency Allowance on Application and Certificate for Payment and Schedule of Values.
- D. Contingency Allowance to be used for unforeseen conditions encountered during the work.
- E. Do not include any contractor's additional costs in bid.  
Adjustments to contingency allowance will include labor, material, transportation, overhead and profit.  
All costs for these items to be included in all proposals to Architect for adjustments to contract.
- F. Use Funds in Contingency Allowance only on written agreement between Owner, Architect and Contractor.
- G. All Proposals shall be authorized by the Architect prior to execution and recorded in Contractor's as-builts and Architect's project Record Documents.
- H. Adjustment to Allowances will be made by Change Order. Any unused amounts to be credited back to the Owner.

END OF SECTION 01 21 16

SECTION 01 29 73 - SCHEDULE OF VALUES

1.01 REQUIREMENTS INCLUDES

- A. Section Includes:
  - 1. General Requirements.
  - 2. Format and Content.

1.02 GENERAL REQUIREMENTS

- A. Submit to the Architect/Engineer a Schedule of Values allocated to the various portions of the Work.
- B. Upon request of the Architect/Engineer, support the values with data which will substantiate their correctness.
- C. The Schedule of Values, unless objected to by the Architect/Engineer, shall be used as the basis for the Contractor's Application and Certificate for Payment.

1.03 FORMAT AND CONTENT

- A. Type schedule on AIA Document G703, Continuation Sheet for Application and Certificate for Payment. Identify schedule with:
  - 1. Title of Project as listed on cover of Project Manual
  - 2. Architect project number.
  - 3. Name and Address of Contractor.
  - 4. Contract Designation.
  - 5. Date of submission.
- B. Schedule shall list the installed value of the component parts of the Work in sufficient detail, as determined by the Architect, to serve as a basis for computing values for progress payments during construction.
  - 1. Follow the table of contents of this Project manual as the format for listing component items.
  - 2. Identify each line item with the number and title of the respective major section of the specifications.
  - 3. Identify separate line items for all items for materials and labor.
  - 4. Identify further breakdown for any and all items as determined by the Architect.
- C. For Mechanical and Electrical Scope of Work, major products or operations are to be listed.
- D. For the various portions of the work:
  - 1. Each item shall include a directly proportional amount of the contractor overhead and profit.
  - 2. For items on which progress payments will be requested for stored materials, break down the value into:
    - a. The cost of the materials, delivered and unloaded, with taxes paid.
    - b. The total installed value.
- E. The sum of all values listed in the schedule shall equal the total Contract Sum.

END OF SECTION 01 29 73

SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

A. Section Includes:

1. Administrative and supervisory personnel.
2. Submittals.
3. Contractor quality control.
4. Coordination Drawings.
5. Project coordination.

B. Procedures for preparation, updating and submittal of Construction Progress Documentation.

1.02 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

A. Project Coordination Administrator: Contractor Representative experienced in administration, supervision, and quality control of building expansion and alteration construction, similar to Work of this Project, including mechanical and electrical work.

B. Project Field Superintendent:

1. Contractor Representative experienced in general field supervision of building construction, similar to Work of this Project, including mechanical and electrical work, to supervise, direct, inspect and coordinate Work of Contractor, subcontractors, suppliers and installers, and expedite Work to assure compliance with Construction Schedules.
2. Superintendent must read, write, and speak English fluently.
3. Superintendent must be present at the Project site whenever work is being performed. Superintendent must remain on the Project from Notice to Proceed to Substantial Completion. Do not change personnel without written permission from the Owner.

1.03 SUBMITTALS

A. Submit list of Contractor's principal staff assignments, including Project Coordination Administrator, Project Field Superintendent, Quality Control Representative, and other personnel in attendance at site; identify their duties and responsibilities.

B. Submit all items for execution of Contract as listed in Section 00 43 93 – Contractor's Bid Submittal checklist.

C. Submit shop drawings, product data, and other required submittals, in accordance with Section 01 33 00 - Submittal Procedures, for review and compliance with Contract Documents, for field dimensions and clearances, for relation to available space, and for relation to Work by Owner or separate Contracts.

D. Submit Requests for Information and interpretation of Contract Documents in a timely manner and obtain replies from Architect in accordance with the Contract.

1.04 CONTRACTOR QUALITY CONTROL

A. Perform project quality control in accordance with requirements in the Contract.

B. Coordinate scheduling of inspection and testing required by individual specification Sections and in accordance with Section 01 45 00 - Quality Control.

1.05 COORDINATION DRAWINGS

- A. Prepare and distribute coordination drawings where close coordination is required for installation of Products and materials fabricated off-site by separate entities, and where limited space availability requires maximum utilization of space for efficient installation of different components. Show interrelationship of components shown on separate shop drawings. Indicate required installation sequences.

1.06 PROJECT COORDINATION

- A. Coordinate construction activities and work of all trades under various Sections of these Specifications and Work of Contract to facilitate orderly installation of each part of Work. Coordinate construction operations included under different Sections of Specifications and Contract that are dependent upon each other for proper installation, connection, and operation.
- B. Where installation of one part of Work is dependent on installation of other components, either before or after that part of Work, schedule construction activities in sequence required to obtain uninterrupted installation.
- C. Obtain drawings, manufacturer's product data, instructions, and other data to provide a complete and proper installation.
  - 1. Check field dimensions prior to installing products.  
Verify necessary clearances and means of access from equipment storage to final position.
  - 2. Make data and information available to trades involved.
- D. Ensure that utility requirements of operating equipment are compatible with building utilities. Coordinate Work of various specification Sections for installation and final connection of equipment.
  - 1. Assure that mechanical, plumbing, and electrical rough-ins have been properly located.
- E. Coordinate space requirements and installation of mechanical, plumbing, and electrical Work which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, conduits, and wiring, as closely as possible; make runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- F. Where availability of space is limited, coordinate installation of different components to ensure maximum accessibility for required maintenance, service, and repair.
- G. Provide for installation of items scheduled for future installation.
- H. Where necessary, prepare memoranda for distribution to each party involved outlining special procedures required for coordination. Prepare memoranda for Architect and separate contractors where coordination of their work is required.
- I. In finished areas, conceal pipes, ducts, conduits, and wiring in the construction. Coordinate locations of fixtures and outlets with finish elements.
- J. Coordinate completion and clean up of Work of separate Sections in preparation for completion of work per the Contract.
- K. After Owner occupancy of Project, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize to Owner.

END OF SECTION 01 31 00

SECTION 01 31 19 - PROJECT MEETINGS

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

A. Section Includes:

1. Contractor participation in pre-bid conference, pre-construction conferences, progress meetings, and pre-installation meetings.
2. Architect shall schedule and chair Project Meetings and prepare summary minutes for distribution by Contractor to all in attendance.

1.02 PRE-BID CONFERENCE

A. Architect will administer pre-bid conference to provide further understanding of Scope of Work.

B. Attendance:

1. Architect.
2. All prospective bidding Contractors, Subcontractors, Suppliers and Vendors.
3. Attendance is not required, but strongly encouraged.

C. Agenda:

1. Review Notice-to-Bidders.
2. Review Bid Requirements and Contractor's Bid Submittal Checklist.
3. Review Summary of Work.
4. Review Construction Document set.
5. Review Project Site (if necessary).
6. Questions and Answers.

D. Architect will notify all bidders as to time and place of Pre-Bid Conference.

1.03 PRE-CONSTRUCTION CONFERENCES

A. Architect will administer pre-construction conference.

B. Attendance:

1. Architect.
2. Owner's Representative.
3. Contractor's Project Manager.
4. Contractor's Job Superintendent.

C. Agenda:

1. Execution of Owner-Contractor Agreement.
2. Exchange of preliminary submittals.
3. Submission of executed bonds and insurance certificates.
4. Distribution of Contract Documents.
5. Submission of Schedule of Values. (If not required before hand).
6. Designation of personnel representing the parties in Contract.
7. Procedures and processing of Requests for Information, field decisions, submittals, substitutions, Applications for Payment, proposal requests, Change Orders, and contract closeout procedures.
8. Scheduling.
9. Construction facilities and temporary controls.
10. Notice to Proceed.



- D. Architect will record minutes and distribute copies to Contractor and Owner and those affected by decisions made. Contractor is responsible for distribution of copies to Subcontractors, Suppliers and Vendors.
- E. Architect will administer mobilization conference at Project site for clarification of Contractor responsibilities in use of site and for review of administrative procedures.

1.04 PROGRESS MEETINGS

- A. Architect shall schedule and administer Project Meetings throughout progress of the Work not less frequently than every month. Additional Project Meetings shall be scheduled as appropriate to construction activity.
- B. Attendance:
  - 1. Architect.
  - 2. Owner's Representative.
  - 3. Contractor's Project Manager.
  - 4. Contractor's Job Superintendent.
  - 5. Major Subcontractors and Suppliers.
  - 6. Contractor's Quality Control Representative.
  - 7. Others as appropriate to agenda topics.
- C. Agenda:
  - 1. Review of and corrections to minutes of previous meetings.
  - 2. Review of Work progress and/or payment progress.
  - 3. Field observations, problems, and decisions.
  - 4. Identification of problems which impede planned progress.
  - 5. Review of submittals schedule and status of submittals.
  - 6. Review of off-site fabrication and delivery schedules.
  - 7. Maintenance of progress schedule.
  - 8. Corrective measures to regain projected schedules.
  - 9. Planned progress during succeeding work period.
  - 10. Coordination of projected progress.
  - 11. Maintenance of quality and work standards.
  - 12. Effect of proposed changes on progress schedule and coordination.
  - 13. Status of pending changes and substitutions.
  - 14. Other business relating to Work.
  - 15. Review of Construction Progress Documentation.
- D. Architect will record minutes and distribute copies to Owner and Contractor. Contractor shall distribute copies to all others.
- E. Contractor shall hold separate meetings with workers, sub-contractors and suppliers to coordinate means and methods of construction, and jobsite safety. Do not use Owner/Architect Progress Meetings for such purpose.

1.05 PRE-INSTALLATION MEETINGS

- A. When required in individual specification sections or as determined necessary by Architect, convene a pre-installation meeting at work site prior to commencing work of the section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific section.
- C. Notify Architect seven days in advance of meeting date.

- D. Prepare agenda and preside at meeting:
  - 1. Review conditions of installation, preparation and installation procedures.
  - 2. Review coordination with related work.
  - 3. Agenda items listed in individual specification Sections.
  - 4. Installation schedule.
  
- E. Architect will record minutes and distribute copies to participants, and those affected by decisions made.

END OF SECTION 01 31 19

SECTION 01 32 00 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

A. Section Includes:

1. Construction Progress Schedule.
2. Contractor as-built drawings.
3. Provisions for format, content, revisions, submittals and distribution.

1.02 CONSTRUCTION PROGRESS SCHEDULE

A. Format:

1. Prepare Schedules as horizontal bar chart with separate bar for each major portion of Work or operation, identifying first work day of each week.
2. Sequence of Listings: The Table of Contents of this Project Manual.
3. Form: Contractor's option.

B. Content:

1. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
2. Identify each item by major Specification section number.
3. Provide sub-schedules to define critical portions of entire Schedule.
4. Show accumulated percentage of completion of each item, and total percentage of Work completed, to correspond with Application for Payment. Percentage of completion shall not include stored materials.
5. Provide separate schedule of submittal dates for shop drawings, product data, and samples and dates reviewed submittals will be required from Architect. Show dates for selection of finishes.
6. Show delivery dates for Owner furnished items, if any.
7. Coordinate content with Section 01 29 73 - Schedule of Values.

C. Revisions:

1. Indicate progress of each activity to date of submittal, and projected completion date of each activity.
2. Identify activities modified since previous submittal, major changes in scope and other identifiable changes.
3. Provide narrative report to define problem areas, anticipated delays and impact on Schedule. Report corrective action taken or proposed and its effect.

D. Submittals:

1. Submit initial Schedules immediately following Award of Contract.  
After review, revise data and immediately submit for re-review.
2. Submit up-dated Progress Schedules with each Application and Certificate for Payment.
3. An updated Progress Schedule is required for review/consideration for Application and Certificate for Payment.
4. Submit under transmittal letter.

E. Distribution:

1. Distribute copies of reviewed schedules to Architect job site file, subcontractors, suppliers and other concerned entities including separate contractors.
2. Instruct recipients to promptly report, in writing, problems anticipated by projections shown in Schedules.

1.03 CONTRACTOR AS-BUILT DRAWINGS

- A. Format:
1. Contractor's job superintendent to record as-built conditions onto a single set of project drawings for all trades included in scope of work.
  2. As-built set to be kept on site at all times.
  3. Documentation may be hand written in ink or pasted directly onto drawings.  
All information must be considered to be permanently affixed.
- B. Content:
1. Include work of all trades included in scope of work.
  2. Include all changes, errors, deviations, omissions, additions, clarifications and corrections.
  3. Include any item installed in a location other than that shown on contract drawings.
  4. Correct any inaccurate or altered dimension.
- C. Revisions:
1. As-built drawings shall be updated daily with all work completed.
  2. Contractor job superintendent to be responsible for subcontractor information on as-built drawings.
- D. Submittals:
1. As-built drawings may be reviewed at progress meetings or periodically as requested by Architect to review entries to date.
- E. Distribution:
1. As built drawings shall be given to Architect prior to release of final payment.
  2. Refer to Section 01 78 00 - Closeout Submittals.

END OF SECTION 01 32 00

SECTION 01 33 00 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Section Includes:
1. Submittal Schedule.
  2. Submittal Requirements.
  3. Shop Drawings.
  4. Electronic files provided by the Architect.
  5. Product Data.
  6. Samples.
  7. Manufacturer's Information.
  8. Review by Contractor and Architect.
  9. Re-submittals.
  10. Distribution.

1.02 SUBMITTAL SCHEDULE

- A. Submit to the Architect a schedule listing all submittals required for review as required in the individual specifications sections.
- B. List submittals by specification section as listed in the index.

1.03 SUBMITTAL REQUIREMENTS

- A. Formats:
1. Submit all drawings and technical data electronically in PDF format.
    - a. Furnish all submittals specified in all sections of the specifications.
    - b. Submit each section under a separate transmittal for clarity and ease of review.
    - c. Make a complete submittal for each section; do not issue multiple submittals per section.
    - d. Compile all sheets, drawings, and product data into a single electronic file for review.  
Do not submit multiple PDF files per sheet or item.
    - e. Identify manufacturer and subcontractor/supplier.
    - f. Submit Material and Safety Data Sheets for all products and materials.
    - g. Name each PDF file to match specifications title and number, matching that as listed in the project manual.
  2. Submit to Architect via Architect's project management website specific to this project.
  3. Submit actual samples for finishes, colors, and textures for approval via mail or hand delivery.
- B. Transmit submittals in accordance with approved Progress Schedule and in such sequence to avoid delay in the Work or work of other contracts.
- C. Apply Contractor's stamp, signed or initialed, certifying to review, verification of products, field dimensions and field construction criteria and coordination of information with requirements of Work and Contract Documents.
- D. Coordinate submittals into logical groupings to facilitate interrelation of the several items:
1. Finishes which involve Architect selections of colors, textures, or patterns.
  2. Associated items which require correlation for efficient function or for installation.

1.04 SHOP DRAWINGS

- A. Present in a clear thorough manner, drawn by professional draftsman.
- B. Identify project with title as shown on cover of Project Manual; identify each element of drawings by reference to sheet number and detail, schedule, or room number on Contract Documents.
- C. Identify field dimensions; show relation to adjacent or critical features of Work or products.
- D. Sheet Size:
  - 1. Minimum: 8-1/2 x 11 inches.
  - 2. Maximum: 30 x 42 inches.

1.05 ELECTRONIC FILES PROVIDED BY THE ARCHITECT

- A. Architect may make available, at no cost, base xref drawings in AutoCAD format for contractor's use in preparing shop drawings.
- B. AutoCAD version of electronic files will be the latest version being utilized in the Architect's office. The Architect has no obligation to provide electronic files in a format that may be an old, outdated, reduced or simplified version of that being utilized in the Architect's office.
- C. Electronic files are an instrument of the Architect's service, and are the property of the Architect.
- D. The use of the information contained in the electronic files is at the sole risk of the user.
- E. The use of the electronic files does not relinquish the contractor from responsibilities for site and field verification of spaces, construction, conditions, requirements, dimensions, etc.

1.06 PRODUCT DATA

- A. Submit only pages which are pertinent; mark each copy of standard printed data to identify pertinent products, referenced to Specification Section and Article number. Show reference standards, performance characteristics, and capacities; wiring and piping diagrams and controls; component parts; finishes; dimensions; and required clearances.
- B. Modify manufacturer's standard schematic drawings and diagrams to supplement standard information and to provide information specifically applicable to the Work. Delete information not applicable.
- C. Provide manufacturer's published catalog pages and industry cutsheets, with all items and options marked as appropriate to the project.

1.07 SAMPLES

- A. When finishes are specified on the Drawings, submit samples of the specified finish for approval.
- B. When finishes are not specified on the Drawings, submit full range of manufacturer's standard finishes, except when more restrictive requirements or price groups are specified, indicating colors, textures, and patterns, for Architect's selection.
- C. Submit samples to illustrate functional characteristics of products, including parts and attachments.
- D. Label each sample with identification required for transmittal letter.
- E. Submit number of samples specified in individual specifications sections but not less than three (3).

- F. Special circumstances may require additional samples for determination of acceptance, such as textures, patterns, colorways, etc. Provide sample in the quantity and/or size as required for this determination.  
Requirements to be determined solely by the Architect.  
All such samples will be returned to the Contractor, less those retained for Owner and Architect files.
- G. Samples for selection of finishes need to be submitted as actual samples of the actual colors, materials and textures for proper selection and review of available choices. Samples for finishes already selected as indicated in the Drawings may be color charts in lieu of actual samples, if acceptable to the Architect.
- H. All samples may be retained for Owner and Architect files.
- I. See individual Specification sections for additional information and requirements.

1.08 MANUFACTURER'S INFORMATION

- A. Manufacturer's instructions for storage, protection, preparation, assembly, installation, adjusting, balancing and finishing.
- B. Installation details, anchoring requirements or other information specifically required by manufacturer.
- C. Specific information or details required by Manufacturer to uphold warranty of product specified.

1.09 CONTRACTOR'S REVIEW

- A. Review submittals prior to transmittal; verify subcontractor's field measurements, field construction criteria, manufacturer's catalog numbers, and conformance of submittal with requirements of Contract Documents.
- B. Coordinate submittals with requirements of Work and of Contract Documents.
- C. Affix a stamp and sign each drawing, manufacturer's data, sample, etc. as follows:

<p>This submittal has been reviewed by <i>(Name of Contractor)</i> and approved with respect to the means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incidental thereto. <i>(Name of Contractor)</i> also warrants that this submittal complies with contract documents and comprises no variations or increase in contract price thereto.</p> <p>By:- _____</p> <p>Date: _____</p>
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- D. Notify Architect in writing at time of submittal, of any deviations from requirements of Contract Documents. Architect will neither accept incomplete submittals, nor those which in the Architect's opinion, have not been properly reviewed by the Contractor.
- E. Do not fabricate products or begin work which requires submittals until return of submittal with Architect acceptance.

- F. Submittals which have not been thoroughly reviewed by Contractor prior to being forwarded to Architect will be rejected and returned for review.

1.10 ARCHITECT'S REVIEW

- A. Architect will review shop drawings, product data, and samples and return submittals within a reasonable time frame for complete review and approval.
- B. Architect's review is for conformance with information given and design concept expressed in the Contract Documents. The review shall not constitute approval of safety precautions, or of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.
- C. Review of shop drawings does not authorize changes to the contract sum unless stated in a separate letter or change order.

1.11 RE-SUBMITTALS

- A. Make re-submittals under procedures specified for initial submittals; identify changes made since previous submittals.

1.12 DISTRIBUTION

- A. Duplicate and distribute reproductions of shop drawings, copies of product data, and samples, which bear Architect's stamp of approval, to job site file, Contractor's Record Documents file, sub-contractors, suppliers and other entities requiring information.

END OF SECTION 01 33 00



SECTION 01 42 00 - REFERENCES

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Section Includes:
1. Specification format and content.
  2. Quality assurance.
  3. Reference standards.
  4. Abbreviations.

1.02 SPECIFICATION FORMAT AND CONTENT

- A. Specification Format:  
Specifications are organized into Divisions and Sections based on Construction Specifications Institute (CSI) Division format and Master Format numbering system.  
Specific projects may also include an added Division 17-Technology and Communications.
- B. Specification Content:  
This Specification uses certain conventions in use of language and intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:
1. Abbreviated Language:  
Language used in Specifications and other Contract Documents is abbreviated type. Words and meanings shall be interpreted as appropriate. Words that are implied, but not stated shall be interpolated as the sense required. Singular words will be interpreted as plural and plural words interpreted as singular where applicable and context of Contract Documents so indicates.
  2. Imperative and streamlined language is used generally in Specifications. Requirements expressed in imperative mood are to be performed by Contractor. At certain locations in text, for clarity, subjective language is used to describe responsibilities that must be fulfilled indirectly by Contractor, or by others when so noted.
  3. The words "shall be" shall be included by inference wherever a colon (:) is used within a sentence or phrase.

1.03 QUALITY ASSURANCE

- A. For Products or workmanship specified by association, trade, or other consensus standards, comply with requirements of standard, except when more rigid requirements are specified or are required by applicable codes. Such standards are made a part of Contract Documents by reference.
- B. Conform to reference standard by date of issue current on original date of issue indicated on Contract Documents.
- C. Obtain copies of standards when required by Contract Documents.
- D. Maintain copy at Project Site during submittals, planning, and progress of specific Work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from the Architect before proceeding.
- F. The contractual relationship, duties, and responsibilities of the parties in Contract nor those of Architect shall not be altered from Contract Documents by mention or inference otherwise in any reference document.

1.04 REFERENCE STANDARDS

A. Conflicting Requirements:

Where compliance with two or more standards is specified, and the standards may establish different or conflicting requirements for minimum quantities or quality levels. Refer requirements that are different, but apparently equal, and uncertainties to Architect for decision before proceeding.

1. Minimum Quantity or Quality Levels:

Quantity or quality level shown or specified shall be the minimum provided or performed. Actual installation may comply exactly with minimum quantity or quality specified, or it may exceed minimum within reasonable limits. In complying with these requirements, indicated numeric values are minimum or maximum, as appropriate for context of requirements.

Refer uncertainties to Architect for decision before proceeding.

B. Copies of Standards:

Each entity engaged in construction on Project is required to be familiar with industry standards applicable to that entity's construction activity. Copies of applicable standards are not bound with Contract Documents.

1. Where copies of standards are needed for performance of a required construction activity, Contractor shall obtain copies directly from publication source.

1.05 ABBREVIATIONS

A. Abbreviations and Names:

Trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in Specifications or other Contract Documents, they mean the recognized name of trade association, standards generating organization, authority having jurisdiction, or other entity applicable to context of text provision. Refer to "Encyclopedia of Associations," published by Gale Research Company, available in most libraries.

END OF SECTION 01 42 00

SECTION 01 45 00 - QUALITY CONTROL

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Section Includes:
1. General Requirements.
  2. Qualifications.
  3. Laboratory Requirements.
  4. Quality Control Procedures.
  5. Contractor Field Inspection and Testing.
  6. Contractor's Daily Report.
  7. Contractor's Test and Inspection Reports.
  8. Non-Compliance Check-Off List.
  9. Completion and Inspection of Work.

1.02 GENERAL REQUIREMENTS

- A. Inspection, Sampling, and Testing is required for:
1. Mechanical testing
  2. Electrical testing
- C. Employment of Testing Laboratory or Inspector shall in no way relieve Contractor of his obligation to perform Work in accordance with Contract and Contract Documents.

1.03 QUALITY CONTROL PROCEDURES

- A. Monitor quality control over Contractor staff, subcontractors, suppliers, manufacturer's, products, services, site conditions, and workmanship.
- B. Comply fully with manufacturer's published instructions, including each step in sequence of installation.
- C. Should manufacturer's published instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as a minimum quality for Work, except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform Work by persons who are thoroughly qualified and trained in their respective trade, to produce workmanship of specified quality.
- F. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.
- G. Perform tests required by governing authorities having jurisdiction and utilities having jurisdiction.

1.04 CONTRACTOR FIELD INSPECTION AND TESTING

- A. Contractor:  
Test and Inspect Work provided under this Contract to ensure Work is in compliance with Contract requirements. Required tests and inspections are indicated in each individual Specification Section.

- B. Preparatory Inspection:  
Performed prior to beginning Work and prior to beginning each segment of Work and includes:
  - 1. Review of Contract requirements.
  - 2. Review of shop drawings and other submittal data after return and approval.
  - 3. Examination to assure materials and equipment conform to Contract requirements.
  - 4. Examination to assure required preliminary or preparatory Work is complete.
  
- C. Initial Inspection:  
Performed when representative portion of each segment of Work is completed and includes:
  - 1. Performance of required tests.
  - 2. Quality of workmanship.
  - 3. Review for omissions or dimensional errors.
  - 4. Examination of products used, connections and supports.
  - 5. Approval or rejection of inspected segment of Work.
  
- D. Follow-Up Inspections:  
Performed daily, and more frequently as necessary, to assure non-complying Work has been corrected.
  
- E. Testing and Inspection:  
Perform testing and inspection in accordance with requirements in individual Sections.

1.09 CONTRACTOR'S DAILY REPORT

- A. Submit daily report to Architect, for days that work was performed. Include the following information:
  - 1. Contractor name and address.
  - 2. Job reference and information.
  - 3. Date, weather, minimum and maximum temperatures, rainfall, and other pertinent weather occurrences.
  - 4. Daily workforce of Contractor and subcontractors, by trades.
  - 5. Description of work started, ongoing work, and work completed by each subcontractor.
  - 6. Coordination implemented between various trades.
  - 7. Approval of substrates received from various trades.
  - 8. Nonconforming and unsatisfactory items to be corrected.
  - 9. Remarks.
  - 10. Reports may be faxes to Architect no more than one week's worth of reports at one time. Submit daily if requested by Architect.

1.10 CONTRACTOR'S TEST AND INSPECTION REPORTS

- A. Prepare and submit, to Architect, a written report of each test or inspection signed by Contractor Quality Control Representative performing inspection within two (2) days following day inspection was made.
  
- B. Include the following on written reports of inspection:
  - 1. Cover sheet prominently identifying that inspection "CONFORMS" or "DOES NOT CONFORM" to Contract Documents.
  - 2. Date of inspection and date of report.
  - 3. Project name, location, solicitation number, and Contractor.
  - 4. Names and titles of individuals making inspection, if not Contractor's Project Field Superintendent.
  - 5. Description of Contract requirements for inspection by referencing Specification Section.
  - 6. Description of inspection made, interpretation of inspection results, and notification of significant conditions at time of inspection.
  - 7. Requirements for follow-up inspections.

1.11 NON-COMPLIANCE CHECK-OFF LIST

- A. Maintain check-off list of Work that does not comply with Contract Documents, stating specifically what non-complying, date faulty Work was originally discovered, and date Work was corrected. No requirement to report deficiencies corrected same day it was discovered. Submit copy of Non-Compliance Check-Off List of non-complying work items to Architect on a weekly basis.

1.12 COMPLETION AND INSPECTION OF WORK

- A. Prior to final acceptance by Architect, submit a certification signed by Contractor to Architect stating that all Work has been inspected and all Work, except as specifically noted, is complete and in compliance with Contract Documents
- B. Record Documents:
1. By Contractor Quality Control Representative. Ensure that "As-Builts" required are marked to show any deviations which have been made during the course of construction and are kept current on a daily basis. Upon completion of the Work, certify the accuracy of the "As-Builts" and submit to Architect.
  2. Refer to Section 01 32 00 - Construction Progress Documentation.
  3. Refer to Section 01 78 00 - Closeout Submittals.

END OF SECTION 01 45 00

SECTION 01 51 00 - TEMPORARY UTILITIES

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

A. Section Includes:

1. Responsibility of Owner and Contractor.
2. Provisions for temporary electrical power.
3. Provisions for temporary lighting.
4. Provisions for temporary heating and ventilation
5. Provisions for temporary water.
6. Provisions for temporary telephone, fax and internet.
7. Regulatory Agency Requirements.

1.02 RESPONSIBILITY

A. Responsibility of Owner:

1. Owner is not responsible for the establishment or payment of any temporary utilities.
2. Pay all utility bills from the utility companies for existing established utility services within existing building and construction limits for the duration of construction.
3. Owner is not responsible for any costs directly to the contractor for non-established utility items including such items as fuels, tanks, generators, extensions, hookups, feeds, cords, hoses, wiring, etc. as may be required by the contractor for their ability to provide needed temporary utilities specified herein.
4. Owner is not responsible for any Contractor job overhead costs such as cell phones, fax, internet, water hauling, etc. that may be required as part of the construction activities.

B. Responsibility of Contractor:

1. Pay all utility bills for all new or temporary utility services within construction limits for duration of construction.
2. Coordinate establishment, timing and all requirements of all temporary utilities with all utility companies and authorities having jurisdiction.
3. Coordinate establishment, timing and all requirements of all permanent utilities, including new services and/or reworking of existing services, with all utility companies and authorities having jurisdiction.
4. Provide, install, re-install, remove, coordinate, etc, any and all temporary utilities to all areas of the site and project resulting from any and all phasing of the work.
5. Provide temporary electrical power, as required.
6. Provide temporary lighting, as required.
7. Provide temporary heating and ventilation, as required.
8. Provide temporary water, as required.
9. Provide temporary telephone, fax and internet, as required.
10. Coordinate shut-offs of any and all utilities with Owner at least 24 hours in advance.
11. Each individual Contractor to provide temporary utilities for all contractors, crews and trades under their control or within the scope of work for their contract.

1.03 DESCRIPTION

A. Temporary Electrical Power:

1. Provide adequate electrical power centers, wiring and services for all tools, equipment and miscellaneous items.
2. Locate so that power is available at any point with no more than 100 foot extension.
3. Provide equipment grounding continuity for entire system.
4. Individual contractors and users provide grounded UL approved extension cords from power center.

5. Contractor to provide power for any and all temporary field offices, storage and construction buildings.
  6. Contractor to provide power for temporary lighting, heating, ventilation and air conditioning.
  7. Contractor to provide power for pumping, welding and other special equipment or procedures.
  8. Provide temporary covers or plates for any and all openings, electrical boxes, receptacles, etc. that may be open during construction or awaiting installation of final covers or plates.
- B. Temporary Lighting:
1. Provide work lighting, safety lighting and security lighting.
  2. Provide lighting for construction and storage areas.
  3. Provide lighting for Owner's tours or access to site areas for review.
  4. Lightings Levels:
    - a. General work lighting and safety lighting 5 foot candles.
    - b. Finishing and detail work 20 foot candles.
  5. Periods of Service:
    - a. Work and safety lighting continuous during working hours.
    - b. Security lighting at all hours of darkness.
  6. Replace lamps throughout, as required.
  7. Provide temporary exit signs as required for phasing of work or relocation of exits and egress paths.
- C. Temporary Heating and Ventilation:
1. Provide as required to protect work and products against dampness and cold.
  2. Provide suitable ambient temperatures for installation and curing of materials.
  3. Provide adequate ventilation for safe working environment in accord with health regulations.
  4. Heat and ventilate temporary field offices and other storage and construction buildings.
  5. Temperatures Required:
    - a. Minimum 40°F, 24 hours a day.
    - b. During working hours and 24 hours a day during concrete and masonry work: 50°F.
    - c. During interior finish work, 24 hours a day, 7 days prior to placing finishes until substantial completion: 70°F.
  6. Ventilation required to prevent hazardous accumulation and harmful exposure of dusts, fumes, mists, vapors or gases.
  7. Ventilation required for curing installed materials, humidity dispersal and sanitary facilities.
  8. Gas for temporary heating shall be from portable tanks only, not the use of natural gas system.
  9. Building system may be used for temporary heat only with approval of Architect. Areas must be sufficiently cleaned so as not to cause damage to system from construction dust and dirt.
  10. New filters are to be installed prior to operation of system.
  11. Contractor to replace all filters with new in all temporary and permanently installed units during construction every two (2) weeks minimum, and more frequently during times and in areas of heavy demolition work. Maintain and install additional cloth filters over all return air outlets at all times.
  12. New filters must be replaced just prior to owner occupancy.
- D. Temporary Water:
1. Provide service standpipe, centrally located, with minimum of two (2) 3/4" hose bibbs.
  2. Discharge pressure: Minimum 20 psi.
  3. Individual contractors and users provide hoses from hose bibbs.
  4. Maintain adequate water volume for all purposes.
  5. Provide water for temporary sanitary facilities, field offices, storage buildings, and cleaning and construction operations.
  6. Obtain required certification from authorities.
  7. If offsite water is required, Contractor shall pay all costs of water and hauling.

8. Provide temporary caps, valves, shut-offs, and spigots as required.
9. Contractor is to coordinate supply of water to areas of building which are to remain in service.
10. Running of hoses through portions of an existing building is not allowed without approval of Owner.

E. Temporary Telephone, Fax and Internet:

1. Provide, maintain and pay for telephone and fax service to Contractor's field offices throughout construction.
2. Provide, maintain and pay for telephone and fax service to Architect's field offices throughout construction, if separate offices are required for Architect's use.
3. Contractor's job site superintendent is required to have a cellular/mobile phone at all times during normal working hours.
4. Use of cellular/mobile phones are allowed for temporary phone service, except at field offices.
5. Use of Owner's lines is prohibited; phone, fax, or internet.
6. If contractor desires internet or e-mail service for their use at the jobsite, the contractor shall be responsible to provide it, and shall bear all costs for its installation and use. Use of any Owner's wireless internet service is prohibited, without express permission.

1.04 REGULATORY AGENCY REQUIREMENTS

- A. Obtain and pay for permits as required by authorities.
- B. Obtain and pay for temporary easements as required across property other than Owners.
- C. Comply with applicable Federal, State, and Local Codes:
  1. Occupational Safety and Health Act of 1970, as amended.
  2. National Electric Code.
  3. National Electric Safety Code.
- D. Comply with Utility Regulations.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Materials may be new or used, adequate in capacity for the purpose intended, without creating unsafe conditions or violating codes.
- B. Comply with Electrical Basic Materials and Methods, Division 26:
  1. Temporary wiring shall include green equipment grounding conductor and all outlets shall be grounding type.
  2. Provide required facilities, including transformers, conductors, poles, conduits, raceways, breakers, fuses and switches.
  3. Provide vapor proof and explosion proof fixtures in applicable areas.
- C. Comply with Basic Mechanical Requirements, Division 23:
  1. Provide required facilities, including piping, valves, pumps, pressure regulators and tanks.
  2. Portable Heaters: Oil or gas fired with electric blower, not requiring vent from heated space.
  3. Salamanders shall not be used.

PART 3 - EXECUTION

3.01 GENERAL

- A. Comply with applicable sections of Division 23, Mechanical and Division 26, Electrical.



- B. Install work in neat and orderly manner, structurally sound.
- C. Locate services to avoid interference with traffic, work and storage areas, material handling equipment and cranes.
- D. Modify service as work progress requires.

3.02 INSTALLATION

- A. Electrical:
  - 1. Service and distribution may be overhead or underground.
  - 2. Locate lighting to provide full illumination of required areas.
  - 3. Locate controls at entrance to each area.
  - 4. Install security lighting throughout all areas.
  - 5. Wire temporary heating equipment.
  - 6. Do not run branch circuits on floor.
- B. Heating and Ventilation:
  - 1. Locate to provide equitable distribution as required.
- C. Water:
  - 1. Do not run piping on floor or ground.
  - 2. Locate water outlets to provide service convenient to work.
  - 3. Provide drip pan under hose bibbs within the building, connect to drain.
  - 4. Provide insulation to prevent pipes from freezing.
  - 5. Provide temporary pumps, tanks and compressors as necessary to maintain pressure.

3.03 REMOVAL

- A. Remove completely all temporary materials and equipment upon completion of construction or when no longer required.
- B. Clean and repair damage caused by temporary installation and restore to satisfactory condition per Owner and Architect.
- C. Immediately prior to completion of project, remove temporary lamps and install new lamps throughout.

END OF SECTION 01 51 00

SECTION 01 53 00 - TEMPORARY CONSTRUCTION

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Section Includes:
  - 1. Temporary Structures:
    - a. Contractor's Field Offices.
    - b. Storage Trailers.
    - c. Enclosures.
    - d. Toilets.
    - e. Stairs, Ladders, Ramps, etc.
    - f. Temporary Fence.
    - g. Project Signage.
  - 2. Installation.
  - 3. Removal and Cleanup.
  - 4. Protection.
  - 5. Temporary Use of Elevator.

PART 2 - PRODUCTS

2.01 TEMPORARY STRUCTURES

- A. Contractor's Field Offices:
  - 1. Provided by General Contractor.
  - 2. Provided by each individual subcontractors if desired.
  - 3. The Contractor's offices required for general use.
  - 4. Type Option: Portable typical trailer units.
  - 5. Windows, operable, screened; provide view of construction.
  - 6. Automatic heating to maintain min 70°F.
  - 7. Furnish emergency first-aid equipment, ABC fire extinguisher, extra hard hats.
- B. Storage Trailers:
  - 1. Provided by each General or Prime Contractor or subcontractor as required.
  - 2. Coordinate location with Architect.
  - 3. Remove at project completion and clean up area.
- C. Enclosures:
  - 1. Provided by General Contractor.
  - 2. Provide temporary weather-tight enclosures for all exterior openings.
  - 3. Equip exterior doors with locks and closures.
- D. Toilets:
  - 1. Provided by General Contractor.
  - 2. Provide temporary sanitary facilities during construction period.
  - 3. Enclose toilet facilities for construction personnel.
  - 4. Portable units acceptable. No chemical toilets permitted.
  - 5. Do not use toilets in existing or renovated building.
- E. Stairs, Ladders, Ramps, etc.:
  - 1. Provided by each individual Contractor.
  - 2. Provide temporary stairs, ladders, ramps runways, scaffolds, derricks, chutes and similar items required for proper execution of work by the trades.

- F. Project Signage:
  - 1. Provided by General Contractor.
  - 2. Provide 4' x 8' project identification sign on wood frame
  - 3. Architect will provide digital file with all information ready for graphic sign maker
  - 4. No other signage or advertisement will be allowed on the project site.
  - 5. Coordinate location of signage with Architect

### PART 3 – EXECUTION

#### 3.01 INSTALLATION

- A. Temporary Structures:
  - 1. Locate as directed to avoid interference with work.
  - 2. Relocate as required and as directed by Architect.
  - 3. Construct with code-approved service connections.
  - 4. Mount fire extinguishers in prominent accessible location.
  - 5. Maintain offices during construction period.
  - 6. Provide wooden steps and landing with handrail.
- B. Temporary Enclosures:
  - 1. Erect temporary doors as soon as enclosing walls are up.
  - 2. Cover window or wall openings in advance of finishing operations when temporary heat is required.
  - 3. Replace with permanent closures as soon as possible.
  - 4. Install temporary partitions as required to control dust and moisture penetration into existing and completed spaces.
  - 5. Provide temporary protection for installed products.
  - 6. Provide temporary enclosures and fencing protection as indicated on temporary exiting plans. Locate, relocate, and coordinate as required to accommodate phasing of work, progress of work, code and fire officials, and concerns of Owner and Architect.
- C. Temporary Toilets:
  - 1. Locate as directed in convenient location to avoid interference with project.
  - 2. Anchor portable units to prevent dislocation.
  - 3. Service weekly, minimum.
  - 4. Relocate as work progresses.
- D. Temporary Construction Apparatus:
  - 1. Erect Scaffolding, securely in conformance with labor laws and safety codes.
  - 2. Construct stairs, ladders, ramps, runways and derricks security to sustain 100 psf minimum live load or as required for their use.

#### 3.02 REMOVAL AND CLEAN UP

- A. Remove all temporary structures and materials completely upon completion of construction.
- B. Remove debris and clean area.
- C. Repair all damage and restore to finish condition.

#### 3.03 PROTECTION

- A. Safety:
  - 1. Maintain lights and barricades on all obstruction and hazards during contract period in conformance to federal and local laws and codes.

- B. Fire Protection:
  - 1. Provide multi-purpose dry chemical extinguishers.
  - 2. Locate one extinguisher adjacent to each stairway.
  - 3. Wherever and whenever any burning, welding, cutting or soldering operations are in progress, or equipment is in use, or any work involving a fire hazard is performed, the Contractor or Subcontractor responsible for such operation shall have at all times acceptable fire extinguishes or protection within ten feet of the operation.
  
- C. Piping:
  - 1. Keep materials out of piping by capping or other protection.
  - 2. Trades responsible for stoppage shall bear expense of cleaning.
  
- D. Equipment:
  - 1. Each contractor and subcontractor shall take necessary precautions to protect and secure own equipment, tools and material.

3.04 TEMPORARY USE OF ELEVATOR

- A. Elevator is currently not operating

END OF SECTION 01 53 00

SECTION 01 62 00 - PRODUCT OPTIONS AND SUBSTITUTIONS

PART 1- GENERAL

1.01 REQUIREMENTS INCLUDED

Section Includes:

1. Contractor's options.
2. Requests for substitutions.

1.02 CONTRACTOR'S OPTIONS

- A. For products specified only by referenced standards, select product meeting standards and submit for approval in accordance with this section.
- B. For products listing several manufacturers or model numbers, the following criteria apply:
  1. For specification sections naming a list of acceptable manufacturers and only one manufacturer's specific model name or number, alternate products from the list of acceptable manufacturers are acceptable only if they are equivalent to the named, specific, model name or number in all respects. If the alternate manufacturer's product is not equivalent to the named, specific, model name or number in all respects, then that manufacturer's product is not an acceptable substitution, even though they are named as an acceptable manufacturer in the specification section. Proposed products from listed alternate manufacturers with no model name or model number listed must be submitted in accordance with this section.
  2. For specification sections naming a list of acceptable manufacturers, and no specific model number from any of the listed manufacturers is named in the specification, alternate products from named manufacturers are acceptable provided that they are equivalent to the listed performance criteria and referenced standards in all respects. If the alternate manufacturer's product is not equivalent to the listed performance criteria and referenced standards in all respects, then that manufacturer's product is not an acceptable substitution, even though they are named as an acceptable manufacturer in the specification section.
  3. For specification sections naming a list of acceptable manufacturers and a number of manufacturer's specific model numbers, any of the named, specific, referenced products as listed are acceptable. Alternate products from the listed acceptable manufacturers are acceptable only if they are equivalent to at least one of the named, specific, model names or numbers in all respects. If the alternate manufacturer's product is not equivalent to at least one of the named, specific, model names or numbers in all respects, then that manufacturer's product is not an acceptable substitution, even though they are named as an acceptable manufacturer in the specification section. Proposed products from listed alternate manufacturers without a listed model name or number must be submitted in accordance with this section.
- C. For products specified by naming only one product and manufacturer, there is no option, and no substitution will be allowed. This item may have been specified in this manner to standardize the Owner's maintenance procedures or stock inventory, comply with the Owner's warranty requirements, or to maintain compatibility with existing construction. In some instances, this item may have been specified to determine a level of quality or performance desired and requests for substitutions may be accepted for consideration as determined by the Architect.

1.03 REQUESTS FOR SUBSTITUTIONS

- A. During period of bid preparation, Architect will consider written requests for substitutions, received at least ten (10) calendar days prior to bid date; requests received after that time will not be considered.
- B. Products proposed for installation by the Contractor and approved by the Architect shall not be changed except with written consent of the Architect.
- C. Submit all information to the Architect electronically via e-mail or CD, unless otherwise permitted. If hard copies are permitted, submit two (2) copies of all information.
- D. Include the following information in request.  
Submittals or product catalogs without the following specific information listed will not be considered.
1. Complete data substantiating compliance of proposed substitution with Contract Documents.
  2. Product Data:
    - a. Product identification, including manufacturer's name and address.
    - b. Manufacturer's literature;
      - 1) Product description.
      - 2) Performance and test data.
      - 3) Reference standards.
      - 4) Material safety and data sheets.
    - c. Samples.
    - d. Name and address of similar projects which may be visited in vicinity of project on which product was used and date of installation.
  3. Construction Method: detailed description and drawings of proposed method.
  4. Itemized comparison of proposed substitution with product or method specified.
  5. Data relating to changes in construction schedule.
  6. Relation to separate contracts.
  7. Accurate cost data on proposed substitution in comparison with product or method specified.
  8. Literature of item proposing to replace, proving equality and comparison.
- E. In making the request for substitution, Bidder/Contractor represents:
1. They have investigated proposed product or method and determined that it is equal or superior in all respects to that specified.
  2. They will provide the same warranty requirements for substitution item as for product or method specified.
  3. They will coordinate and accommodate installation of accepted substitution into the work, making such changes as may be required for work to be complete in all respects and trades.
  4. The Bidder/Contractor waives all claims for any and all additional costs or time related to this substitution which consequently become apparent, by contractor, subcontractors, vendors, and suppliers. Bidder/Contractor shall be responsible for any and all costs, direct or indirect, resulting from this Request.
  5. Cost data is complete and includes all related costs under his Contract, but excludes:
    - a. Costs under separate contracts.
    - b. Architect's redesign costs, if any.
- F. Substitutions will not be considered if (in the opinion of the Architect):
1. Request is not received within the proper timeframe for consideration prior to the bid date.
  2. Request does not contain the proper information for determination of substitution.
  3. Item has been specified with no substitutions permitted.
  4. Item is not considered to be equal to that specified.
  5. Item would require substantial revision to the Contract Documents or design intent.
  6. Item would have an adverse effect on the project or construction schedule.

7. Item would have an adverse effect on other trades or scope of work.
  8. Item is deemed unacceptable by the Owner for any reason.
  9. Item is deemed not equal to the desired aesthetic or have an adverse aesthetic effect; including colors, textures, patterns or appearance specified or intended.
  10. They are indicated or implied on shop drawings or project data submittal without formal request submitted in accordance with this Section.
  11. They have not been included in an addendum during bidding.
  12. They are made after award of Contract.
- G. It is the responsibility of the bidder to make a complete and proper submission for their request for substitution, to the correct party as indicated in the specifications and within the required timeframe. The Architect is not responsible for any errors in the bidders submission, including such items as sending information to the incorrect contact person, or sending the request to the incorrect mailing address, fax number or e-mail address.
- H. The decision of the Architect is FINAL.

END OF SECTION 01 62 00

SECTION 01 64 00 - OWNER-FURNISHED EQUIPMENT

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

A. Section Includes:

1. Description of work.
2. Definitions.
3. Protection and Cleaning.
4. Building Systems.

1.02 DESCRIPTION OF WORK

- A. Coordinate the installation of the equipment or system with all trades. Any problem noted shall be brought to the attention of the Architect. This notification must be submitted in writing and no claims for additional work shall be considered unless the request for clarification has been initiated by the Contractor.
- B. Work includes installation of owner furnished items as noted on drawings and coordination of owner installed items with owner's representatives, and vendors and suppliers.

1.03 DEFINITIONS

A. OFCI: (Owner Furnished - Contractor Installed)

1. The Owner shall be responsible for furnishing equipment or system for installation by Contractor.
2. The Contractor shall be responsible for receiving, storing, protecting, providing all rough-in services, installing and testing of the equipment or system. The Contractor shall receive, inventory, verify quantity and condition and notify the Owner of any discrepancies or damage. The Contractor shall provide coordination, blocking, connections and all provisions necessary to fully incorporate into the project, scope, building and site.

B. CFCI: (Contractor Furnished - Contractor Installed)

1. The Contractor shall be responsible for ordering, receiving, storing, protecting, installing and testing of the equipment or system.
2. Unless otherwise noted, ALL work shown on drawings and specified is C.F.C.I.

C. OFOI: (Owner Furnished - Owner Installed)

1. The Owner shall be responsible for furnishing and installing this equipment or system.
2. The Contractor shall be required to furnish any rough-ins as shown on the Contract Documents, and cooperate with the Owner and their vendors to coordinate this work with work of the Contract.

1.04 PROTECTION & CLEANING

1. Contractor shall protect and clean all O.F.C.I. items, treating them the same as if they had been purchased by the contractor.

1.05 BUILDING SYSTEMS

A. Voice/Data Network System:

1. Owner's Responsibility:
  - a. Will determine the type of system to be used.
  - b. Furnish and install system equipment complete.
  - c. Provide servers, computers, routers, racks, handsets, switches, etc.
  - d. Provide, install and connect all wire and cable from patch panels to system equipment.



2. Contractor's Responsibility:
  - a. Provide and install all cable tray, conduit, backboxes, junction boxes, backboards, power outlets, outlet devices and plates, patch panels, racks, patch cords, ventilation, sleeves through firewalls and floors and other items or work not specifically indicated.
  - b. Provide, install and connect all wire and cable from ultimate outlet locations to patch panels.
  - c. Complete final connections and testing and certification of those connections between ultimate outlet locations and patch panels.
  - d. See Electrical Drawings and Specifications for additional information and clarification.
  
- B. Video Presentation and Communication System:
  1. Owner's Responsibility:
    - a. Will determine the type of system to be used.
    - b. Furnish and install system equipment complete.
    - c. Provide, install and connect all wire and cable from ultimate outlet location to system equipment.
  2. Contractor's Responsibility:
    - a. Provide and install all conduit, backboxes, junction boxes, power outlets, outlet devices and plates, sleeves through firewalls and floors and other items or work not specifically indicated.
    - b. Provide and install wire and cable from patch panel to ultimate outlet location.
    - c. Coordinate with Owner's vendor/installer.
    - d. See Electrical Drawings and Specifications for additional information and clarification.
  
- C. Building Intrusion Alert System:
  1. Owner's Responsibility:
    - a. Will determine the type of system to be used.
    - b. Furnish and install system equipment complete.
    - c. Provide, install and connect all wire and cable complete.
  2. Contractor's Responsibility:
    - a. Provide and install all conduit, backboxes, junction boxes, power outlets, outlet devices and plates, sleeves through firewalls and floors and other items or work not specifically indicated.
    - b. Coordinate exact locations of backboxes in walls and ceilings prior to rough-in.
    - c. Coordinate with Owner's vendor/installer.
    - d. See Electrical Drawings and Specifications for additional information and clarification.
  
- D. Electronic Door Access Control System:
  1. Owner's Responsibility:
    - a. Will determine the type of system to be used.
    - b. Provide, install and connect all wire and cable to building security system complete.
  2. Contractor's Responsibility:
    - a. Provide and install all equipment, door hardware and components as included in bid documents.
    - b. Provide and install all wire and cable and connections between various equipment, door hardware and components and between these components and patch panel as required.
    - c. Provide and install all conduit, backboxes, junction boxes, power outlets, outlet devices and plates, sleeves through firewalls and floors and other items or work not specifically indicated.
    - d. Coordinate exact locations of backboxes in walls and ceilings prior to rough-in.
    - e. Coordinate with Owner's vendor/installer.
    - f. See Electrical Drawings and Specifications for additional information and clarification.

- E. All Other Items Indicated on Drawings as O.F.C.I.
  - 1. Owner's Responsibility:
    - a. Will determine the type system to be used.
    - b. Deliver items to job site.
  - 2. Contractor's Responsibility:
    - a. Provide coordination, blocking and install items.
    - b. Provide any and all connections and provisions necessary to fully incorporate into the project.

END OF SECTION 01 64 00

SECTION 01 65 00 - PRODUCT DELIVERY AND HANDLING

PART 1- GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Section Includes:
1. Material shipments and project delivery to job site.
  2. Handling of materials and products included in project.
  3. Phasing of the work.

1.02 DELIVERY

- A. Delivery materials, supplies or equipment to Project site during working hours.
- B. Deliveries made during other than normal working hours must be received by an authorized agent of the Contractor.
- C. No employee of the Owner is authorized to receive any shipment designated for this project.
- D. The Owner assumes no responsibility for receiving any shipments designated for this project.
- E. Under no circumstances may shipments be directed to, or in care of, the Owner.

1.03 HANDLING

- A. All materials furnished under this Contract shall be identified, shipped, addressed, consigned, etc., to the Contractor who may be charged therewith by giving the name of the Contractor, the name of the project, the street and the city.

1.04 PHASING OF THE WORK

- A. Work may be phased, limiting installation of materials to separate areas of site or times of construction.
- B. Any and all coordination of materials on site related to phasing of the work shall be accomplished by the Contractor at no additional costs to the Owner.
- C. All materials, equipment, and associated items and components for the scope of work are to be delivered to the site only as and when needed for installation. Time allowed on site prior to installation shall be a reasonable timeframe as deemed acceptable by the Architect.
- D. All items on site shall be stored off the ground and protected by watertight encapsulating cover in preparation for immediate installation.
- E. Any and all items on site in a timeframe deemed unacceptable by the Architect for any reason, or deemed to be damaged by improper handling or storage, are to be removed from the site and returned to the manufacturer, without cost to the Owner. Products shall be replaced entirely with new materials at the time needed and deemed acceptable for installation.

END OF SECTION 01 65 00

SECTION 01 73 29 - CUTTING AND PATCHING

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

A. Section Includes:

1. Make several parts fit properly.
2. Uncover work to provide for installation of ill-timed work.
3. Remove and replace defective work.
4. Remove and replace work not conforming with requirements of Contract Documents.
5. Remove samples of installed work as specified for testing.
6. Remove existing construction necessary to install new materials, equipment, mechanical or electrical items.

PART 2 - PRODUCTS

2.01 MATERIALS

For replacement of work removed: Comply with Specifications.

PART 3 - EXECUTION

3.01 PREPARATION

A. General:

1. Do not endanger any other work by cutting or altering work or any part of it.
2. Do not cut or alter work of another contractor without the written consent of Architect.
3. Patching and refinishing shall be executed by the trade experienced in such finishing work.

B. Prior to cutting:

1. Provide shoring, bracing and support as required to maintain structural integrity of project.
2. Provide protection for other portions of project.
3. Provide protection from elements.
4. Advise Architect designating time work will be uncovered to provide for observation.

3.02 PERFORMANCE

- A. Execute cutting and demolition by methods which will prevent damage to other work and will provide proper surfaces to receive installation of repairs and new work.
- B. Execute excavating and backfilling by methods which will prevent damage to other work and will prevent settlement.
- C. Execute fitting and adjustment of products to provide a finished installation to comply with specified tolerances, finishes.
- D. Cut existing concrete openings for piping, floor drains, etc., by core drilling.
- E. Cut existing walls, floors, ceilings, roofs, etc. necessary for the proper installation of new materials, equipment, mechanical or electrical items. Provide all necessary framing, lintels, hangers, etc. to maintain the structural integrity of the building system after cutting.
- F. Employ original installer to perform cutting and patching for exposed finished surfaces.

- G. Restore work which has been cut or removed; install new products to provide completed work in accord with requirements of Contract Documents.
- H. Contractor is responsible for cost to restore or patch adjacent surfaces to original condition.
- I. Fit work airtight to pipes, sleeves, ducts, conduits and other penetrations.
- J. Refinish entire surface as necessary to provide an even finish.
  - 1. Continuous surfaces: To nearest intersections.
  - 2. Assembly: Entire refinishing.

END OF SECTION 01 73 29

SECTION 01 74 23 - CLEANING

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Section Includes:
1. Description of general cleaning requirements.
  2. Regulatory agency requirements.
  3. Cleaning during construction.
  4. Final Cleaning.

1.02 DESCRIPTION

- A. The General Contractor is responsible for all cleaning unless specifically noted otherwise.
- B. Maintain premises and public properties free from accumulations of waste, debris, and rubbish, caused by operations.
- C. Remove temporary piping and wiring: by respective contractors.
- D. At completion of work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all sight-exposed surface; leave project clean and ready for occupancy.

1.03 REGULATORY AGENCY REQUIREMENTS

- A. Maintain project in accord with Occupational Safety & Health Act of 1970 as amended, in terms of clean up.
- B. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
1. Do not burn or bury rubbish and waste materials on project site.
  2. Do not dispose of volatile wastes such as mineral spirits, oil or paint thinner in storm or sanitary drains, or bury below ground.

PART 2 - PRODUCTS

2.01 MATERIAL

- A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.
- B. Use cleaning materials only on surfaces recommended by cleaning material manufacture.

PART 3 - EXECUTION

3.01 CLEANING DURING CONSTRUCTION

- A. Execute cleaning to insure that building, grounds and public properties are maintained free from accumulations of waste material and rubbish on a daily basis by all trades.
- B. Wet down dry materials and rubbish to lay dust and prevent blowing dust.
- C. At reasonable intervals during progress of Work, clean site and public properties, and dispose of waste materials, debris and rubbish.
- D. Provide on-site containers for collection of waste materials, debris and rubbish.

- E. Remove waste materials, debris and rubbish from site and legally dispose of at public or private dumping areas off Owner's property.
- F. Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.
- G. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.
- H. Ensure that no construction materials or items are accessible to public on site or grounds.

3.02 FINAL CLEANING

- A. Employ experienced workman or professional cleaners for final cleaning.
- B. In preparation for substantial completion or occupancy, conduct final inspection of sight-exposed interior and exterior surfaces, and of concealed spaces.
- C. Remove grease, dust, dirt, stains, labels, fingerprints and other foreign materials from sight-exposed interior and exterior finished surfaces; polish surfaces so designated to shine finish.
- D. Wash and clean all glass, removing labels.
- E. Clean and polish fixtures, equipment and materials.
- F. Repair, patch and touch-up marred surfaces to specified finish, to match adjacent surfaces.
- G. Vacuum all carpeted areas; wax and polish all tile and resilient flooring areas.
- H. Remove all foreign materials from roof and site area.
- I. Broom clean paved surfaces; rake clean other surfaces of grounds.
- J. General Contractor shall be responsible for cleaning all equipment regardless of trade or subcontractor that installed.
- K. Mechanical and Electrical Work:
  - 1. Respective contractors shall perform cleaning of their equipment.
  - 2. Mechanical contractor shall clean all strainers in his respective piping work.
  - 3. Replace throw-away type air conditioning filters or media if units were operated during construction, or clean ducts, blowers and coils if air conditioning units were operated without filters.
  - 4. This does not include replacing filters used for performance testing and balancing.
  - 5. Replace burned out or inoperative pilot and lighting lamps; by contractor furnishing respective equipment or fixture.
  - 6. Replace all bulbs in fixtures used for temporary lighting during construction.
- L. Conduct final cleaning and preparation of surfaces and materials as per manufacturer's recommendation and in strict accordance with manufacturer's guidelines.
- M. All materials and finishes shall be stripped, waxed, polished, buffed, etc., upon Substantial Completion for their use by Owner.

- N. Owner will assume responsibility for cleaning as time designated on Certificate of Substantial Completion, Conditional Acceptance or partial occupancy, whichever is first, for Owner's acceptance of Project or portion thereof.

END OF SECTION 01 74 23



SECTION 01 77 00 - CLOSEOUT PROCEDURES

PART 1- GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Section Includes:
1. Administrative procedures in closing out the work.
  2. Procedures for Substantial Completion.
  3. Procedures for Final Inspection.
  4. Required contractor guarantees.
  5. Evidence of payments and release of liens.
  6. Final adjustment of accounts.
  7. Final Application and Certificate for Payment.
  8. Post construction inspection.
  9. Closeout submittals required are specified in Section 01 78 00.
  10. Closeout maintenance materials required are specified in Section 01 78 46.

1.02 SUBSTANTIAL COMPLETION

- A. Submit written certification to Architect that project or designated portion of project is substantially complete and ready for use by Owner.
- B. Architect will make an inspection within a reasonable time after receipt of such notice. The Contractor is responsible for the final punchlist inspection in accordance with the General Conditions. No inspection by the Architect will be made until the Contractor submits written certification that the punchlist has been issued and complete. The Architect's Substantial Completion inspection is not for the purpose of preparing a "to-do" list for the Contractor to use in finishing the work. If it becomes apparent at the time of the Substantial Completion inspection that items affecting life safety, accessibility, security, or full intended use of space are not complete, the inspection will be terminated and the Contractor will be liable for the costs of re-inspection.
- C. Should Architect consider that work is not substantially complete:
1. Architect shall immediately notify Contractor, in writing, stating reasons.
  2. Contractor to remedy deficiencies and send second written notice of substantial completion to Architect.
  3. Architect will re-inspect Work.
  4. Contractor to pay costs of Architect's re-inspection.
- D. When Architect/Engineer considers that work is substantially complete; Architect will prepare and issue a Certificate of Substantial Completion, AIA Document G704, complete with signatures of Owner and Contractor, accompanied by Contractor's list of items to be completed or corrected ("Punchlist") as verified and amended by the Architect. Retainage amounts will be adjusted per General Conditions and Supplementary General Conditions.

1.03 FINAL INSPECTION

- A. Contractor shall submit written certification that:
1. Contract Documents have been reviewed.
  2. Work has been completed and inspected in accordance with Contract Documents.
  3. Equipment and systems have been tested in presence of Owner's representative and are operational.
  4. Work is completed, and ready for final inspection.
  5. If any items from the Certificate of Substantial Completion Inspection are not completed, the final inspection will be terminated and the Contractor will be liable for the costs of re-inspection.

- B. Architect will make final inspection after receipt of certification.
- C. Should Architect consider that work is incomplete or defective:
  - 1. He shall promptly notify Contractor, in writing, stating reasons.
  - 2. Contractor shall take immediate steps to remedy the stated deficiencies, and send second written notice to Architect/Engineer certifying that Work is complete.
  - 3. Architect will re-inspect Work.
  - 4. Contractor to pay costs of Architect's re-inspection.
  - 5. Final payment will not be released.
- D. When Architect finds that work is acceptable in accordance with Contract Documents, he shall request contractor to prepare Project Closeout Submittals in accordance with Section 01 78 00.

1.04 GUARANTEES

- A. Contractor agrees to make good all damage to the construction of building or site or equipment which in the opinion of the Architect is a result of or incidental to the use of materials, equipment or workmanship which are inferior, defective or not in accordance with the specifications.
- B. In case repairs become necessary, the Owner will give written notice to the Contractor to make same and in case of failure of the Contractor to commence such repairs within 30 days after such notice, the Owner may make the repairs either by its own employees or by independent contract and may thereupon recover from the Contractor and his Sureties the cost of the repairs so made together with the cost of supervision and inspection thereof. The Owner will have sixty (60) days after the expiration of said guarantee period in which to notify the Contractor of any such repairs necessary on the date of such expiration. The determination of the necessity for repairs shall rest entirely with the Architect whose decision upon the matter shall be final and obligatory upon the Contractor.
- C. The Guarantees herein stipulated shall extend to the whole body of the improvement and all its appurtenances.

1.05 EVIDENCE OF PAYMENTS AND RELEASE OF LIENS

- A. Contractor to execute and submit:
  - 1. Contractor's Affidavit of Payment of Debts and Claims (AIA Document G706).
  - 2. Contractor's Affidavit of Release of Liens (AIA Document G706A)
  - 3. Consent of Surety to Final Payment (AIA Document G707).
- B. All submittals shall be duly executed before delivery to Architect.

1.06 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit final statement of account to Architect.
- B. Statement shall reflect all adjustments:
  - 1. Original Contract Sum.
  - 2. Additions and deductions resulting from:
    - a. Change Orders.
    - b. Cash Allowances
    - c. Contingency Allowance.
    - d. Unit Prices
    - e. Deductions for uncorrected work.
    - f. Penalties and Bonuses.

3. Total Contract Sum, as adjusted.
4. Previous payments.
5. Sum remaining due.

C. Architect will prepare final Change Order reflecting approved adjustments to Contract Sum not previously made by Change Orders or Allowance Adjustments.

1.07 FINAL APPLICATION AND CERTIFICATE FOR PAYMENT:

- A. Contractor shall submit final application in accordance with procedures and requirements of General and Supplementary Conditions prior to submission of Final Application and Certificate for Payment.
- B. Architect will review Final Application and issue Final Certificate in accordance with provisions of General Conditions.
- C. Should final completion be materially delayed through no fault of Contractor, Architect may issue a Semi-Final Certificate for Payment in accordance with provisions of General Conditions.

1.08 POST CONSTRUCTION INSPECTION

- A. Prior to expiration of one year from date of Substantial Completion, Architect may make visual inspection of Project in company with Owner and Contractor to determine whether correction of Work is required in accordance with provisions of General Conditions.
- B. For Guarantee beyond one year Architect may make inspections at request of Owner after notification to Contractor.
- C. Architect will promptly notify Contractor, in writing, of any observed deficiencies.
- D. Any/all corrections to work at that time to be at Contractor's expense.

END OF SECTION 01 77 00

SECTION 01 78 00 - CLOSEOUT SUBMITTALS

PART 1- GENERAL

1.01 REQUIREMENTS INCLUDED

A. Section Includes:

1. Operation and Maintenance Manuals.
2. Product Warranties.
3. Project Record Documents (As-Built Drawings).
4. Spare-Parts.
5. Certificates of Inspection.
6. Keys and Keying Schedule.
7. Instruction of Owner's Personnel.
8. Certificate of Occupancy.
9. Certification of Asbestos and Lead-Based Paint.
10. Closeout maintenance materials required.

B. Unless specifically permitted by the Architect, the Contractor is to provide all items listed herein to the Owner via the Architect prior to the date of Substantial Completion.

1.02 OPERATION AND MAINTENANCE MANUALS

A. Submission Requirements:

1. Furnish Owner with all manual information electronically on CD in PDF format.
2. Furnish Owner with two (2) sets of bound hard copy manuals.
3. Submit to Architect for review of information and forwarding to Owner for Owner's records.

B. Preparation:

1. Prepare data by personnel experienced in maintenance and operation of described products.
2. Obtain information directly from manufacturer of equipment or product.

C. Format:

1. Prepare organization of data in the format of an instructional manual.
2. Cover:
  - a. Identify manual with title OPERATION AND MAINTENANCE MANUAL.
  - b. Identify title of Project.
  - c. Identify subject matter of contents.
3. Organization:
  - a. Divide sections for each separate product and system, with description of product and major component parts of equipment.
  - b. For any hard copies required, provide tabbed dividers between each section.
4. Text:
  - a. Include all manufacturer's published data and product cutsheets.
  - b. For any hard copies required, provide on 20 pound paper.
5. Drawings:
  - a. Provide applicable drawing files from manufacturer or Architect's drawing files as required. Contact Architect to obtain PDF drawing files as needed.
  - b. For any hard copies required, provide with reinforced punched binder tab. Bind in with text. Fold larger drawings to size of text pages.

6. Binders (for any hard copies required):
  - a. Commercial quality, 8-1/2 x 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size.
  - b. When multiple binders are used, correlate data into related consistent groupings.
  
- D. Contents:
  1. Table of Contents:

Provide title of Project; names, addresses, and telephone numbers of Architect/Engineer, Subconsultants, and Contractor with name of responsible parties; schedule of products and systems, indexed to content of the volume.
  2. For Each Product or System:

List names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
  3. Product Data:

Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
  4. Drawings:

Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
  5. Typed Text:

As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.
  6. Warranties:

Include a copy of each.
  7. Reports:

Include a copy of all test reports, certificates, testing and balance data, etc.
  
- E. Manual for Materials and Finishes:
  1. Building Products, Applied Materials, and Finishes:

Include product data, with catalog number, size, composition, and color and texture designations. Provide information for re-ordering custom manufactured Products.
  2. Instructions for Care and Maintenance:

Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
  3. Moisture Protection and Weather Exposed Products:

Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
  4. Additional Requirements:

As specified in individual Product specification Sections.
  5. Provide a list of all materials and finishes with scanned photo files or actual samples of all products.
  
- F. Manual for Equipment and Systems:
  1. Each Item of Equipment and Each System:

Include description of unit or system, and component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and model number of replaceable parts.
  2. Panelboard Circuit Directories:

Provide electrical service characteristics, controls, and communications; typed.

3. Operating Procedures:  
Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
4. Maintenance Requirements:  
Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
5. Include color coded wiring diagrams as installed.
6. Provide servicing and lubrication schedule, and list of lubricants required.
7. Include manufacturer's published operation and maintenance instructions.
8. Include sequence of operation by controls manufacturer.
9. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
10. Provide control diagrams by controls manufacturer as installed.
11. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.
12. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
13. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
14. Include test and balancing reports as specified in Section 23 05 93 - Testing, Adjusting and Balancing.
15. Additional Requirements as specified in individual Product specification Sections.
16. Provide a list of design data, settings, setpoints, etc., as applicable for equipment.

1.03 PRODUCT WARRANTIES

- A. Submission Requirements:
  1. Furnish Owner with all warranty information electronically on CD in PDF format.
  2. Furnish Owner with two (2) sets of bound hard copy warranties.
  3. Submit to Architect for review of information and forwarding to Owner for Owner's records.
- B. Preparation:
  1. Gather Warranties required for specific Products or Work as specified in each individual Section.
  2. Obtain information directly from responsible Subcontractor, supplier, and manufacturer of equipment or product within 10 days after completion of applicable item of Work.
  3. Except for items put into use with Architect approval, leave date of beginning of time of warranty until the Date of Final Acceptance is determined.
  4. Verify that documents are in proper form, are complete, contain full information, are notarized, and are fully executed and valid.
  5. Co-execute submittals when required.
  6. Retain warranties until time specified for submittal.
- C. Format:
  1. Prepare organization of data in the format of an instructional manual.
  2. Cover:
    - a. Identify manual with title WARRANTIES.
    - b. Identify title of Project.
    - c. Identify subject matter of contents.
  3. Organization:
    - a. Separate each warranty keyed to the Table of Contents listing.  
Provide full information, using separate typed sheets as necessary.

- b. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
- c. For any hard copies required, provide tabbed dividers between each warranty.
- 4. Binders (for any hard copies required):
  - a. Commercial quality, 8-1/2 x 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size.
  - b. When multiple binders are used, correlate data into related consistent groupings.

D. Contents, Each Volume:

- 1. Table of Contents:  
Neatly typed, in sequence of Table of Contents of Project Manual, with each item identified with number and title of specification Section in which specified, and name of Product or Work item.

E. Time of Submittals:

- 1. For equipment or component parts of equipment put into service during construction with Architects approval, submit documents within 10 days after acceptance.
- 2. Make other submittals within 10 days after Date of Final Completion, prior to final Application for Payment.
- 3. For items of Work for which acceptance is delayed beyond Date of Final Completion, submit within 10 days after acceptance.

1.04 PROJECT RECORD DRAWINGS (“AS-BUILTS”)

A. Submission Requirements:

- 1. Furnish Owner with original record document prints.
- 2. Furnish Owner with one (1) additional hard copy set of record document prints.
- 3. Furnish Owner with all as-built information electronically on CD in PDF format.
- 4. Submit to Architect for review of information and forwarding to Owner for Owner’s records.

B. Project Record Documents required:

- 1. Marked-up copies of Contract Drawings.
- 2. Marked-up copies of Shop Drawings.
- 3. Marked-up copies of Specifications, addenda and Contract Modifications.
- 4. Marked-up Product Data submittals.
- 5. Field records for variable and concealed conditions.
- 6. Record information on Work that is recorded only schematically.

C. Maintenance of Documents:

Store record documents in field office apart from Contract Documents used for construction. Do not permit Project Record Documents to be used for construction purposes. Maintain and protect record documents from damage in a clean, dry, legible condition. Make documents available at all times for inspection by Architect.

D. Record Drawings:

- 1. During construction, maintain a set of black-line white-prints of Contract Drawings and Shop Drawings for Project Record Document purposes.
  - a. Mark these Drawings to indicate actual installation where installation varies from installation shown originally. Give particular attention to information on concealed elements which would be difficult to identify or measure and record later. Items required to be marked include but are not limited to:
    - 1) Dimensional changes to Drawings.
    - 2) Revisions to details shown on Drawings.

- 3) Depths of foundations below first floor.
  - 4) Locations and depths of underground utilities.
  - 5) Revisions to routing of piping and conduits.
  - 6) Revisions to electrical circuitry.
  - 7) Actual equipment locations.
  - 8) Duct size and routing.
  - 9) Locations of concealed internal utilities.
  - 10) Changes made by Contract Modification.
  - 11) Details not on original Contract Drawings.
- b. Responsibility for Markup and Supervision:  
Contractor Quality Control Representative; as specified in Section 01 45 00 - Quality Control. Where feasible, individual or entity who obtained record data, whether individual or entity is installer, subcontractor, or similar entity, is required to prepare mark-up on Record Drawings.
- 1) Accurately record information in an understandable Drawing technique.
  - 2) Record data as soon as possible after it has been obtained. In case of concealed installations, record and check mark-up prior to concealment.
  - 3) Contractor Quality Control Representative: Affix signature and certify accuracy of Record Drawings.
- c. Mark completely and accurately record prints of Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions. Where Shop Drawings are marked, show cross-reference on Contract Drawings location.
- d. Mark record sets with red erasable colored pencil; use other colors to distinguish between changes for different categories of Work at same location.
- e. Mark important additional information which was either shown schematically or omitted from original Drawings.
- f. Note construction change directive numbers, alternate numbers, Contract Modification numbers and similar identification.
- g. At time of Final Acceptance, submit record Drawings to Architect for Owner records. Organize into sets, bind and label sets for Owner's continued use.
2. Preparation of Transparencies:
- a. Immediately prior to inspection for Final Acceptance, review completed marked-up record Drawings with Architect. When authorized, prepare a full set of corrected transparencies of Contract Drawings and Shop Drawings.
  - b. Incorporate changes and additional information previously marked on print sets. Erase, redraw, and add details and notations where applicable. Identify and date each Drawing; include printed designation "PROJECT RECORD DRAWINGS" in a prominent location on each Drawing.
  - c. Refer instances of uncertainty to Architect for resolution.
  - d. One set of transparencies of original Contract Drawings will be furnished to Contractor by the Owner for use in recording changes and additional information. Other printing as required is Contractor's responsibility.
  - e. Review of Transparencies:  
Before copying and distributing, submit corrected transparencies and original marked-up prints to Architect for review. When acceptable, Architect will initial and date each transparency, indicating acceptance of general scope of changes and additional information recorded, and of quality of drafting.
  - f. Transparencies and original marked-up prints will be returned to Contractor for organizing into sets, printing, binding and final submittal.



3. Copies and Distribution:

After completing preparation of transparency Record Drawings, print (three ) 3 black-line prints of each Drawing, whether or not changes and additional information were recorded. Organize copies into manageable sets. Bind each set with durable paper cover sheets, with appropriate identification, including titles, dates and other information on cover sheets.

- a. Organize and bind original marked-up set of prints that were maintained during construction in same manner.
- b. Organize record transparencies into sets matching print sets. Place each set in durable tube-type Drawing containers with end caps. Mark end cap of each container with suitable identification.

E. Additional Record Submittals:

1. Refer to other specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Immediately prior to Final Acceptance, complete additional records and place in order, properly identified and bound or filed, ready for use and reference. Submit to Architect.

- a. Categories of requirements resulting in miscellaneous records include, but are not limited to the following:
  - 1) Field records on excavations and foundations.
  - 2) Field records on underground construction and similar Work.
  - 3) Survey showing locations and elevations of underground lines.
  - 4) Inverted elevations of drainage piping.
  - 5) Survey establishing building lines and levels.
  - 6) Authorized measurements utilizing unit prices or allowances.
  - 7) Records of plant treatment.
  - 8) Ambient and substrate condition tests.
  - 9) Certifications received in lieu of labels on bulk products.
  - 10) Batch mixing and bulk delivery records.
  - 11) Testing and qualification of tradesmen.
  - 12) Documented qualification of installation firms.
  - 13) Load and performance testing.
  - 14) Inspections and certifications by governing authorities.
  - 15) Leakage and water-penetration tests.
  - 16) Fire resistance and flame spread test results.
  - 17) Final inspection and correction procedures.

1.05 SPARE-PARTS

- A. Provide Products, replacement stock, spare parts, maintenance, and extra materials in quantities specified in individual specification Sections.
- B. Deliver to Project Site and place in location as directed by Architect; obtain receipt prior to Final Payment.

1.06 KEYS

- A. Submit keys and keying schedule to Owner.

1.07 CERTIFICATES OF INSPECTION

- A. General.
- B. Plumbing.
- C. HVAC.
- D. Electrical.
- E. Fire Sprinkler.
- F. Fire Alarm.

1.08 INSTRUCTION OF OWNER'S PERSONNEL

- A. Prior to final inspection or acceptance, fully instruct Owner's designated operating and maintenance personnel in the operation, adjustment, and maintenance of all products, equipment and systems.
- B. Such instructions shall occur at a time designated by the Architect/Engineer at the completion of the job at a meeting set up by the contractor and attended by the representatives of the Owner and manufacturer.
- C. Services of factory instructor or representative to teach Owner's representative on operation of equipment will be arranged by the contractor, shall begin after equipment has been placed in satisfactory operating condition and shall continue for a period of time as deemed necessary by the Architect.
- D. Contractor shall verify in writing that such periods of instruction have been held with the Owner's representative.
- E. Minimum length of training session to be two (2) hours.
- F. Session will need to be videotaped by Contractor for use by Owner.
- G. Notify Architect to attend all training sessions.

1.09 CERTIFICATE OF OCCUPANCY

- A. Where the Local Authority of Location of project requires either temporary or permanent Certificate of Occupancy, obtain and pay for Certificates and furnish a copy to the Architect for forwarding to the Owner.
- B. Contractor to verify requirements with Local Building Officials.

1.10 CERTIFICATION OF ASBESTOS MATERIAL AND LEAD-BASED PAINT

- A. The use of asbestos containing materials, in excess of 1 percent as defined by applicable US Environmental Protection Agency regulations, is prohibited in the project.
- B. The use of lead-based paint is prohibited in the project.
- C. Prepare and submit to the Architect the "Certification of Asbestos and Lead-Based Paint (Existing Building) " for existing buildings or portions of buildings (attached).
- D. Prepare and submit to Architect the "Certification of Asbestos and Lead-Based Paint (New Work) " for new material furnished or installed as part of the Work (attached).

END OF SECTION 01 78 00

CLOSEOUT SUBMITTALS

01 78 00-7

**Certification of Asbestos and Lead-Based Paint**  
(Existing Building)

To: Kovert Hawkins Architects, Inc.  
Subject: Certification for a building built after 1990  
Facility name: \_\_\_\_\_  
Facility address: \_\_\_\_\_

**Certification for existing building:**

I / We certify under penalty of perjury under the laws of the United States that the following is true and correct. This building was constructed after 1990 and is free of asbestos containing material in excess of 1 percent as defined by applicable US Environmental Protection Agency regulations, and lead-based paint except as specifically listed below. This certification includes all areas of the building(s), including but not limited to; the roof and flooring.

Owner name: \_\_\_\_\_

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

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

Telephone: \_\_\_\_\_ Date executed: \_\_\_\_\_

Materials containing asbestos/lead-based paint	Location/room within facility

The penalty for making a false statement is prescribed by 18 USC 1001.

**Certificate of Asbestos and Lead-Based Paint**  
(New Work)

To: Kovert Hawkins Architects, Inc.  
Subject: Certification for new construction  
Facility name:

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Facility address:

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**Certification for new construction:**

This Contractor hereby certifies that no asbestos-containing material in excess of 1 percent as defined by applicable US Environmental Protection Agency regulations, and lead-based paint has been furnished or installed at the referenced project.

Contractor name:

---

Signature:

---

Address:

---

---

Telephone: \_\_\_\_\_

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

The penalty for making a false statement is prescribed by 18 USC 1001.

SECTION 01 78 46 - CLOSEOUT MAINTENANCE MATERIALS

PART 1- GENERAL

1.01 REQUIREMENTS INCLUDED

A. Section Includes:

1. Maintenance Materials.
2. Owner Verification.

1.02 MAINTENANCE MATERIALS

A. General Requirements:

1. No maintenance stock to be used by the Contractor for any reason.
2. Provide maintenance stock for each and every style, type or color specified for each product.
3. Provide maintenance stock at end of the project and directly to the Owner.
4. Wrap and protect all materials for storage by the Owner.
5. Packages and containers to be manufacturer's unopened and unsealed packaging.  
If quantities listed exceed a manufacturer's single container, additional unopened and unsealed containers shall be supplied until minimum quantity is met.
6. Packages and containers shall include manufacturer's label and product information.
7. Paint products shall include manufacturer's color and mix formulas.

B. Porcelain Floor and Wall Tile and Tile Base:

1. Provide to Owner maintenance stock of at least (6) floor tiles.
2. Provide to Owner maintenance stock of at least (4) wall tiles.
2. Provide to Owner maintenance stock of at least (6) base tiles.

C. Ceramic Tile Flooring and Base (4"x8"):

1. Provide to Owner maintenance stock of at least (2) square feet of floor tile.

D. Acoustical Ceiling Tile:

1. Provide to Owner maintenance stock of at least (24) tiles.

E. Luxury Vinyl Tile Flooring:

1. Provide to Owner maintenance stock of at least (10) tiles of field color.
2. Provide to Owner maintenance stock of at least (6) tiles of each accent color.

F. Rubber Base:

1. Provide to Owner maintenance stock of at least (20) linear feet.

G. Modular Carpet Tiles:

1. Provide to Owner maintenance stock of at least (18) tiles.

H. Paint:

1. Provide to Owner maintenance stock of at least (2) unopened gallon containers of field colors.
2. Provide to Owner maintenance stock of at least (1) unopened gallon containers of each accent color.

1.03 OWNER VERIFICATION

A. Owner to sign-off receipt of each item.

B. Provide to Architect, copy of this Specification Section with Owner's signature next to each item listed, verifying that they have been received by the Owner's representative and entered into their stock.

CLARK COUNTY HEALTH DEPT  
FIRST FLOOR – CLINIC RENOVATIONS

1901.01  
02/26/19

END OF SECTION 01 78 46

CLOSEOUT MAINTENANCE MATERIALS

01 78 46-2

SECTION 02 41 19 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Section Includes:
1. Selective Demolition work included in project.
  2. Project demolition conditions.
  3. Electrical, Plumbing and HVAC Demolition.
  4. Utility demolition.
  5. Subsurface filling.
  6. Protection.

1.02 WORK INCLUDED

- A. The extent of demolition work shown on drawings and specified herein, including, but not limited to:
1. Opening of exterior walls for new doors, windows, grilles, louvers, mechanical, and electrical and providing weather-tight enclosures.
  2. Opening of interior walls, ceilings and floors necessary for proper installation of new materials, equipment, mechanical or electrical items.
  3. Removing interior walls, ceilings, floor finishes.
  4. Removing doors and frames.
  5. Removing casework and equipment.
  6. Removing existing HVAC system and components, both exposed to view and concealed.
  7. Removing existing plumbing fixtures, piping and components, both exposed to view and concealed.
  8. Removing existing lighting and electrical distribution, switches, outlets, conduit and other devices both exposed to view and concealed.
- B. Interior demolition includes complete wrecking of interior partitions, finishes and structures and removal and disposal of demolished materials, as shown on drawings and herein specified.
- C. The Owner shall have the option of retaining any item removed. The Contractor shall deliver these items to the Owner's designated storage area. Any items not retained by the Owner shall be disposed of offsite by the Contractor. All items are to remain property of the Owner unless specifically designated otherwise.
- D. Some removed items are to be salvaged for re-use. Drawings indicate extent of such work.

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

3.01 PROJECT DEMOLITION CONDITIONS

- A. Conditions of Structures:
1. The Owner assumes no responsibility for actual conditions of structures to be demolished.
- B. Conditions of the structure existing at time of inspection for bidding purposes will be maintained by Owner in so far as possible. However, variations within structure may occur by Owner's removal and salvage operations prior to start of demolition work.

- C. Pollution Controls:
  - 1. Use water sprinkling, temporary enclosures, and other suitable methods to limit dust and dirt rising and scattering in air to lowest practical level.
  - 2. Comply with governing regulations pertaining to environmental protection.
- D. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, and pollution.
- E. Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to condition existing prior to the start of work.
- F. Partial Removal:
  - 1. Items of salvable value to Contractor, and not retained by Owner, may be removed from structure as work progresses. Salvaged items must be transported from site as they are removed.
  - 2. Storage or sale of removed items on site will not be permitted.
  - 3. Store items noted on drawings and specified to be salvaged for use in the project, so as to prevent damage or deterioration.
- G. Disposal of Demolished Materials:
  - 1. Remove from site debris, rubbish, and other materials resulting from demolition operations. Pay all fees related to removal and dumping.
  - 2. Remove and dispose of interior demolition debris off job site.
  - 3. Burning of removed materials from demolished structures will not be permitted.
  - 4. Transport materials removed from demolished structures and dispose of off site.
- H. Traffic:
  - 1. Conduct demolition operations and removal of debris to ensure minimum interference with roads, streets, walks, occupied areas, and other adjacent occupied or used facilities.
  - 2. Do not close or obstruct streets, walks or other occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
- I. Protections:
  - 1. Ensure safe passage of persons around or through area of demolition. Conduct operations to prevent injury to adjacent buildings, structures, other facilities, and persons. Provide protection in accordance with ANSI/NFPA 241.
  - 2. Erect temporary covered passageways as required by the Owner or authorities having jurisdiction.
- J. Use of explosives will not be permitted.
- K. Provide temporary enclosures at doors and other penetrations in walls, necessitated by weather and demolition conditions, and where dust proof partitions are indicated. Enclosures shall be constructed with fire retardant treated lumber, insulated and painted. Joints shall be taped and caulked to prevent dust and debris from migrating beyond construction areas. Maintain enclosures in good repair and remove when no longer needed. Extend partitions to deck.
- L. Provide interior and exterior shoring, bracing, or support to prevent movement, settlement or collapse of structures to be demolished and adjacent facilities to remain.
- M. Repair any damage to property which is to remain in use, or that of any person, or persons on or off site caused by the demolition work without additional expense to Owner.



- N. Use of jackhammers during normal operating hours of the facility will not be permitted.
- O. Where a portion of construction (walls, floors, ceilings, etc.) is indicated to be removed, demolition shall include the removal of any and all items either surface-mounted on it, or concealed within it, unless otherwise indicated to remain or be salvaged for reuse.

3.02 ELECTRICAL

- A. Visit the site before submitting a bid to observe existing conditions.
- B. Work in existing building shall be scheduled well in advance with the Owner. Work shall be performed at such times and under such conditions as suit the convenience of the Owner. Plan the Work to minimize disruption of normal operations.
- C. Remove wiring devices, fixtures, components, electrical equipment, conductors, boxes and conduits not required to remain in service in remodeled areas when this Project is complete.
- D. Reconnect circuits to other panelboards when necessary to complete the renovation.
- E. Remove existing conduit and wire from areas to be remodeled, back to panelboard, cabinet or junction box. Where such Work would not be possible without disturbing areas not being renovated, consult with the Architect prior to performing the Work.
- F. When outlets are covered up or are otherwise rendered inaccessible, all wiring shall be removed to the source. If a circuit that must remain in service is interrupted, it shall be reconnected by the most inconspicuous means so that it remains operational, with the same capacity as before. All building surfaces damaged, and openings left by removal of boxes, conduit, or other equipment shall be repaired. All holes left in junction boxes, switches, panels and other equipment shall be closed.
- G. Where new openings are cut and concealed conduits or other electrical items are encountered, they shall be removed or relocated as required. Where conduit to be removed stubs through floors, walls, and ceilings, such conduit shall be removed to the point where the finished surfaces can be patched so that no evidence of the former installation remains.
- H. Where a circuit is interrupted by removal of a device or fixture from that circuit, install wire and conduit as required to restore service to the remaining devices and fixtures on that circuit. If the interrupted piping is concealed in walls or under floors, an alternate route may be required.
- I. Lighting fixtures, wiring devices, panelboards, and conductors removed shall be offered to the Owner's Representative. If he chooses to retain these items or a part of these items, turn those chosen over to him. Items rejected by Owner's Representative shall be removed from the project site by the Contractor.

3.03 PLUMBING

- A. Visit the site before submitting a bid to observe existing conditions.
- B. Work in existing building shall be scheduled well in advance with the Owner. Work shall be performed at such times and under such conditions as suit the convenience of the Owner. Plan the Work to minimize disruption of normal operations.
- C. Remove piping, fixtures, components, valves, insulation and fittings not required to remain in service in remodeled areas when this Project is complete.

- D. Reconnect piping to provide service when required to complete the renovation.
- E. Remove existing piping from areas to be remodeled, back to service branch. Where such Work would not be possible without disturbing areas not being renovated, consult with the Architect prior to performing the Work.
- F. When outlets are covered up or are otherwise rendered inaccessible, all piping shall be removed to the source. If a fixture that must remain in service is interrupted, it shall be reconnected by the most inconspicuous means so that it remains operational, with the same capacity as before. All building surfaces damaged, and openings left by removal of fixtures, piping, or other equipment shall be repaired. All holes left shall be closed.
- G. Where new openings are cut and concealed piping or other plumbing items are encountered, they shall be removed or relocated as required. Where piping to be removed stubs through floors, walls, and ceilings, such piping shall be removed to the point where the finished surfaces can be patched so that no evidence of the former installation remains.
- H. Where piping is interrupted by removal of a piping or fixture, install piping as required to restore service to the remaining fixtures on that service line. If the interrupted circuit is concealed in walls or under floors, an alternate route may be required. If the interrupted piping is concealed in walls or under floors an alternate route may be required.
- I. Plumbing fixtures, valves, and gages removed shall be offered to the Owner's Representative. If he chooses to retain these items or a part of these items, turn those chosen over to him. Items rejected by Owner's Representative shall be removed from the project site by the contractor.

3.04 HVAC

- A. Visit the site before submitting a bid to observe existing conditions.
- B. Work in existing building shall be scheduled well in advance with the Owner. Work shall be performed at such times and under such conditions as suit the convenience of the Owner. Plan the Work to minimize disruption of normal operations.
- C. Remove piping, ductwork, equipment, components, valves, insulation, fittings and controls not required to remain in service in remodeled areas when this Project is complete.
- D. Reconnect piping and ductwork to provide service when required to complete the renovation.
- E. Remove existing piping and ductwork from areas to be remodeled, back to service branch. Where such Work would not be possible without disturbing areas not being renovated, consult with the Architect prior to performing the Work.
- F. When grilles and diffusers are covered up or are otherwise rendered inaccessible, all ductwork shall be removed to the source. If an HVAC equipment item which must remain in service is interrupted, it shall be reconnected by the most inconspicuous means so that it remains operational, with the same capacity as before. All building surfaces damaged, and openings, left by removal of grilles, piping, or other equipment shall be repaired. All holes left shall be closed.
- G. Where new openings are cut and concealed piping, ductwork, or other HVAC items are encountered, they shall be removed or relocated as required. Where piping, ductwork or controls to be removed stubs through floors, walls and ceilings, such items shall be removed to the point where the finished surfaces can be patched so that no evidence of the former installation remains.

- H. Where piping or ductwork is interrupted by removal of a branch or equipment, install material as required to restore service to the remaining items on that service line. If the interrupted piping or duct is concealed in walls or under floors, an alternate route may be required.
- I. HVAC equipment, valves, and gages removed shall be offered to the Owner's Representative. If he chooses to retain these items or part of these items, turn those chosen over to him. Items rejected by Owner's Representative shall be removed from the project site by the Contractor.
- J. Equipment removed from roof shall include curbs, sleepers, flashing boxes, etc. Install new roof decking to match existing. Install roof insulation and matching membrane system to maintain any roof warranties.
- K. Equipment removed from finished interior spaces shall include patching and restoration to match all adjacent finishes.

3.05 UTILITY DEMOLITION

- A. Utility Services:
  - 1. Maintain existing utilities indicated to remain, keep in service, and protect against damage during demolition operations.
  - 2. Allow no interruption in service unless coordinated with Owner at least 72 hours in advance.
- B. Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to governing authorities.
- C. Disconnect and seal utilities serving each structure to be demolished, or interior area to be demolished, prior to start of demolition work.
- D. If utility service or other services to an occupied area (such as emergency power, heating, medical gas, air conditioning), are to be disconnected, provide temporary or alternative service to that area.
- E. Cap all utility lines terminated by the demolition work in a manner approved by the governmental authorities and utility companies having jurisdiction.
- F. Mark location of disconnected utilities. Identify and indicate capping location on project record documents.

3.06 SUBSURFACE FILLING

- A. Filling Basement and Voids:
  - 1. Completely fill below-grade areas and voids resulting from demolition of structures.
  - 2. Perform filled and compaction in accordance with requirements of Section 31 00 00 - Earthwork.

3.07 PROTECTION

- A. Provide temporary construction in accordance with requirements of Section 01 53 00 - Temporary Construction as required in all areas of demolition work.
- B. Provide levels of protection as deemed necessary by Owner for protection of public into space, project, and site.

END OF SECTION 02 41 19

SECTION 03 30 00 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, material, equipment, special tools, supervision and services required to deliver and place all cast-in-place concrete indicated, noted and detailed on the drawings and specified herein, including (but not limited to) reinforcing steel, anchor bolts, forms and form removal.

1.02 QUALITY ASSURANCE

- A. Comply with the following standards:
  - 1. ACI Standards (latest editions) for construction procedures. Including but not limited to:
    - a. Specifications for Structural Concrete for Buildings (ACI-301).
    - b. Recommended Practice for Hot Weather Concreting (ACI-305).
    - c. Recommended Practice for Winter Concreting (ACI-306).
    - d. Building Code Requirements for Reinforced Concrete (ACI-318-89).
    - e. ACI 302.2: Guide for Concrete Slabs that Receive Moisture-sensitive Floor Coverings.
  - 2. ASTM Standards (latest editions) for material specifications.

1.03 DELIVERY, STORAGE AND HANDLING

- A. Store materials to prevent contamination, deterioration, and weather damage.
- B. Deliver ready-mixed concrete to point destination in conformance to ASTM C94.

1.04 ENVIRONMENTAL REQUIREMENTS

- A. Cold Weather:
  - 1. Comply with ACI 306 when temperature is 40°F or lower.
  - 2. Maximum concrete temperature 90°F, minimum 50°F per ASTM C94.
- B. Hot Weather:
  - 1. Comply with ACI 305.
  - 2. Maximum concrete temperature 90°F.
  - 3. Protect from rapid evaporation by spraying or sheeting.
- C. The Contractor shall consider the timing required for placement of concrete for the entire project. He shall include in his bid all work and costs associated with the proper protection, procedures and materials required for the weather and environmental conditions for the time of year the work is to occur. No additional costs will be borne by the Owner, Architect or their consultants for failure by the Contractor to include these costs in the bid or make reasonable assumptions as to the requirements needed or limitations that may be incurred.

1.05 SUBMITTALS

- A. Concrete Mix Designs:
  - 1. A separate mix design for each class and type of concrete is required.
    - a. Include literature for admixtures.
    - b. Include applicable compliance with referenced ASTM number.

PART 2 - PRODUCTS

2.01 MIX DESIGNS

- A. Design mix with appropriate adjustments for air content and aggregate proportions.

- B. Compressive strength at 28 days (minimum) as indicated on structural drawings, or if not indicated, as listed below:
  - 1. 3,500 psi: Interior slabs on grade. Maximum water to cement ratio of 0.50.
- C. Regardless of any contrary notes on Drawings, in no case shall the water to cement (w/c) ratio exceed 0.50 for slabs scheduled to receive floor finishes. Provide admixtures as required for weather conditions at time of pour. If w/c ratio exceeds 0.50 in quality control test, that area of slab must be removed at contractor's expense and a new slab installed which complies with the proper w/c ratio. All admixtures to be included in mix design submittal.
- D. Slump: Slabs: 4 in. +/- 1 in.

## 2.02 MATERIALS

- A. Portland Cement:
  - 1. ASTM C150-71, Type I or II.
- B. Aggregates:
  - 1. ASTM C33:
  - 2. Coarse Aggregates:
    - a. Clean, tough, durable fragments of uncrushed gravel or crushed stone free from dirt or objectionable matter.
    - b. Size: Maximum 1-1/2" at footings; 1" in slabs.
  - 3. Fine aggregate: Natural sand; clean, sound, hard, durable particles; gradation size No. 1.
- C. Water:
  - 1. Clean, potable and free from injurious amounts of oil, acids, alkalies, organic matter or deleterious substances.
- D. Admixtures:
  - 1. Water Reducing Agent: ASTM C 494, Types as required to provide controlled setting and/or controlled rate of hardening without increase in water/cement ratio or loss in strength.
  - 2. Pozzolan: ASTM C618.
  - 3. Accelerators and retarders: ASTM C 494; permitted only upon approval of Architect/Engineer.
  - 4. Do not use calcium chloride without permission of Architect.
- E. Curing Material:
  - 1. Liquid Membrane: ASTM C309.
  - 2. Acrylic copolymer solution, transparent, quick drying, non-yellowing.
  - 3. Compatible with flooring adhesives.
  - 4. "Kure-N-Seal" by Sonneborn or equivalent.
- F. Reinforcement:
  - 1. Bars: ASTM A 615 Grade 60, Type "S", deformed.
  - 2. Welded Wire Fabric (WWF) or Welded Wire Mesh (WWM): ASTM A 185, 6 x 6 W1.4 x W1.4, or as indicated.
- G. Vapor Barrier:
  - 1. 15 mil polyethylene film slab underlay, per ASTM E1745.

## 2.03 MIXING

- A. Measure and mix materials for ready mixed concrete in conformance with ASTM C94.
- B. Take into account free moisture in the aggregate weight.

2.04 FORM WORK

- A. Provide formwork to conform to shape, lines and dimensions of members indicated on Drawings.
- B. Construct formwork sufficiently tight to prevent leakage.
- C. Construct formwork for exposed smooth surfaces of plywood or other similar smooth material.
- D. Bevel exposed concrete corners 3/4 inch unless otherwise indicated on drawings.
- E. Form coatings:
  - 1. Non-staining.
  - 2. Apply before reinforcing steel is placed.
- F. Tolerances:
  - 1. ACI 347.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Prior to placement of any permanent concrete, footings, slabs or other construction, remove all existing surficial fill, topsoil, organic material, wet soil, loose soil, undesirable soils, abandoned concrete and other materials to the extent indicated by the geotechnical engineer.
- B. Prior to placing concrete, notify all trades to be certain that all sleeves, conduit, chases, etc. are installed and properly located.
- C. Ensure slab subgrade is well drained, of adequate, uniform load bearing nature, and not muddy, soft or frozen.
- D. Dampen subgrade ahead of concreting.
- E. Test Below-slab pipes prior to casting concrete.
- F. Footing excavations shall be drained and firm at time of concrete placement.
- G. Vapor Barrier:
  - 1. Damp proof slab on grade with film underlay between fill and concrete.
  - 2. Lap ends and edges minimum 6" in direction of pour.
  - 3. Install in accordance with ASTM E1643.
  - 4. Provide temporary overlayments as required to protect vapor barrier during slab installation.
  - 5. Installation of vapor barrier under a layer of granular fill may be acceptable in lieu of installation directly under slab, upon written approval of Architect. If vapor barrier is installed under granular fill, vapor barrier must be turned up at edges to prevent vapor migration horizontally. Special precaution must be taken to prevent granular fill layer from becoming saturated prior to pouring slab. Comply with ACI 301 recommendations for installation of vapor barrier using this method.
- H. Verify reinforcement and anchors, expansion joint material and embedded items are secured in position.
- I. Slabs and footings shall have no horizontal joints.  
Any stop in concrete work shall be made with keyed vertical bulkheads.  
All reinforcing shall continue through the joint.

- J. The Architect or his representative shall be given 24 hours notice to inspect placement of reinforcing steel before concrete is placed.
- K. Contractor is responsible for determining maximum floor moisture levels and ph levels acceptable to floor finish manufacturers and installers. Schedule concrete floor slab pours to allow adequate time for moisture to evaporate prior to installing finish flooring. Provide concrete with a water to cement ratio of less than 0.50, and allow minimum 3 months curing time before installing floor finish materials. Do not densify surfaces of slabs to receive moisture sensitive floor finishes to the point that the slab cannot dry to the surface.

3.02 PLACING

- A. Concrete for footings shall be placed the same day excavations are opened. If this is not possible, steps shall be taken to properly and adequately protect the excavation and maintain its integrity and levels of acceptability.
- B. Convey concrete from mixer to form as rapidly as practicable, by methods which will prevent segregation or loss of materials.
- C. Vertical drops: maximum three feet free fall.
- D. Place concrete as nearly as possible to its final position at a rate so it remains plastic and flows readily into position. Proceed with placing as a continuous operation until unit of construction is complete. Use vertical construction joints to avoid horizontal joints between concrete placement.
- E. Do not use retempered concrete or concrete partially hardened or contaminated with foreign material.
- F. Ensure forms and conveyance equipment is clean and free of ice, water, debris and hardened concrete.
- G. All vertical concrete surfaces shall be formed, including all footings.
- H. Provide shear keys in the top of all wall and column footings at concrete walls.

3.03 REINFORCEMENT

- A. Minimum concrete protection for steel reinforcement:
  - 1. 3/4" for slabs.
  - 2. 1-1/2" for walls.
  - 3. 3" for footings.

3.04 CONSOLIDATION

- A. Consolidate concrete with high-frequency vibrators.
- B. Insert vibrators into each 18" lift at intervals not to exceed 12". Insert for sufficient duration to produce complete consolidation without over-vibrating to cause separation.
- C. Remove excess free water collecting on the surface during the vibration before finishing.

3.05 FINISHING: CONCRETE FINISH SCHEDULE

- A. Interior: Hard trowel smooth finish.
- B. The surface of the slab may be sprayed with water at any time during floating and finishing, provided the water is removed before the next machine operation. Do not machine slabs that have the surface glossed by water.

3.06 CURING

- A. Formwork shall remain in place five (5) days before being removed. Remove all formwork in such a manner and at such time as to not damage concrete surfaces and to ensure complete safety to the structure.
- B. Slabs and other horizontal surfaces shall be moist cured for seven days or have a curing compound applied immediately following completion of finishing after water sheen has disappeared.
- C. Moist curing shall be performed by application of polyethylene sheeting per ASTM C171 or continuous wetting of burlap or other type of absorptive mat.
- D. Curing Compounds:
  - 1. Spray or brush uniformly in a single coat immediately after final finishing operation, at rate recommended by manufacturer.
  - 2. Do not use material which discolors concrete or inhibits adherence of other materials.
- E. Meet requirements of hot and cold weather concreting.
- F. For slabs to receive moisture sensitive floor coverings, cure in accordance with recommendations of ACI 302.2.

3.07 PROTECTION

- A. Protect fresh concrete from heavy rains, extreme air temperatures, injurious sun, mechanical injury and other deleterious elements.
- B. If scaling occurs from failure to take protective precautions, repair or replace damaged concrete.

3.08 PATCHING

- A. Do not patch any surface until examination is made by the Architect and permission is given.

3.09 BUILT-IN WORK

- A. Coordinate all openings and chases required in the concrete work and provide all items to be cast into the concrete pour.

3.10 JOINTS

- A. Locate and construct all joints as shown on the Drawings, or if not shown, as specified herein, or if not specified, as directed by Architect.
- B. Construction Joints.
  - 1. May be substituted for control or contraction joints in slabs on grade at the indicated locations of such joints or as approved by the Architect.
  - 2. Provide smooth dowelled joints between all cast sections of slabs on grade as indicated on Drawings, or if not indicated, using #4 smooth rebar at 12" o.c. with one end greased. Use of diamond dowels is permitted only upon written approval of Architect.
- C. Control Joints:
  - 1. Depth: For slabs up to 9" thick, 1" minimum depth using early entry dry cut saws. For slabs thicker than 9", contact Architect for direction on deeper joints.
  - 2. Width: Maximum 3/16".
  - 3. Spacing:
    - a. 4" slab = 12'-0" o.c. maximum.



4. Saw cut joints of slabs and walks shall be made using the early entry dry-cut method.
  5. Where early entry dry cut method cannot be used, saw cut using wet cut method within 24 hours of placing.
  6. For control joints scheduled to receive joint fillers, comply with joint filler manufacturer's recommendations for depth and preparation of joint.
- D. Expansion Joints: Install 1/2" expansion joint filler at concrete pavement joints; hold down below surface or cut the required depth for sealant. Comply with sealant manufacturer's recommendations.
- E. Carry reinforcement across joints in slabs except at expansion joints.

SUBMITTAL CHECK LIST

1. Concrete Mix Designs.
2. Reinforcement Steel Shop Drawings.

END OF SECTION 03 30 00

SECTION 06 10 00 - ROUGH CARPENTRY

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment, special tools, supervision and services required to complete all rough carpentry work indicated, noted and detailed on drawings and specified herein including:
1. Framing, blocking and furring.
  2. Wood treatment.
  3. Fasteners in treated wood.
  4. Blocking as required for items such as casework, cabinets, toilet accessories, lockers, and any other items requiring wood blocking for support, bracing, mounting, and securing in place.

1.02 QUALITY ASSURANCE

- A. Grading Rules:
1. Lumber grading rules and wood species shall conform with Voluntary Product Standard PS-20. Grading rules of the following associations shall also apply to materials produced under their supervision.
    - a. Northeastern Lumber Manufacturer's Association, Inc. (NELMA).
    - b. Southern Pine Inspection Bureau (SPIB).
    - c. West Coast Lumber Inspection Bureau (WCLIB).
    - d. Western Wood Product Association (WWPA).
  2. Plywood shall conform to the following:
    - a. Softwood Plywood - Product Standard PS-1.
    - b. Hardwood Plywood - Product Standard PS-51.
- B. Grade Marks:
1. Identify all lumber and plywood by official grade mark.
  2. Lumber: Grade stamp to contain symbol of grading agency, mill number or name, grade of lumber, species or species grouping or combination designation, rules under which graded, where applicable and condition of seasoning at time of manufacture.
    - a. S-Dry: Maximum 15 percent moisture content.
    - b. MC-5 or KD: Maximum 15 percent moisture content.
    - c. Dense.
  3. Softwood Plywood: Appropriate grade trademark of the American Plywood Association.
    - a. Type, grade, class and identification index.
    - b. Inspection and testing agency mark.
  4. Hardwood Plywood: Appropriate grade mark of qualified inspection, testing, or grading mark.
- C. Testing:
1. ASTM E 84, maximum 25 Flame Spread rating.
- D. Requirements of Regulatory Agencies:
1. Fire Hazard Classification: Underwriter's Laboratories, Inc., for treated lumber and plywood.
  2. Preservative Treated Lumber and Plywood: American Wood Preservers Bureau, Quality Mark.
  3. Pressure Treated Material: American Wood Preserves Bureau Standards.
  4. Span Tables: National Forest Products Association.
  5. Working Stresses: Softwood Lumber, National Design Specification, National Forest products Association.

1.03 SUBMITTALS

- A. Submit the following:
1. Treating Plant Certification:  
Submit certification by treating plant stating chemicals and process used, net amount of salts retained, and conformance with applicable standards.
  2. Preservative Treated Wood:  
Submit certification for water-borne preservative that moisture content was reduced to 19 percent maximum, after treatment.
  3. Fire Retardant Treatment:  
Submit certification by treating plant that fire-retardant treatment materials comply with governing ordinances and that treatment will not bleed through finished surfaces.
  4. Fasteners Product Data:  
Submit manufacturer's published literature and product data sheets.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Immediately upon delivery to job site, place materials in area protected from weather.
- B. Store materials of minimum of 6" above ground on framework or blocking and cover with protective waterproof covering, providing adequate air circulation or ventilation.
- C. Do not store seasoned materials in wet or damp areas.
- D. Protect fire-retardant materials against high humidity and moisture during storage and erection.
- E. Protect sheet materials from corners breaking and surface damage.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Lumber:
1. Dimension:
    - a. Specified lumber dimensions are nominal.
    - b. Actual dimensions conform to industry standards established by the American Lumber Standards Committee and the rules writing agencies.
  2. Moisture Content:
    - a. 19 percent maximum at time of permanent closing of building or structure, for lumber 2" or less nominal thickness.
  3. Surfacing:
    - a. Surface four sides (S4S), unless otherwise shown, or specified.
  4. Framing Lumber:
    - a. 2" to 4" thick, 2" to 4" wide.
    - b. Any commercial softwood species, unless otherwise shown, or specified.
  5. Miscellaneous Lumber:
    - a. Provide wood for support or attachment of other work including cant strips, bucks, nails, blocking, furring, grounds, stripping and similar members.
    - b. Provide lumber of sizes shown or specified, worked into shapes shown on Drawings.
    - c. 15 maximum moisture content for lumber items not specified to receive wood preservative treatment.
  6. Grades:
    - a. General Framing: Standard and Better Grade.
    - b. Plates, Blocking, Bracing and nailers: Utility Grade.
    - c. Miscellaneous Lumber: Construction Grade.

- B. Plywood:
  - 1. Exterior graded plywood where indicated, or where edge or surface is permanently exposed to weather: B-B EXT-APA, graded for treatment where preservative treated plywood is indicated.
  - 2. Plywood Backing Panel: For mounting electrical or telephone equipment, provide fire-retardant treated plywood panels, APA C-D PLUGGED INT with exterior glue, thickness indicated, or if not otherwise indicated, 3/4".
  
- C. Preservative Treated Wood:
  - 1. Waterbourne Salt Preservatives for Painted, Stained or Exposed Natural Wood Products:
    - a. AWPB LP-2, above ground application.
    - b. AWPB LP-22, ground contact application.
  - 2. Treat indicated items and the following:
    - a. Wood sills, sleepers, blocking, furring, stripping, roofing, and similar concealed members in contact with masonry, concrete, or around windows and doors.
    - b. Use **MCA** (Micronized Copper Azole) preservative treatment only.
  
- D. Fire Retardant Treatment:
  - 1. Comply with AWPA Standards for pressure impregnation with fire retardant chemicals.
    - a. Flame Spread: 25 max.
  
- E. Fasteners in Treated Wood:
  - 1. Shall be resistant to corrosion or be protected to resist corrosion.
  - 2. Where sacrificial coatings are applied to fasteners, a minimum coating thickness capable of protecting the fastener for the expected service life of the structure shall be provided. Provide manufacturer's product information, test results, and certifications to substantiate these claims.
  - 3. Coating weights for zinc-coated fasteners shall be in accordance with ASTM A153M or ASTM A641, Supplementary Requirements.
  - 4. Fasteners shall be one of the following:
    - a. Stainless steel.
    - b. Standard Single-dipped, Double-dipped, Hot-dipped, or zinc-coated galvanized steel.
    - c. Silicon bronze.
    - d. Copper.

### PART 3 - EXECUTION

#### 3.01 GENERAL

- A. Discard units of material with defects which might impair quality of work, and units which are too small to fabricate work with minimum joints or optimum joint arrangement.
  
- B. Set carpentry work accurately to required levels and lines, with members plumb and true and accurately cut and fitted.
  
- C. Securely attach carpentry work to substrate by anchoring and fastening as shown and as required by recognized standards. Countersink nail heads on exposed carpentry work and fill holes.
  
- D. Use common wire nails except as otherwise indicated. Use finishing nails for finish work. Select fasteners of size that will not penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting of wood; pre-drill as required.

3.02 INSTALLATION

A. Wood Grounds, Nailers, Blocking and Sleepers:

1. Provide where shown and where required for screeding or attachment of other work. Form to shapes as shown and cut as required for true line and level of work to be attached.
2. Attach to substrates as required to support applied loading. Countersink bolts and nuts flush with surfaces, unless otherwise shown. Build into masonry during installation of masonry work. Where possible, anchor to formwork before concrete placement. Do not use power driven anchors unless approved by Architect.
3. Provide permanent grounds of dressed, preservative treated, key-beveled lumber not less than 1-1/2" wide and of thickness required to bring face of ground to exact thickness of finish material involved. Remove temporary grounds when no longer required.
4. For renovation projects utilizing existing blocking, provide additional blocking as required if existing blocking is inadequate.

B. Apply two brush coats of same preservative used in original treatment to all sawed or cut surfaces of treated lumber.

3.03 TEMPORARY WORK

- A. Provide temporary stairs, ramps, runways, ladders, etc., as required for the purpose of handling materials, personnel and access to the work and temporary exits from the building.

3.04 CUTTING, FITTING AND PATCHING

- A. Include all cutting, fitting and patching of work in connection with other trades which adjoin any part of this work.

SUBMITTAL CHECK LIST

1. Treating plant certification.
2. Preservative treatment certificate.
3. Fire retardant treatment certificate.
4. Fasteners product data.

END OF SECTION 06 10 00

SECTION 06 20 00 - FINISH CARPENTRY

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Carpentry work which is exposed to view, as shown on the Drawings and specified herein, including:
1. Solid Surface transaction top.
  2. Interior running and standing trim.
  3. Aluminum Sliding Window Assembly.

1.02 QUALITY ASSURANCE

- A. Comply with the latest edition of the Architectural Woodwork Standards (AWS) "Quality Standards". References to Premium, Custom, or Economy in this specification are to be as defined in this publication.
- B. Factory mark each piece of lumber and plywood with grading information, except for surfaces to receive transparent finish.
- C. Mark each unit of fire-retardant treated lumber and plywood with Underwriter's Laboratory Classification marking.

1.03 SUBMITTALS

- A. Submit the following:
1. Shop Drawings of all finish carpentry items of sufficient detail and scale to show compliance with design intent and specified quality grades.
  2. Samples of all finish materials for colors, patterns and finishes as specified.  
For colors, patterns and finishes not specified, submit samples of manufacturer's entire selection for selection by Architect.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Protect woodwork during transit, delivery, storage and handling to prevent damage, soiling and deterioration.
- B. Do not deliver woodwork, until painting, wet work, grinding and similar operations which could damage, soil or deteriorate woodwork have been completed in installation areas.

1.05 PROJECT CONDITIONS

- A. Conditioning: Do not install woodwork until required temperature and relative humidity have been stabilized and will be maintained in installation areas.
- B. Maintain temperature and humidity in installation area as required to maintain a moisture content of installed woodwork within a 1.0 percent tolerance of optimum moisture content, from date of installation through remainder of construction period.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Solid Wood for Transparent Finish:
1. Natural Birch, AWS Premium Grade.
  2. Rotary Cut as selected by Architect.

3. Veneer thickness shall not be less than 1/20 in. before sanding.
  4. Veneer matching to be determined by fabricator, for best visual effect, depending upon flitch width and grain character.
  5. Refer any questions and about best visual effect to Architect for resolution as work progresses.
- C. Hardwood Plywood:
1. Product Standard PS 51.
- D. Softwood Plywood:
1. Product Standard PS 1.
- E. Particle Board:
1. Medium Density, Type 1-M-2.
  2. Thickness as indicated on the Drawings. If not indicated, provide 3/4" standard.
- F. Provide kiln-dried (KD) lumber with an average moisture content range of 6% to 11% for interior work. Maintain temperature and relative humidity during fabrication, storage and finishing operation so that moisture content values for woodwork at the time of installation do not exceed 5% to 10%.
- G. Miscellaneous Materials:
1. Provide nails, screws and other anchoring devices to provide secure, concealed attachment.
  2. Where finish carpentry is exposed to exterior or areas of high humidity, provide fasteners with hot-dipped zinc coating (ASTM-A153).
- H. Fire Treated Wood:
1. ASTM - E84
  2. Flame Spread - 25 max.
  3. Kiln-dried after treatment to 15% max. moisture content.
- I. Fasteners and Anchors:
1. Size and type as required for each use.
  2. Provide non-ferrous or hot-dip galvanized anchors and fasteners for all exterior applications.
- K. Solid Surface Transaction Top:
1. Acceptable Manufacturers and Products:
    - a. "Dupont", "Corian".
    - b. "Wilsonart Engineered Surfaces".
    - c. "Formica", "Formica Solid Surfacing".
    - d. "US Surfaces," "Livingstone"
  2. 1-1/2" total thickness provided from one of the following, depending on color availability:
    - a. 3/4" thick solid surface material laminated atop 3/4" plywood or hardboard with edge bandings of 3/4" solid surface material.
  3. Provide 1/2" thick apron below entire exposed edge of sill, 2" deep unless indicated otherwise.
  4. All sills and aprons to have eased exposed edges.
  5. Extend sill 1/2" beyond face of apron, unless indicated otherwise.
  6. Color as indicated on Drawings, or to be selected by Architect from manufacturer's entire selection.
- L. Aluminum Sliding Window Assembly:
1. "Knappe and Vogt" 892 Roll-Ezy Complete Assembly
  2. Provide nylon wheels and all necessary trim and accessories for a complete installation of bi-pass window unit.

3. Color: Clear Anodized.
4. Size of opening: as Indicated on Drawings.

## 2.02 FABRICATION

- A. Fabricate standing and running trim of solid wood for transparent finish in accordance with AWS Section 300, Premium Grade.
- B. Fabricate standing and running trim to dimensions, profiles, and details shown. Rout or grove reverse side (backed-out) of trim members to be applied to flat surface, except for members with ends exposed in finish work. Miter corners and reinforce. Miters shall be well formed and in true alignment.
- C. Fabricate flush veneer laminated paneling on interior hardwood plywood with veneer for transparent finish specified. Veneers shall be center matched. Panels shall be book matched and where they occur end to end they shall be end matched. Paneling shall conform with AWS Section 500A, Premium Grade.
- D. Provide solid hardwood edge banding on all exposed edges of finish carpentry.

## PART 3 - EXECUTION

### 3.01 PREPARATION

- A. Condition wood materials to average prevailing humidity of installation area prior to installing.
- B. Discard unsuitable materials and remove from job site.

### 3.02 INSTALLATION

- A. Install work in as large sizes as practical, in order to minimize the number of joints. Install trim using full length pieces from largest length lumber available. Stagger joints in adjacent and related members.
- B. Install work plumb, level, true and straight. Shim as required using concealed shims.
- C. Scribe and cut work to fit adjoining surfaces.
- D. Miter trim at corners, cope at returns. Use scarf joints for end to end joints.
- E. Install fire-retardant treated wood in accordance with manufacturer's directions and as required to meet required classification or rating. Provide special fasteners, molding, adhesives and other accessories for rating and fire-retardant material indicated.
- F. Anchor finish carpentry work to anchorage devices or blocking built-in or directly attached to substrates. Secure to grounds, stripping and blocking with countersunk, concealed fasteners and blind nailing as required for a complete installation. Except where pre-finished matching fastener heads are required, use fine finishing nail for exposed nailings, countersunk and filled flush with surface, so that nail is not noticeable after surface is painted or stained.

### 3.03 ADJUSTING AND CLEANING

- A. Repair or replace defective finish carpentry work to eliminate functional and visual defects.
- B. Adjust joinery for uniform appearance.



C. Refer to Division 9 sections for final finishing.

3.04 PROTECTION

A. Protect all work from damage until time of substantial completion.

B. Maintain conditions necessary to prevent deterioration of work.

C. Repair or replace damaged work and finishes.

SUBMITTAL CHECK LIST

1. Shop Drawings.
2. Samples.

END OF SECTION 06 20 00

SECTION 06 40 00 - ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Architectural Woodwork as shown on the Drawings and specified herein, including:
1. Custom Cabinets and Casework:
    - a. Wood Cabinets - Plastic Laminate Faces.
    - b. Plastic Laminate Countertops for Custom Cabinets and Casework.

1.02 QUALIFICATIONS

- A. Supplier's Qualifications:
1. Shop of manufacturer should be certified by the Architectural Woodwork Standards (AWS), and be capable of providing proof of such certification upon request.

1.03 QUALITY ASSURANCE

- A. Comply with the latest edition of the Architectural Woodwork Standards (AWS) "Quality Standards". References to Premium, Custom, or Economy in this specification are to be as defined in this publication.
- B. Provide items and work of the quality grade indicated, or if not indicated, of Custom grade.
- C. Provide items and installation of straight, flat, level, plumb, and true quality and craftsmanship. Items provided that create an installation not acceptable for these reasons, or otherwise deemed unacceptable for purposes of aesthetics or maintenance, shall be removed and replaced by the Contractor without additional costs to the Owner. Final determination shall be made by the Architect.
- D. Any inconsistencies or irregularities in the surface or product will be cause for rejection. All rejected products shall be removed and replaced with new at no additional cost to the Owner. The evaluation of acceptance and rejection is at the sole discretion of the Architect.

1.04 SUBMITTALS

- A. Samples:
1. Complete range of manufacturer's standard finishes where colors or finishes are not specified.
  2. Samples of specified items only, where colors or finishes have been indicated.
  3. Samples of each type, material, color, pattern and finish of all countertops and surfaces specified.
- B. Shop Drawings:
1. Field measurements shall be taken to verify that architectural woodwork, cabinets and casework will fit into designed space. Entryways, corridors, and door openings shall be verified to ensure that the equipment be manufactured in a manner to permit it to be moved through properly into place.
  2. Show layout of architectural woodwork, cabinets and casework with product reference numbers, details of construction, dimensions, elevations, rough-ins, materials, finishes, hardware, and accessories.
  3. Reference Architect's nomenclature of product identification as indicated on the Drawings.
  4. Shop drawings on all architectural woodwork items, of sufficient detail and scale to determine compliance with design intent and specified quality grades.
  5. Manufacturer's descriptive literature of specialty items not manufactured by the architectural wood worker.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Protect woodwork during transit, delivery, storage and handling to prevent damage, soiling and deterioration.
- B. Do not deliver woodwork, until painting, wet work, grinding and similar operations which could damage, soil or deteriorate woodwork have been completed in installation areas.
- C. Deliver architectural woodwork, cabinets and casework as needed for immediate installation whenever possible. Any items delivered ahead of time for installation shall be stored by Contractor until project areas are ready for installation.

1.06 PROJECT CONDITIONS

- A. Conditioning: Do not install woodwork until required temperature and relative humidity have been stabilized and will be maintained in installation areas.
- B. Maintain temperature and humidity in installation area as required to maintain a moisture content of installed woodwork within a 1.0 percent tolerance of optimum moisture content, from date of installation through remainder of construction period.

1.07 WARRANTY

- A. Architectural woodwork, cabinets and casework contractor shall guarantee to replace or repair, at no expense to the Owner, all materials of this contract found to be defective within one year of acceptance (Substantial Completion), due to defective materials and/or workmanship.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Hardwood Plywood:
  - 1. Product Standard PS 51.
- B. Softwood Plywood:
  - 1. Product Standard PS 1.
- C. Plastic Laminate:
  - 1. Acceptable Manufacturers:
    - a. "Formica"
    - b. "Wilsonart"
    - c. "Nevamar"
    - d. "Pionite"
  - 2. Comply with NEMA LD-3 for type, thickness, color, pattern, and finish as indicated for each application.
  - 3. Provide high pressure laminate in grades indicated for the following types of surfaces:
    - a. Horizontal Surfaces High-pressure decorative laminate HGS-50 (0.050").
    - b. Vertical Surfaces: High-pressure decorative laminate VGS-28 (0.028").
    - c. Exposed Cabinet Body Exterior: High-pressure decorative laminate VGS-28 (0.028").
    - d. Door and Drawer Fronts: High-pressure decorative laminate VGS-28 (0.028").
    - e. Exposed Cabinet Body Interior: High-pressure decorative laminate VGS-28 (0.028").
    - f. Semi-Exposed Cabinet Body Interior: Thermally-fused melamine laminate with CL-20 cabinet liner at surface required to achieve true balanced construction, manufacturer's standard "white" in color.
    - g. Interior Concealed Surfaces: Thermally-fused melamine laminate, manufacturer's standard "white" in color.

4. Balanced construction of both faces of surfaces is required.
5. Laminate grain patterns are to run vertically and be vertically matched within each unit.
6. Chemical resistant type finish protection where specified, to equal or exceed "Formica", "Chemtop".

D. Particle Board:

1. Industrial grade engineered board core material.
2. 47 pound density, non-telegraphing.
3. 3/4" thick, medium density particleboard, Type 1-M-2.
4. 1/2" thick minimum, medium density particleboard, Type 1-M-2, under solid surfacing countertops.

E. Accessories:

1. Fillers, tops, end and side closures; finish to match adjacent cases, cabinets and countertops.
2. Finished back and end panels as required or indicated.
3. Back splashes on all countertops. End splashes only as specified.

F. Plastic Laminate Shelving:

1. Fully adjustable, typically.
2. Fixed where required for unit stability and/or positive door latching.
3. 1" actual thickness over 36" wide, 3/4" actual thickness less than 36" wide.

G. Edge Trim:

1. Material:
  - a. 1mm (.020" actual) rigid PVC banding, stain finish, machine applied.
  - b. 3mm rigid PVC banding, stain finish, machine applied with 3mm radius edge profile.
2. 3mm PVC banding at edges of doors and drawers.
3. 3mm PVC banding at edges of countertops, including splashes, typical.
4. 1mm PVC banding at edges of shelves, front and back.
5. 1mm PVC banding at all other case and leading edges.

H. Fasteners and Anchors:

1. Size and type as required for each use.
2. Provide non-ferrous or hot-dip galvanized anchors and fasteners for all exterior applications.

R. Colors:

1. Colors as selected from manufacturer's entire selection, no limit on number of colors selected.
2. If colors are indicated on the Drawings, colors and patterns must be matched.
3. For purposes of color selections, countertops shall include all splashes, aprons, supports and cleats where no base units are provided, unless noted otherwise.
4. For purposes of color selections, all fillers and panels shall match adjacent exposed cabinet faces.

2.02 HARDWARE

- A. Pulls for drawers and doors shall be of clean, modern design offering a comfortable hand grip and shall attach to drawer or door with machine screws on 4" centers.  
Pulls shall be of extruded aluminum with satin lacquer finish.  
All pulls shall be centered on all drawer fronts.
- B. Latching assembly for tall case double swinging doors shall consist of an eccentric plate operating two 1/8" x 5/8" plated vertically operating locking bars. Each bar shall operate through an extruded nylon guide and, when locked, shall engage a strike plate providing positive latching for the left hand door. The lock attached to the right hand door shall operate a bolt which, when locked, shall overlap the left

- hand door providing secure locking. Single doors shall be locked to case sides.
- C. Hinges shall be five knuckle institutional type heavy-duty hinges, concealed. Hinges shall be 2-1/2" chrome, satin finish. Hinges are to be mounted to door and case with not less than three screws per wing.
  - D. Catches shall be provided on swinging doors and shall be a spring-loaded nylon roller type.
  - E. Provide cork, plastic, or rubber type silencers on all drawers and doors.
  - F. Door and Drawer Locks:
    - 1. Locks shall be standard disc tumbler with removable core (cam style), master keyed and furnished with two keys per lock.
    - 2. Locks used for double door applications shall be capable of securing both doors simultaneously without the need for additional elbow or deadbolt catches or bolt on the passive door.
    - 3. Furnished with two keys per lock. Master key as required.
    - 4. Unless otherwise specified, key casework per the following requirements:
      - a. Exam rooms cabinets shall be keyed alike so that one key operates all exam room locks.
      - b. Locks shall be provided at all other locations noted on Drawings.
      - c. Provide grandmaster key to operate all locks of all master keys for all spaces.
  - G. Provide epoxy coated steel drawer slides with nylon rollers and self-closing feature at all standard and file drawers. Drawer slide load capacity to be 100 lb. static load rating, minimum and 150 lb. static load rating, minimum at all file drawers. Provide with full extension of drawer body beyond the face of the cabinet; 3/4 extension slides are not acceptable.
  - H. Drawer stops shall be provided on all drawers to prevent inadvertent removal. Stops shall be automatic type, zinc plated steel.
  - I. Shelf supports shall be die-formed to insert into pre-drilled holes on interior of cases and cabinets. Supports shall provide shelf adjustment on 32 mm centers. Shelf supports shall be plated steel. Shelves longer than 48" shall have additional support at center and at 24" maximum spacing otherwise.
  - J. Chain stops shall be provided at the top of all doors to all tall cabinets. Provide chain stops at the top of all doors to all base and wall cabinets that open directly into a wall surface or obstruction. Finish of stops to match hinges.

### 2.03 FABRICATION

- A. Custom Cabinets and Casework:
  - 1. Fabricate in compliance with AWS Premium Grade for all cases and cabinets.
  - 2. Fabricate in compliance with AWS Premium Grade for plastic laminated tops.
  - 3. Conform to Full Flush Overlay design details for all doors and drawers.
  - 4. Fabricate in shop in largest units possible.
  - 5. Machine for all hardware in shop.
- B. Joinery:
  - 1. Handwrap fluted dowel construction.
  - 2. 8mm minimum.
  - 3. Doweled and glued.

### PART 3 - EXECUTION

3.01 PREPARATION

- A. Field measure all areas to receive architectural woodwork prior to fabrication. Provide any necessary closures and trim to fit the items to enclosing walls. Provide other trades with information necessary for proper completion of related work.
- B. Not all details of millwork are shown on the Drawings. Utilize the most advantageous manufacturing processed to achieve the quality and design intent indicated.
- C. Install architectural woodwork only after flooring and wet work have been finished and proper heat and ventilation have been provided to maintain a uniform heat with not more than 50 percent relative humidity. Allow 7 days of storage of architectural woodwork in area in which it is to be installed to permit wood to reach optimum moisture content.
- D. All laminated doors and drawers to be laminated all sides with GP-50, 0.50" thick.

3.02 INSTALLATION

- A. Exercise care to avoid damage to finished surfaces during handling and erection. Repair all damaged surfaces and blemishes arising from such operation. Replace items which cannot be satisfactorily repaired.
- B. Install paneling in correct position with concealed mechanical fastenings. Provide a minimum of nine (9) mechanical fasteners per wall panel unit, installed in such a way as to draw the panel uniformly tight to the supporting framework.
- C. Install all scribe strips accurately fitted to adjacent surfaces and securely anchored in position.
- D. Field modify architectural woodwork to accommodate conduits, piping, etc., in a neat and workmanlike manner.
- E. Attach all casework to floors and walls and anchor by concealed bolts or wood screws into inserts on floors and grounds, blocking, and nailers on walls. Provide all grounds, blocking, and nailers as necessary for all items. Trim and finish cabinets with scribe members for a neat and finished installation. Furnish hardware as specified. Equip each cabinet door with cabinet hinges, silencers, magnetic catch and pull. Mount each drawer on drawer slides and provide with a pull and silencers. Install adjustable standards and supports for adjustable shelves.
- F. Install casework so that doors will fit openings properly and be accurately aligned. Adjust hardware to center doors and provide unencumbered operation.

3.03 ADJUSTING AND CLEANING

- A. Repair damaged and defective woodwork properly to eliminate defects functionally and visually; where not possible to repair properly, replace woodwork. Adjust joinery for uniform appearance.
- B. Clean hardware, lubricate and make final adjustments for proper operation.
- C. Clean all woodwork and cabinets on exposed and semi-exposed surfaces, inside and out. Touch-up shop-applied finishes to restore damaged or soiled areas. Clean all plastic laminate with mild abrasive cleaner and polish with "Cabinet Magic" or similar laminate polish product.
- D. Complete the finishing work specified as work of this section, to whatever extent not completed at shop or prior to installation of woodwork.

3.04 PROTECTION

- A. Protect architectural woodwork so that it is without damage or deterioration at time of substantial completion.

SUBMITTAL CHECK LIST

1. Samples.
2. Shop Drawings.
3. Manufacturer's Literature.

END OF SECTION 06 40 00

SECTION 07 21 00 - INSULATION

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Extent of insulation work is indicated on the Drawings and specified herein.
- B. Applications of insulation specified in this section include the following:
  - 1. Batt/Blanket Sound Insulation.

1.02 QUALITY ASSURANCE

- A. Fire and Insurance Ratings:  
Comply with fire-resistance, flammability and insurance ratings indicated, and comply with governing regulations as interpreted by authorities.

1.03 SUBMITTALS

- A. Product Data:
  - 1. Manufacturer's specifications and installation instructions for each type of insulation required.
  - 2. Material Safety and Data Sheets (MSDS).

1.04 DELIVERY, STORAGE AND HANDLING

- A. Do not allow insulation materials to become wet, soiled, or covered with ice or snow. Comply with manufacturer's recommendations for handling, storage and protection during installation.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Batt/Blanket Sound Insulation (formaldehyde, acrylic and dye free):
  - 1. Fiberglass Batts.
    - a. Provide one of the following approved products:
      - 1). "Owens Corning" Sound Attenuation Batts Fiber Glass.
    - b. Unfaced.
    - c. Continuous rolls in width of 16" or 24", as required to accommodate building component spacing.
    - d. Thickness to completely fill stud space.  
At a minimum, provide 3-1/2" thickness to provide NRC value of 1.00 minimum.
    - e. Friction fit between studs at partition walls, or as indicated on the drawings.
  - 2. Mineral Wool Batts.
    - a. Provide one of the following approved products:
      - 1). "Owens Corning" Sound Attenuation Fire Batts (Mineral Wool).
      - 2). "Thermafiber" Safing Insulation.
    - b. Unfaced.
    - c. 48" lengths in width of 16" or 24", as required to accommodate building component spacing.
    - d. 3" thick minimum to provide NRC value of 1.05 minimum.
    - e. Friction fit between studs at rated partition walls, or as indicated on drawings.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Installer must examine substrate and conditions under which insulation work is to be performed and must notify Contractor in writing of unsatisfactory conditions. Do not proceed with insulation work until unsatisfactory conditions have been corrected.



3.02 INSTALLATION

A. General:

1. Comply with manufacturer's instructions for particular conditions of installation in each case. If printed instructions are not available or do not apply to project conditions, consult manufacturer's technical representative for specific recommendations before proceeding with work.
2. Extend insulation full thickness as shown over entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation.
3. Apply a single layer of insulation of required thickness, unless otherwise shown or required to make up total thickness.

b. Cavity-Wall Insulation:

1. Fit courses of insulation between wall ties and other confining obstructions in cavity, with edges butted tightly both ways.

SUBMITTAL CHECK LIST

1. Product Data.

END OF SECTION 07 21 00

SECTION 08 11 13 - STEEL DOORS AND FRAMES

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Hollow metal doors and frames as shown on the Drawings and specified herein, including:
1. Hollow steel doors and frames.
  2. Hollow steel frames for wood doors.
  3. Rough bucks, frame reinforcing, door reinforcing, door insulation, closer reinforcements, clip angles and anchorage.
  4. Factory prime paint finish.

1.02 REFERENCES

- A. The following standards, tests and publications may be referred to herein and are applicable to this Section:
1. ANSI A250.8-1998/SDI-100 - Recommended Specifications - Standard Steel Doors and , Steel Door Institute, unless herein specified.
  2. UL 10C-98 and UBC 7-2 – Positive Pressure Fire Tests of Door Assemblies.
  3. NFPA-80-1999 – Standard for Fire Doors and Windows.
  4. NFPA-101-1997 – Life Safety Code.
  5. NFPA-105 – Standard for Smoke and Draft Control Assemblies.
  6. ASTM-A 366-95A – Specification for Steel, Sheet, Carbon, Cold-Rolled, Commercial Quality.
  7. ASTM-A 568-95 – Specification for Steel, Sheet, Carbon, and High Strength, Low-Alloy, Hot-Rolled, and Cold-Rolled.
  8. ASTM-A 569-91a – Specification for Steel, Carbon, (0.15 maximum percent), Hot-Rolled Sheet and Strip Commercial Quality.
  9. ASTM-A 924-95 – General Requirements for Steel Sheet, Metallic Coated by the Hot-Dip Process.
  10. SDI-105-92 – Recommended Erection Instructions for Steel Frames.
  11. ANSI A115.1-18 - Specification for Door and Frame Preparation for Hardware.
  12. ANSI A156.7 - Standard Template Hinge Dimensions.

1.03 SUBMITTALS

- A. Product Data:
1. Manufacturer's specifications for fabrication and installation, including data substantiating products comply with requirements.
  2. Manufacturer's published product data sheets.
- B. Shop Drawings:
1. Show type of door and frame for each opening, sections of all typical members, dimensioned elevations, anchors, reinforcements and other required components.
  2. Preparation for installing hardware and glazing.

1.04 QUALITY ASSURANCE

- A. Provide doors and frames complying with Steel Door Institute "Recommended Specifications: Standard Steel Doors and Frames" (SDI-100) and as herein specified.
- B. Wind Load Performance Requirements: Comply with wind load requirements of the applicable State Building Code. Deflection shall not exceed 1/175 of span.

- C. Supplier Qualification: Qualified direct distributor of products to be furnished. The distributor shall have in their regular employment an A.H.C./C.D.C. or person of equivalent experience who will be available at reasonable times to consult with the Architect, Contractor and/or Owner regarding any matters affecting the total door and frame openings.
- D. Installer Qualification: Experience with installation of similar materials.
- E. Fire-Rated Door Assemblies: Where fire-rated door assemblies are indicated or required, provide fire-rated door and frame assemblies that comply with NFPA 80 "Standard for Fire Doors and Windows", and have been tested, listed, and labeled in accordance with ASTM E152 "Standard Methods of Fire Tests of Door Assemblies" by nationally recognized independent testing and inspection agency acceptable to authorities having jurisdiction.
  - 1. Oversize Fire-Rated Door Assemblies: For door assemblies required to be fire-rated and exceeding sizes of tested assemblies, provide certificate or label from approved independent testing and inspection agency, indicating that door and frame assembly conforms to requirements of design, materials and construction as established by individual listings for tested assemblies.
  - 2. Temperature Rise Rating: At stairwell enclosures, provide doors which have Temperature Rise Rating of 450 degrees F maximum in 30 minutes of fire exposure.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver, handle and store doors and frames at the job site in such a manner as to prevent damage.
- B. Remove all damaged or otherwise unsuitable doors and frames.
- C. Deliver hollow metal doors in manufacturer's protective covering. Handle hollow metal with care to prevent damage.
- D. Door Storage: Store doors in upright position, under cover. Place doors on at least 4 inch high wood sills or on floors in manner that will prevent rust and damage. Do not use non-vented plastic or canvas shelters which create humidity chamber and promote rusting. If corrugated wrapper on door becomes wet, or moisture appears, remove wrapping immediately. Provide 1/4 inch space between doors to promote air circulation.
- E. Frame Storage: Store frames under cover on 4 inch wood sills on floors in manner that will prevent rust and damage. Do not use non-vented plastic or canvas shelters which create humidity chamber and promote rusting. Store assembled frames in vertical position, 5 units maximum in stack. Provide 1/4 inch space between frames to promote air circulation.
- F. Deliver doors and frames to the jobsite in stages or shipments as required for phasing, and in a timely manner so as not to delay progress of other trades.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS:

- A. Provide products, as approved by the Architect, by one of the following acceptable manufacturers:
  - 1. Atlas Companies.
  - 2. CECO Door Products.
  - 3. Curries.
  - 4. Deansteel Manufacturing Company, Inc.
  - 5. Fenestra.
  - 6. Kewanee Corporation.
  - 7. Mesker.
  - 8. Metal Products.

9. Pioneer Industries, Inc.
10. Republic Builders Products.
11. Steelcraft Manufacturing Company.

## 2.02 MATERIALS

- A. Cold-Rolled Steel Sheets:
  1. Commercial quality, stretcher leveled flatness, cold-rolled steel, free from scale, pitting or other surface defects.
  2. Complying with ASTM A 366 and ASTM A568.
- B. Supports and Anchors:
  1. Fabricate of not less than 16 gauge galvanized sheet steel.
  2. Provide all blocking, backings and supports in all horizontal and vertical members as required for reinforcing of all door hardware as specified in Section 08710.
- C. Inserts, Bolts and Fasteners:
  1. Manufacturer's standard units, except hot-dip galvanize items to be built into exterior walls.
- D. Primer:
  1. For steel surfaces, use rust-inhibitive zinc oxide primer suitable as a base for specified finish paints.

## 2.03 FABRICATION

- A. General:
  1. Fabricate hollow metal work to be rigid, neat in appearance and free from defects, warp, or buckle.
  2. Accurately form metal to required sizes and profiles.
  3. Weld exposed joints continuously; grind and dress smooth.
  4. Provide doors and frames bearing UL labels as scheduled. Construction similar to specified hollow metal work, modified to meet Underwrites Laboratories, Inc. requirements.
- B. Galvanealed Steel Sheets:
  1. ASTM A924, A60 zinc coating.
  2. Internal reinforcing may be manufactured of hot rolled pickled and oiled steel per ASTM-A569.
- C. Minimum Gauges of Hollow Metal:
  1. Frames:
    - a. 16 gauge: Interior door frames.
    - b. 16 gauge: Typical labeled interior frames.
    - c. 16 gauge: Interior glazed window and opening frames.
  2. Doors:
    - a. 18 gauge: Interior doors.
    - b. 18 gauge: Typical labeled interior doors.
  3. Accessories:
    - a. 20 gauge: Trim members.
  4. Provide heavier gauges at doors, frames and accessories as required by fire rating label, details or specific condition.
  5. Entire frame, sidelight and transom unit shall be of the same gauge.
- D. Doors:
  1. Form face sheets in smooth seamless unbroken surface. Construct doors with smooth flush surfaces, without visible joints or seams on exposed faces or stile edges. Interior and exterior door edge seams shall be full height wire welded and ground smooth.
  2. Reinforce, stiffen and sound deaden.

3. Stiffen face sheet with 20 gauge steel stiffener reinforced vertically, full height and width, spot welded to both face sheets. Stiffeners welded together top and bottom.
4. Close top and bottom edges of interior and exterior doors with continuous recessed flush steel channel minimum 16 gauge, extending full width of door, and spot welded to both faces. Provide drain holes in bottom closure of exterior doors.
5. Frame openings for glazing and provide cut-outs for glass and louvers with stops as shown. Form beads of 20 gauge steel; locate on inside of opening.
6. Insulate core of all exterior doors, whether indicated or not, and interior doors where indicated:
  - a. Insulate with 1 lb minimum density insulation.
  - b. Minimum insulation value R-2 minimum.
7. Labeled Doors: Insulate as required by Underwriters Laboratories. Build in special hardware and provide astragals as indicated. At one hour and at 1-1/2 hour doors at enclosures, maximum transmitted temperature end point shall not exceed 450 degrees F above ambient at end of 30 minutes of fire exposure per U.L.
8. Exterior Hollow Metal Door Louvers: Fabricate louver units of 16-gauge galvanized steel sheets with stationary, weatherproof Z-shaped blades and U-shaped frames, not less than 1-3/8 inch thick. Space louver blades not more than 1-1/2 inch o.c. Assemble units by welding. Provide insect screen on interior side of frame, consisting of 14 by 18 wire mesh in rigid, formed metal frame.
9. Interior Hollow Metal Door Louvers: Fabricate of 20-gauge cold-rolled steel sheets with stationary sightproof inverted V-shaped blades and U-shaped frames. Space louver blades not more than 3 inches o.c. Assemble units by welding.
10. Typical Reinforcement: Provide as required for hardware items. For lock reinforcement, provide manufacturer's standard reinforcement. Provide 12 gauge reinforcement for escutcheons or roses. centering clips to hold lock case in alignment. For door checks, provide 14 gauge channel type reinforcements, 3-1/2 inch deep by 14 inches long, or as required. Hinge reinforcement to be one piece 14 gauge continuous channel welded to the door. Reinforce doors for surface items such as surface and semi-concealed closers, brackets, surface holders and door stops. Drilling and tapping installation of these surface items shall be done in field by hardware installer.
11. Provide to design indicated including: Flush panel doors, flush panel with cut-out as indicated, stile and rail type, stile and rail with door louver.
12. Finish: Provide prime coat finish on doors. Thoroughly clean off rust, grease and other impurities. Grind welds smooth, no marks shall show. Apply metallic filler as required to fill cracks and joints and to level any weld areas or similar imperfections. Sand filler coat smooth.
13. **All exterior metal doors to be Galvanealed Steel Sheets.**

E. Frames:

1. Welded Frames. Knockdown frames not permitted, except where specifically indicated by Architect.
2. Close corner joints tight with trim faces mitered and continuously welded, ground smooth.
3. Provide dust cover boxes for hinge and strike plate cutouts and at all other hardware mortises.
4. Weld temporary steel spreader to feet of both jambs, or strap pairs with heads inverted, as bracing during shipping and handling.
5. Rated frames where indicated on drawings and at all rated door openings.
6. At masonry, provide wire or masonry "T" anchors approximately 24 inches on center.
7. Provide and secure galvanized steel drip cap at all exterior doors, field painted to match frame.
8. Silencers: Provide specified silencers, except where stop does not occur and at smoke gasketed openings, 3 per jamb at single door and one for each door at double doors.
9. Extensions: Reinforce transom bars or mullions as necessary to provide rigid installation. Where required (as at multiple openings) to stabilize large frames, provide frame or mullion extensions to anchor to structure above, proper size to fit within overhead construction. Provide angle clips to fasten to structure.
10. Mullions: Provide mullions, straight and without twist, of tubular design. No visible seams will be accepted. For removable mullions provide reinforcing at frame head.

11. Clearances: Provide and be responsible for proper clearances at metal frames, including for weatherstripping, soundstripping and smoke gasketing. Glass clearance shall be thickness of glass plus clearance each side (1/8 inch minimum exterior - 1/16 inch minimum interior), adjust for installation, glass thickness to allow for glazing and sealant. Where sealed double glazing is indicated, provide rebates minimum of 3/4 inch and provide 1/4 inch clearance at glass edges. Where units fit around concrete blocks (blocks built into frames) obtain actual dimensions of blocks being used to establish minimum clearances.
  12. Stops: Set with countersunk or Jackson head screws.
  13. Labeled Frames: Construct in accordance with requirements for labeled work. Attach proper U.L. label, Warnok Hersey. "B" labeled frames shall be 1-1/2 hour construction.
  14. Joinings: Furnish frames mitered, or coped, and continuously face welded. Grind smooth, and conceal joints for a seamless appearance. Touch up welded surfaces with manufacturer's standard prime paint.
  15. Workmanship: Fabricate so no grind marks, hollow or other out-of-plane areas are visible. At joints of intermediate members (such as mullions and transom bars), provide tight joining, neatly accomplished without holes, burned out spots, weld build up or other defacing work. Fill to close cracks and to preserve shapes. Tightly fit loose stops, to hairline joints.
  16. Finish: Clean frames by degreasing process and apply thorough coating of baked-on primer, covering inside as well as outside surfaces. At galvanealed frames, coat welds and other disrupted surface with zinc-rich paint containing not less than 90 percent zinc dust by weight.
  17. **All exterior metal frames to be Galvanealed Steel Sheets.**
- F. Hardware Preparation:
1. Mortise, reinforce, drill and tap doors and frames for mortised hardware.
  2. Prepare strike jamb for 3 silencers on door side.
  3. Typical Reinforcing: Provide minimum hinge reinforcement 3/16 inch by 1-1/2 inch by 10 inch. Provide similar reinforcement for hardware items as required to adequately withstand stresses, minimum 12 gauge, including channel reinforcement for door closers and closer arms, door holders and similar items. Provide reinforcement and clearances for concealed in-head door closers and for mortise locks, where applicable.
  4. Anchorage: Provide standard and special anchorage items as required.
  5. Cover Plates: For hinge and strike plate cutouts, provide fully enclosed pressed steel cover boxes spot welded to frames behind mortises.
- G. Finish:
1. Chemically treat and apply manufacturer's standard rust inhibitive primer coat conforming to ANSI A224.1-1990.
  2. Coat interior of frame with bituminous paint, minimum 1.5 mils.
  3. Prep surfaces to receive finish painting in the field.
- H. Fastenings:
1. Provide fastenings, anchors and clips as required to secure hollow metal work in place.
  2. Provide Jackson head screws, or flatter.
  3. Dimple metal work to receive screw heads.
  4. Set stops and other non-structural fastenings with #6 Jackson head self-tapping screws.

### PART 3 - EXECUTION

#### 3.01 INSPECTION

- A. Examine supporting structure and conditions under which hollow metal is to be installed.

- B. Verify that frame opening corresponds to dimensions of frames furnished.
- C. Check that surfaces to contact frames are free of debris.
- D. Do not proceed with installation until unsatisfactory conditions are corrected.

### 3.02 INSTALLATION

- A. General:
  - 1. Install in accordance with reviewed shop drawings and manufacturer's printed instructions.
  - 2. Set hollow metal plumb, level, square to proper elevations, true to line and eye.
  - 3. Units and trim shall be fastened tightly together, with neat, uniform and tight joints.
- B. Anchorage:
  - 1. Attach anchors to opening.
  - 2. Minimum number of anchors: 3 per jamb.
  - 3. Securely fasten and anchor work in place without twists, warps, bulges or other unsatisfactory or defacing workmanship.
  - 4. Set clips and other anchors with Ramset "shot" anchors or drill in anchors as approved.
- C. Frames:
  - 1. Attach frames true to line with adjacent construction.
  - 2. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set.
  - 3. After wall construction is complete, remove temporary braces and spreaders leaving surfaces smooth and undamaged.
  - 4. At cast-in-place concrete or masonry construction, set frames and secure in place using countersunk bolts and expansion shields, with bolt heads neatly filled with metallic putty, ground smooth and primed.
- D. Doors:
  - 1. Hang doors square to opening.
  - 2. Minimum Clearances:
    - a. At head and jambs: 1/8".
    - b. Between meetings edges of pairs of doors: 1/8".
    - c. With Floor: 3/4", except 3/8" undercut at handicap accessible doors.
    - d. At Threshold: 1/4".
    - e. At Handicap Threshold: As required to coordinate with threshold height.
  - 3. Fit hollow metal doors accurately in their respective frames, within following clearances:
    - a. Jambs and head 3/32 inch.
    - b. Meeting edges pair of doors 1/8 inch.
    - c. Sill where no threshold or carpet 1/4 inch above finished floor.
    - d. Sill at threshold 3/4 inch maximum above finished floor.
    - e. Sill at carpet 1/4 inch above carpet.
- E. Labeled Doors and Frames:
  - 1. Install in conformance with NFPA Standard 80.
  - 2. Provide clearances in conformance with NFPA Standard 80.

### 3.03 ADJUST AND CLEAN

- A. Remove dirt and excess sealants from metal surfaces.
- B. Touch up marred or abraded surfaces.

- C. Lubricate hardware and adjust moving parts to operate smoothly.
- D. Remove debris from work area.
- E. Prime Coat Touch-Up: Modify existing doors and frames to receive new door hardware. Cut, patch, weld, bondo, and sand smooth, modified areas. Modifications will be seamless and not noticeable. Use compatible air-drying primer.
- F. Protection Removal: Immediately before final inspection, remove protective wrappings from doors and frames.

SUBMITTAL CHECKLIST

- 1. Product Data.
- 2. Shop Drawings.

END OF SECTION 08 11 13



SECTION 08 14 16 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Interior flush pre-fit, pre-machined standard and fire rated type wood doors as shown on the Drawings and specified herein.
- B. Modifications to existing doors receiving new door hardware, where applicable.

1.02 REFERENCES

- A. WDMA - Window and Door Manufacturers Association: IS 1-A 1997 Industry Standard for Architectural Flush Wood Doors.
- B. NFPA-80: Standards for Fire Doors 1999 Edition.
- C. Uniform Building Code: UBC 7-2 1997 or UL10C, Positive Pressure Fire Door Assemblies. Category "B" for single swing doors and Category "A" for pairs of swinging doors.
- D. NFPA-105: Recommended Practice for Installation of Smoke-Control Door Assemblies, 1999 Edition.
- E. NFPA-252: Standard Method of Fire Tests for Door Assemblies.
- F. UL: Building Materials Directory.
- G. WHI: Directory of Listed Products.
- H. ICC/ANSI-A117.1-2003: Accessible and Usable Buildings and Facilities.
- I. State and Local Building Codes including the Authority Having Jurisdiction.

1.03 QUALITY ASSURANCE

- A. Except as otherwise specified herein, wood doors shall conform with Architectural Woodwork Institute (AWI) Quality Standards and National Woodwork Manufacturer's Association (NWMA) I.S. 1 and I.S. 2.
- B. Fire-Rated Wood Doors: Provide wood doors which are identical in materials and construction to units tested in door and frame assemblies in accordance with UBC 7-2 1997 or UL10c, Positive Pressure Fire Door Test Method, and which are labeled and listed for ratings indicated by ITS - Warnock Hersey, UL or other testing and inspection agency acceptable to authorities having jurisdiction.
  - 1. Doors: Comply with UBC 7-2 1997 or UL10C where required.
  - 2. Provide smoke gaskets or fire seals as required by manufacturers' individual authorities in compliance with UBC 7-2 1997 or UL-10C-1998.
  - 3. Maintain one copy of each compliance document on the project site.
  - 4. Fabrication of doors shall permit installation in accordance with NFPA Standard No. 80.
  - 5. Fire doors to be rated UL10C Positive Pressure Category A.
- C. WDMA I.S. 1-A 2004 Quality Standard: Window and Door Manufacturers Association Quality Standards for grade of door, core, construction, finish, and other requirements.
- D. Temperature Rise Rating: At stairwell enclosures, provide doors which have Temperature Rise Rating of 250 degrees F maximum in 30 minutes of fire exposure.

- E. Manufacturer must have qualifications specializing in the manufacturing of the products specified in this Section for a period of not less than 10 years.

1.04 SUBMITTALS

- A. Manufacturer's Literature:
  - 1. Manufacturer's published catalog data, product data sheets and cutsheets.
  - 2. Certificate of compliance with NWMA I.S. 1.
  - 3. Indicate general construction, jointing methods, hardware and louver locations, locations of cut-outs for glass, thickness of veneers, materials, door swings, special blocking, stile and rail dimensions, undercuts, and storage and installation details. Do not proceed with any fabrication until all details are approved.
- B. Shop Drawings:
  - 1. Show elevations, dimensions, construction details, glazing, cut-outs and label.
- C. Samples:
  - 1. Actual samples of wood veneer and finish.
  - 2. Stain colors and finishes to be selected from manufacturer's entire standard selection.
  - 3. If stains are required to be custom matched, submit samples of actual finished product, along with sample of item door was to be matched to.
- D. Warranty:
  - 1. Manufacturer's standard warranty for materials.
  - 2. Special Warranty as specified herein.
- E. Certification:
  - 1. Submit any information necessary to indicate compliance to all of these specifications.
  - 2. All labeled fire door assemblies to be of a type which have been classified and listed in accordance with the latest edition of NFPA 80 and tested in compliance with NFPA-252, and UL-10B, and UBC-7-2.
  - 3. A metal label is to be permanently affixed to the fire door at an authorized facility. Furthermore, all, 45, 60, and 90 minute labeled fire doors, are to have manufacturer's standard laminated stiles for improved screw holding and split resistance capabilities.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Do not deliver doors to the site until building has been closed in and is thoroughly dry.
- B. Deliver pre-finished wood doors to jobsite after all door frames have been painted, and all "wet" construction has been completed.
- C. Plastic wrap and protect wood doors during transit, storage and handling, to prevent damage, soiling or deterioration. Follow the Care and Installation guidelines as described in WDMA I.S. 1-A 2004.
- D. Store doors flat and protect from damage.
- E. Do not walk or stack any materials on top of any wood doors delivered to the jobsite, and do not drag any wood doors across each other during delivery or installation.
- F. Remove damaged or otherwise unsuitable doors from the job site.

1.06 SPECIAL WARRANTY

- A. The Contractor shall warrant the wood doors to be free of faults and defects for the life of the installation.

- B. Faults and Defects:
  - 1. Delamination in any degree.
  - 2. Warp or twist of 1/4" or more, in any 7'-0" plane, in any direction.
  - 3. Telegraphing of stile, rail, or core, through the face of the door to cause surface variation in excess of 1/100" in any 3" span.
  - 4. Any other defect that shall affect the operation of the door, shall be considered a defect under the provision of the warranty.
  
- C. Warranty to include refinishing and reinstallation that may be required due to repair or replacement of any defective doors.

## PART 2 - PRODUCTS

### 2.01 ACCEPTABLE MANUFACTURERS

- A. Provide products, as approved by the Architect, by one of the following acceptable manufacturers:
  - 1. Algoma Hardwoods.
  - 2. Chappell.
  - 3. Eggers Industries.
  - 4. Graham Manufacturing.
  - 5. Ideal Wood Products.
  - 6. Marshfield Door Systems.
  - 7. Mohawk Flush Doors.
  - 8. Ohio Valley.
  - 9. Oshkosh.
  - 10. VT Industries.

### 2.02 FABRICATION

- A. Typical Doors, Non-Fire Rated:
  - 1. Thickness: 1-3/4 inches.
  - 2. Interior flush, bonded, solid core, hardwood veneered.
  - 3. Door construction shall conform to WDMA I.S. 1-A 2004 Premium Grade and AWI Quality Standards Premium Grade.
  - 4. Core: bonded particle core (PC).
    - a. Solid particleboard bonded to the stiles and rails.
    - b. Comply with ANSI-A208-1 Grade 1-LD-2.
  - 5. Vertical Stiles: Hardwood to match face veneer, 1-3/8" minimum before trimming, over structural composite lumber (SCL), glued to core.
  - 6. Rails: Mill option hardwood or SCL. Top and bottom: 2 inches before trimming.
  - 7. Facing: Wood veneer cut and species as specified shall conform to WDMA I.S. 1-A 2004 "A" grade for Premium Grade Door Construction requirements.
  - 8. Crossbands: Hardwood, 1/16 inches thick, extending full width of door.
  - 9. Edge Bands: Same species as face veneer, matched for color.
  
- B. Fire Rated Doors (20 Minute Rating):
  - 1. Thickness: 1-3/4 inches.
  - 2. Interior flush, bonded, solid core, hardwood veneered.
  - 3. Door construction shall conform to WDMA I.S. 1-A 2004 Premium Grade and AWI Quality Standards Premium Grade.
  - 4. Core: bonded particle core (PC).
    - a. Solid particleboard bonded to the stiles and rails.
    - b. Comply with ANSI-A208-1 Grade 1-LD-2.

5. Vertical Stiles: Hardwood to match face veneer, 1-3/8" minimum before trimming, over structural composite lumber (SCL), glued to core.
  6. Rails: Mill option hardwood or SCL. Top and bottom: 2 inches before trimming.
  7. Facing: Wood veneer cut and species as specified shall conform to WDMA I.S. 1-A 2004 "A" grade for Premium Grade Door Construction requirements.
  8. Crossbands: Hardwood, 1/16 inches thick, extending full width of door.
  9. Edge Bands: Same species as face veneer, matched for color.
- C. Fire Rated Doors (45 Minute Rating and Higher):
1. Thickness: 1-3/4 inches.
  2. Interior flush, bonded, solid core, hardwood veneered.
  3. Door construction shall conform to WDMA I.S. 1-A 2004 Premium Grade and AWI Quality Standards Premium Grade.
  4. Core: bonded mineral core (FD).
    - a. Non-combustible mineral core containing no asbestos.
  5. Vertical Stiles: Laminated hardwood to match face veneer over mineral composite, glued to core, and laminated prior to field fitting.
  6. Rails: Fire-rated mineral composite materials (Firestop), as required by fire door authorities. Top and bottom: thickness before trimming as required by manufacturer's fire door authorities. Meet requirements and testing for labeled rating.
  7. Facing: Wood veneer cut and species as specified shall conform to WDMA I.S. 1-A 2004 "A" grade for Premium Grade Door Construction requirements.
  8. Crossbands: Hardwood, 1/16 inches thick, extending full width of door.
  9. Edge Bands: Same species as face veneer, matched for color.
- D. Wood Transom Panels:
1. Provide continuous sequence of veneer between transom panel and adjoining door using same width of veneer pieces on adjoining requirements for veneer quality and matching.
  2. Label doors and transoms to show door assembly match relationships specified.
- E. Provide all blocking, backings and supports in all horizontal and vertical members as required for reinforcing of all door hardware as specified in Section 08 71 00.

## 2.03 WOOD VENEER

- A. Face Veneer:
1. Shall meet quality standards conforming to WDMA I.S. 1-A 2004 "A" grade for transparent finish.
  2. Minimum face veneer thickness shall be 1/50" after finish sanding.
  3. Wood Species: Natural Birch.
  4. Face Cut: Rotary Cut.
  5. Face Assembly: Book Match.
  6. Face Symmetry: Running Match.

## 2.04 VISION FRAMES

- A. Non-Rated Doors:
1. Flush bead wood frames, 1/2" thickness.
  2. Hardwood of same species as face veneer, matched for color.
- B. Fire Rated Doors:
1. Provide UL rated frame. Match color of door face veneer.
  2. Equal to: "Air Louvers", "Slimline" lite kits with glazing.
  3. Factory glaze doors using compatible veneered metal lite kits.

- C. Glass:
  - 1. Refer to drawings for type and thickness.
  - 2. See Section 08 81 00 - Glass and Glazing.

2.05 FITTING AND FINISHING

- A. Fitting:
  - 1. Doors may be fitted for hardware at job site or pre-fitted and pre-machined at factory.
- B. Factory Finish:
  - 1. Generally, all doors shall be prefinished at the factory, unless indicated as field stained or a custom stain match is required.
  - 2. Selected finish color must be able to be matched.
  - 3. Transparent Finish shall match finish requirements indicated in AWI-“TR6”.
  - 4. Comply with referenced AWI “Factory Finishing” for Premium Grade factory finish systems.
  - 5. Finish wood doors using three coats of water-clear, 100% solids, modified acrylic urethane, cured immediately with ultra-violet light. Factory seal all doors on all 6 sides.
- C. Coordination:
  - 1. Finish or stain doors before hanging.
  - 2. Variations in finish due to body oils on doors, planer marks or other irregularities not attributable to natural wood grain variations will be cause for rejection.

2.06 ADHESIVES

- A. Adhesives:
  - 1. Face to core adhesives shall be Type I or Type II as appropriate for location in building.
  - 2. All adhesives must be classified Type I or Type II per WDMA TM-6 “Adhesive Bond Test Method.”
  - 3. Use Type II adhesives for doors in interior applications.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Examine door frames and verify that frames are correct type and have been installed as required for proper hanging of corresponding doors. Do not proceed with installation until unsatisfactory conditions have been corrected.
- B. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with plumb, square, and level jambs and heads.
- C. Modify existing wood doors to receive new door hardware, where applicable. Drill, Cut, patch, and sand smooth, modified areas. Modifications shall be seamless and not noticeable. Use touch up stain provided by custom stain manufacturer. Clear coat with Polyurethane after custom stain has dried.

3.02 INSTALLATION

- A. Condition doors to average prevailing humidity in installation area prior to hanging. Install doors after building humidity is at an acceptable level.
- B. Handle doors in accordance with recommendations of WDMA I.S. 1-A, “Care and Installation at Job Site”.
- C. Install wood doors in strict accordance with manufacturer's published instructions and as shown.

- D. Install accurately in frame. Install within the clearances specified in the manufacturer's written instructions. Install plumb, level, square and true.
- E. Install to operate freely, but not loosely, free from hinge and strike binding conditions. All doors shall be free from rattling when in the latched position.
- F. Pilot holes to be drilled for screws attaching hinges, locksets, and all other hardware to be installed on the doors. Pilot holes shall not exceed 90% of the diameter of the screw.
- G. Remove and replace all doors found to be warped, twisted, bowed, or otherwise damaged. Do not install doors which cannot be properly fitted to frames.
- H. Adjust pre-finished doors and hardware and other moving or operating parts to function smoothly and correctly.
- I. Ensure that smoke gaskets are in-place before pre-finished door installation.
- J. Bevel non-fire rated doors 1/8 inch in 2 inches lock and hinge edges.
- K. Fit to frames and machine for hardware to whatever extent not previously worked at factory as required for proper fit and uniform clearance at each edge.
- L. For non-rated doors provide the following clearances:
  - 1. 1/8 inch at jambs and heads.
  - 2. 1/2 inch at floor finish or covering.
- M. For installation of hardware, See Division 08710 - Finish Hardware.

3.03 ADJUST AND CLEAN

- A. Rehang or replace doors which do not swing or operate freely.
- B. Refinish or replace doors damaged during installation.
- C. Protect installed wood doors from damage or deterioration until Substantial Completion.
- D. Adjust doors for a smooth, balanced, fully functional opening.
- E. Clean pre-finished doors and hardware.

SUBMITTAL CHECKLIST

- 1. Manufacturer's Literature.
- 2. Shop Drawings.
- 3. Samples.
- 4. Warranty.
- 5. Certification.

END OF SECTION 08 14 16

SECTION 08 31 13.01 - ACCESS DOORS

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Metal access doors as shown on the Drawings and specified herein, including:
1. Access doors in walls.
  2. Access doors in ceilings.

1.02 QUALITY ASSURANCE

- A. Fire Resistive Ratings:
1. Where access doors are shown in rated assemblies, provide panel door, frame, hinge and latch from manufacturer listed by Underwriters Laboratories for ratings indicated.
- B. Use manufacturer's standard size units for nominal sizes indicated. Field coordinate actual unit sizes with rough openings and built-in anchors and inserts.

1.03 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to job in manufacturer's unopened packages with labels intact.
- B. Store and handle produces so as to prevent damage. Remove all damaged items from the job site.

1.04 SUBMITTALS

- A. Product Data:
1. Manufacturer's published catalog information, product data sheets and cutsheets.
  2. UL fire rated test data stating achieved rating.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Provide products, as approved by the Architect, from one of the following acceptable manufacturers:
1. Babcock-Davis.
  2. Bilco.
  3. Dayton.
  4. J.L. Industries.
  5. Karp Associates, Inc.
  6. Milcor Incorporated.
  7. Vestal Manufacturing Co.

2.02 MATERIALS

- A. Access Doors:
1. Door: 14 gage steel.
  2. Frame: 16 gage steel with 1 inch flange.
  3. Hinge: Concealed spring type, 175 degree opening.
  4. Lock: Screwdriver activated cam lock.
  5. Finish: Gray baked enamel prime coat. Prepped for finish field coats.
  6. Sizes: 20 inches x 40 inches minimum at attic access, unless otherwise indicated on Drawings.  
24 inches x 24 inches all other locations, unless otherwise indicated on Drawings.
- B. Fire-Rated Access Doors:
1. Door: 20 gage steel, insulated sandwich panel construction.
  2. Frame: 15 gage steel with 1 inch flange.

3. Hinge: Concealed pin type.
4. Lock: Recessed turn ring with interior latch release.
5. Closer: Spring type closer, adjust to assure positive latching.
6. Finish: Gray baked enamel prime coat. Prepped for finish field coats.
7. Sizes: 20 inches x 40 inches minimum at attic access, unless otherwise indicated on Drawings.  
24 inches x 24 inches all other locations, unless otherwise indicated on Drawings.
8. Label: 1-1/2 hour - "B" label, unless otherwise indicated on Drawings.

2.03 FABRICATION

- A. Fabricate units of continuous welded construction.
- B. Neatly fit all joints, and grind welds smooth and flush with adjacent surfaces.
- C. Furnish each access door as a complete unit with all parts ready for installation.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Field verify all rough opening dimensions.
- B. Assure that sufficient inserts, blocking and built-in anchors are provided for secure installation of doors.

3.02 INSTALLATION

- A. Install per manufacturer's recommendations.
- B. Painting of doors is specified in Section 09900.

3.03 ADJUSTING AND CLEANING

- A. Adjust hardware so that all doors operate smoothly and freely.
- B. Remove and replace panels or frames which are bowed, warped or damaged.

3.04 PROTECTION

- A. Protect doors from damage until Substantial Completion.

SUBMITTAL CHECKLIST

1. Product Data.

END OF SECTION 08 31 13.01



SECTION 08 71 00 - FINISH HARDWARE

PART 1 – GENERAL

1.01 WORK INCLUDED

Furnish labor, materials, equipment, special tools, supervision and services required to complete all Finish Hardware work as indicated, noted, detailed, and scheduled on the Drawings and specified herein.

1.02 OWNER VERIFICATION AND REVIEW MEETING

Contractor and hardware supplier are required to meet with the Owner to review and verify the hardware schedule and sets per door. Contractor and supplier shall be responsible for verifying door and hardware handings, lockset operations, and keying required. All information, except for keying, shall be included in the submittals prior to being forwarded to the Architect.

1.03 KEYING MEETING

Contractor and hardware supplier are required to meet with the Owner to review and verify all requirements for keys and keying per door. Incorporate and coordinate all locking hardware in the Project to provide for a complete and unified system of keying. A complete keying schedule shall be submitted to the Architect and Owner, for approval, within seven days after the meeting. Determine cylinders and cores required to match or be compatible with any existing building master keying systems in place as per the Owner's requirements.

1.04 QUALITY ASSURANCE

A. Hardware Supplier:

1. An established firm dealing in architectural commercial door hardware, with an office, sample room, warehousing facilities and an adequate inventory.
2. Has demonstrated a record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project.
3. Supplier must have, as an employee, an experienced and certified Architectural Hardware Consultant (AHC), who is available to Owner, Architect, and Contractor, for consultation throughout the course of the Work.
4. Provide a competent technician to service the hardware on the job as may be required.
5. A regular franchised distributor for all materials required for this project.
6. Shall replace damaged or defective materials prior to shipment to the site. Repairs not acceptable.
7. Shall meet with the Owner to review and verify all requirements and keying required.
8. Shall conduct a comprehensive training class for the Owner's maintenance personnel prior to date of acceptance on all special application mechanical hardware provided under this Section.

B. All work to comply with the latest requirements of ADA, ICC/ANSI A117.1, and the accessibility chapter of the Building Code.

C. All work to comply with the latest requirements of NFPA 80, NFPA 101 and NFPA 252 in providing hardware for all fire rated openings.

1.05 REFERENCES

A. American National Standards Institute (ANSI):

1. ANSI A117.1, Providing Accessibility and Usability for Physically Handicapped People.
2. ANSI/BHMA A156.1, Butts and Hinges.
3. ANSI/BHMA A156.3, Exit Devices.
4. ANSI/BHMA A156.4, Door Controls-Closers.
5. ANSI/BHMA A156.6, Architectural Door Trim.
6. ANSI/BHMA A156.7, Template Hinge Dimensions.
7. ANSI/BHMA A156.13, Locks & Latches, Mortise.

8. ANSI/BHMA A156.16, Auxiliary Hardware.
9. ANSI/BHMA A156.18, Materials and Finishes.

B. American Society for Testing and Materials (ASTM):

1. ASTM-E2074-2001 Standard Test Method for Fire Tests of Door Assemblies, Including Positive Pressure Testing of Side-Hinged and Pivoted Swinging Door Assemblies.

C. Code of Federal Regulations (CFR) Americans with Disabilities Act (ADA):

1. Latest version as adopted, approved and accepted by the State.

D. Door and Hardware Institute (DHI):

1. Keying Systems and Nomenclature.
2. Hardware for Labeled Fire Doors.
3. Sequence and Format for the Hardware Schedule.
4. Abbreviations and Symbols.

E. National Fire Protection Association (NFPA):

1. NFPA 80 Standard for Fire Doors and Windows.
2. NFPA 101 Life Safety Code.
3. NFPA 105 Recommended Practice for the Installation of Smoke-Control Door Assemblies.
4. NFPA 252 Standard Methods of Fire Tests of Door Assemblies.

F. Steel Door Institute (SDI):

1. SDI 100 Recommended Specifications for Standard Steel Doors and Frames.

G. Underwriter's Laboratories, Inc. (UL) - UL Standards for Safety:

1. UL 10C-97 Positive Pressure Fire Tests of Door Assemblies.
2. UL 228 Door Closer-Holders, With or Without Integral Smoke Detectors.
3. UL 305 Panic Hardware.

1.06 SUBMITTALS

A. Hardware Schedule:

1. Submit a completely detailed schedule of finish hardware in "Vertical Format" per the Door and Hardware Institute's Sequence and Format. Include a complete typewritten schedule indicating every item required for each door or opening. Schedules to include, but are not limited to; the manufacturers, model numbers, materials, types, styles, sizes, handings, finishes, etc.
2. Numbering of hardware sets is to match those as indicated in the Specifications and as noted on the Door Schedule on the Drawings. Cross reference plans and schedules.
3. Include all prep of doors and frames required for hardware, including mounting heights, locations and dimensions.
4. Clearly indicate door sets altered from that specified.

B. Owner Verification and Review Meeting:

1. Submit with submittals, confirmation that the meeting was conducted with the Owner.
2. Include list of those present at the meeting.
3. Itemize all items resulting from discussions of the meeting in a "meeting minutes" format.
4. Review of set functions shall be done on a "per door" basis, and not merely by sets. Sets included herein is for the convenience of review by grouping like conditions and not intended to necessarily be representative of same function for all doors in the set. Verify with Owner.

C. Manufacturer's Product Information:

1. Furnish catalog cutsheets, drawings, and other descriptive data on all hardware items.

2. After final approval of the hardware by the Architect, furnish copies of submittals to door and frame suppliers and any other subcontractors and suppliers necessary for coordination and installation of door hardware complete.

D. Samples:

1. If requested by the Architect, submit one (1) sample of each different item of hardware for approval, accompanied by an itemized list showing where the different items are to be used, the manufacturer's number, the finish, sizes applicable, and the number required.
2. Submit a full sample ring of hardware finishes for all manufacturers included.
3. After review, the samples will be returned to the supplier.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Deliver hardware or templates, or both to factory or to building as required by those furnishing items to which hardware is to be applied.
- B. Plainly mark packages or hardware so locations of use may be ascertained without breaking the packages.
- C. Deliver work so all work will progress without delay or interruption.
- D. The Contractor is responsible for providing adequate locked storage space for the scheduled quantities of hardware when delivered to the job.

1.08 PROJECT CONDITIONS

- A. The hardware supplier is responsible to examine the door and frame drawings and elevations to determine the suitability of hardware specified.
- B. It will be this supplier's responsibility to furnish the correct hardware to fit the door and frame conditions as indicated for correct and proper operation.

1.09 WARRANTY

- A. Furnish manufacturer's limited warranty covering defects in materials and workmanship for periods indicated as follows:
  1. Door Closers: Minimum Ten (10) years.
  2. Locksets: Minimum Ten (10) years.
  3. Exit Devices: Minimum Five (5) years.
  4. Hinges: Lifetime.
  5. All Other Hardware: Minimum One (1) year.

PART 2 - PRODUCTS

2.01 KEYING AND KEYS

- A. Key system must be a patented keyway.
- B. Key, master key and grandmaster key to Owner's requirements.  
The key schedule will be developed by hardware supplier in cooperation with Owner's representative.
- C. Provide six (6) grandmaster keys, six (6) master keys per group, and two (2) keys per lock.
- D. Engrave all keys with the words **UNLAWFUL TO DUPLICATE THIS KEY.**

2.02 LOCKS, LATCHES AND CYLINDERS

- A. All cylinders must be factory keyed.  
Provide certification from lock manufacturer stating cylinders have been factory keyed.
- B. All cylinders to have removable cores.
- C. Provide construction cores on all doors as required.
- D. Hardware supplier must be an authorized stocking distributor of the lock they propose to furnish.
- E. Provide a cylinder for every lock requiring one, whether specifically specified or not.
- F. Unless specifically indicated otherwise, all cylinders supplied throughout the entire project are to be capable of being keyed from the same master keying system. Key cylinders in dogged panic devices, keyed removable mullions, coiling doors, overhead doors, etc. to match building master keying system.

2.03 FINISHES

- A. All finishes, typical, are to be:  
Satin Chrome US26D (652 Plated Steel, 626 Plated Brass) unless otherwise indicated.  
Materials unable to have this finish applied are to have a finish to closely match and compliment (aluminum, dulled chrome, clear satin anodized, satin stainless steel, mil, painted, etc.).
- B. All finishes at clear anodized doors to be:  
Satin Chrome US26D (652 Plated Steel, 626 Plated Brass) unless otherwise indicated.  
Materials unable to have this finish applied are to have a finish to closely match and compliment (aluminum, dulled chrome, clear satin anodized, satin stainless steel, mil, painted, etc.).
- C. All finishes at medium bronze anodized doors to be:  
Medium Bronze USL3 (694 Powder Steel, 694 Powder Brass) unless otherwise indicated.  
Materials unable to have this finish applied are to have a finish to closely match and compliment (Satin Bronze, Oil-Rubbed US10B/613, Duranodic Dark Bronze 313, medium brown patina, oiled bronze, antique bronze, painted, etc.).
- D. All finishes at dark bronze anodized doors to be:  
Dark Bronze USL2 (695 Powder Steel, 695 Powder Brass) unless otherwise indicated.  
Materials unable to have this finish applied are to have a finish to closely match and compliment (Satin Bronze, Oil-Rubbed US10B/613, Duranodic Dark Bronze 313, dark brown patina, weathered/aged oiled bronze, weathered/aged antique bronze, painted, etc.).
- E. All hardware for painted or other aluminum storefront doors to have finish to match doors and frames.  
Contact Architect during bidding for any clarifications or concerns in providing finishes to match.
- F. Contact Architect during bidding for any clarifications or concerns for finishes to be provided.

2.04 HARDWARE SETS

- A. Verification:
  - 1. The following schedule is intended to describe, in general, the types and quantities of hardware required for the various types of doors and for the other parts of the building which will require hardware. Do not consider this schedule as entirely inclusive.
  - 2. Hardware supplier is responsible for visiting the jobsite and reviewing the requirements for each installation. The supplier shall be responsible for providing all hardware as required to serve the door's intended purpose and intent, and include all costs for such in their bid.

3. Hardware supplier is responsible for coordination of all hardware items used together in conjunction with one another, mounting as required to coordinate with all doors and frames as designed, and include all costs for such in their bid.
4. Hardware supplier is responsible for conducting the Owner Verification and Review Meeting, incorporating all items into submittals, and include all costs for such in their bid.
5. Hardware supplier is responsible for conducting the Owner Keying Meeting, determining cylinders and cores required to match any existing building master keying system, provide and install compatible items and key per Owner's requirements.

B. General Requirements:

1. Provide all fire and smoke seals and gaskets as required per Code for all rated door assemblies and for all smoke partition assemblies; full perimeter at head, jambs and bottom.
2. Provide glass and materials as required to meet and maintain fire ratings for all assemblies.
3. All items as listed in hardware sets are "per door", unless otherwise indicated.
4. All hardware to be mounted per ADA and ICC/ANSI A117.1.

2.05 HARDWARE PRODUCTS

A. Acceptable Manufacturers:

<b><u>Hardware Item</u></b>	<b><u>Manufacturer</u></b>
Hinges:	Ives, Hager, McKinney, Stanley, Bommer
Locksets (Cylindrical):	(Grade 1) Schlage, Falcon, Best, Sargent, Hager, Dorma, Yale
Deadbolts:	Schlage, Falcon, Best, Sargent, Hager, Dorma, Yale
Cylinders:	(Building Master Key System)
Panic Devices:	(Premium Tier) Von Duprin, Precision (PHI)
Push/Pulls:	Ives, Glynn-Johnson, Hager, Rockwood, Trimco
Surface Closers:	(Standard Tier) LCN, Sargent, Hager, Falcon, Norton, Stanley, Dorma, Yale
Wall/Floor Stops:	Ives, Glynn-Johnson, Hager, Rockwood, Trimco
Removable Mullions:	Von Duprin, Falcon, Detex, Sargent, Dorma, Stanley, Yale, Precision (PHI)
Seals/Gaskets/Sweeps/Bottoms:	Hager, NGP, Pemko, Reese, Zero
Flushbolts/Dustproof Strikes:	Ives, Hager, Rockwood, Trimco
Plates:	Ives, Hager, Rockwood, Trimco
Silencers:	Ives, Hager, Rockwood, Trimco
Automatic Door Bottoms:	Hager, NGP, Pemko, Reese

Automatic Door Power Operators: LCN

Automatic Door Push Plates: LCN

Position Switches: Schlage, Securitron

Electric Strikes: Von Duprin

B. Hinges:

1. All interior standard hinges shall be one of the following:
  - a. Ives, 5BB1WT, steel hinge and pin.
  - b. Hager, BB1168, steel hinge and pin.
2. All exterior standard hinges shall be one of the following:
  - a. Ives, 5BB1HW, brass hinge and stainless steel pin.
  - b. Hager, BB1199, brass hinge and stainless steel pin.
3. All continuous hinges shall be one of the following:
  - a. Ives, 700, stainless steel.
  - b. Hager Roton, 790-900, stainless steel.
4. All continuous hinges shall be one of the following  
(where finish other than clear is desired or to match painted or anodized aluminum storefronts):
  - a. Ives, 112HD, aluminum geared.
  - b. Hager Roton, 780-112, aluminum geared.
5. All interior spring hinges shall be one of the following:
  - a. Ives, 3CB1HW, steel.
  - b. Hager, 1250, steel.
6. All exterior spring hinges shall be one of the following:
  - a. Ives, 3CB1HW, brass hinge and pin.
  - b. Hager, 1150, brass hinge and pin.
7. Interior and exterior standard hinges shall be 5 knuckle, ball bearing, heavy weight, full mortise, wide throw template type hinges with flush barrel and non-removable pins.
8. All exterior hinges shall be of non-corrosive metals, stainless steel, brass, or aluminum as specified, and appropriate for finishes required. Painted or galvanized steel is not permitted. Hinges on all exterior entry doors and all doors receiving panic hardware shall be continuous hinge type and configuration, full height of door.
9. All interior standard hinges shall be capable of 180 degree throw.  
Use wide throw hinges where necessary to clear jamb trim. Provide same material and finish as standard hinges such that all hinges match for like use and applications.
10. All continuous hinges at access control doors are to be provided with electric power transfer prep, located and sized as required to coordinate with devices, equipment, and wiring needs.
11. Except where label provisions require larger or heavier hinges or where specified otherwise:
  - a. Provide 1-1/2 pairs of hinges for each door up to 7'-6".
  - b. Provide 2 pairs of hinges for doors over 7'-6".
  - c. Use 4-1/2" hinges on doors up to 3'-4" wide.
  - d. Use 5" hinges on doors over 3'-4" wide.

C. Locksets (Cylindrical):

1. All heavy-duty Grade 1 cylindrical locksets shall be one of the following:
  - a. Schlage, ND Series, "Rhodes" lever and escutcheon.
  - b. Falcon, T Series, "Dane" lever and escutcheon.
  - c. Best, 9K Series, "15" lever and "D" escutcheon.
  - d. Sargent, 11 Line TZONE Series, "L" lever and escutcheon.
  - e. Sargent, 10 Line Series, "L" lever and escutcheon.

- f. Hager, 3400 Series, "Withnell" lever and escutcheon.
    - g. Dorma, CL800 Series, "LR" lever and escutcheon.
    - h. Yale, 4700(LN) Series, "Augusta AU" lever and escutcheon.
    - i. Stanley, QCL 100 Series, "Sierra E" lever and escutcheon.
  2. All locksets shall have 2-3/4" backset with appropriate standard strike package.
  3. All classrooms shall be equipped with latch having a dead latching pin. Function shall provide for anti-intruder capabilities which enable the doors to be closed and locked from the inside of the room, allow egress from the inside without the use of a key, and remain locked upon re-closing without relocking by key. No deadbolt is permitted.  
Function equal to:
    - a. "Schlage" L9071, Classroom Security Lock.
    - b. "Sargent" 38, Classroom Security Lock.
  4. All other conditions, function and operation as selected by Owner from all manufacturer's available.
- D. Deadbolts (Cylindrical, when no mortise set is present):
  1. All heavy-duty Grade 1 deadbolts shall be one of the following:
    - a. Schlage, B560 Series.
    - b. Falcon, D100 Series.
    - c. Best, T Series.
    - d. Sargent, 34 Series.
    - e. Sargent, 480 Series.
    - f. Hager, 3100 Series.
    - g. Dorma, D800 Series.
    - h. Yale, 3500 Series.
  2. Provide with standard backset and high security dead latching lockbolt.
  3. Deadbolts from public rooms shall be equipped with anti-throw capabilities such that the latch cannot be thrown from the interior side of the room. Operation of the inside ADA compliant thumbturn shall allow the locked deadbolt to unlatch without the use of a key.
  4. All other conditions, function and operation as selected by Owner from all manufacturer's available.
- E. Panic Devices (Rim Type): (Premium Tier)
  1. All panics shall be one of the following:
    - a. Von Duprin, 99 Series, "06" lever design.
    - b. Stanley (PHI), Apex 2100 Series, "A" lever design.
  2. Provide Lever Trim with ANSI Function "08" on exterior of all devices, unless indicated otherwise. Only compression springs shall be used in devices, latches and outside trim and/or controls.
  3. Where Door Pulls are scheduled, provide Ives 8190, 90 degree offset pull.  
12" center-to-center x 1" diameter x 3-1/4" projection, concealed mounting, brass.
  4. All exterior doors to receive locking cylinders with night latch function, unless indicated otherwise.
  5. Provide Cylinder Dogging on all devices, unless specifically indicated otherwise.
  6. Provide cylinders for all panic devices to be compatible for brand of locksets provided and/or for building's master keying system.
  7. Provide fire rated devices for all rated door assemblies.
  8. Exterior panic doors to have universal function, adjustable in the field for operation as desired.
  9. All classrooms shall be equipped with anti-intruder capabilities which enable the doors to be closed and locked from the inside of the room, allow egress from the inside without the use of a key, and remain locked upon re-closing without relocking by key.  
Provide Double Cylinder and Lever Trim. No dogging permitted.
  10. All other conditions, function and operation as selected by Owner from all manufacturer's available.

11. Exit devices shall be tested to ANSI/BHMA A156.3 test requirements by a BHMA certified laboratory. A written certification showing successful completion of a minimum of 1,000,000 cycles shall be provided upon request.
  12. Touch pad shall extend a minimum of one half of the door width. Maximum unlatching force shall not exceed 15 pounds. End cap will have three-point attachment to the door.
  13. Provide roller strikes for all rim and surface-mounted vertical rod devices, ASA strikes for mortise devices, and manufacturer's standard strikes for concealed vertical rod devices.
  14. All devices to incorporate a security dead-latching feature.
  15. Provide removable mullion for any pair of doors where panic devices are used, whether scheduled or not, and whether frame is existing or new. Prep frames as required.
  16. In retrofit or renovation work, provide cover plate kit to cover cutouts required by existing exit device installations consisting of inside and outside plates for hinge stile cutouts, an inside plate for the lock stile, and all necessary hardware.
- F. Electrified Panic Devices: (Premium Tier)
1. All electrified panics shall be one of the following (to match series of all others specified):
    - a. Von Duprin, 99 Series, "06" lever design.
    - b. Stanley (PHI), Apex 2100 Series, "A" lever design.
  2. Provide equal to Von Duprin EL Electric Latch Retraction option to allow for a control station actuator (key switch, credential reader, etc.) to remotely unlatch and retract the latch bolt.
  3. Provide SD-EL Special Center Case Dogging for cylinder dogging capability.
  4. Provide cylinders for all panic devices to be compatible for brand of locksets provided and/or for building's master keying system.
  5. Provide equal to Von Duprin EPT-2 Power Transfer.
  6. Provide equal to Von Duprin PS914 Power Supply.  
Provide equal to Von Duprin 900-2RS option for 2 relay EL panic device control board.  
Provide equal to Von Duprin 900-BB option for battery backup.  
Provide equal to Von Duprin 900-FA option for input of a normally closed fire alarm contact to the fire alarm system.
  7. Provide equal to Von Duprin E996L electrified Lever Trim with cylinder operation for night latch function on all devices, unless indicated otherwise.
  8. Where Door Pulls are scheduled, provide Ives 8190, 90 degree offset pull.  
12" center-to-center x 1" diameter x 3-1/4" projection, concealed mounting, brass.
  9. Field convertible between Fail-Safe and Fail-Secure.  
Upon loss of power, the panic device and trim shall fail to Fail Secure condition so that the door remains in a locked position to maintain security to the building and spaces.
  10. In retrofit or renovation work, provide cover plate kit to cover cutouts required by existing exit device installations consisting of inside and outside plates for hinge stile cutouts, an inside plate for the lock stile, and all necessary hardware.
- G. Alarmed Panic Devices: (Premium Tier)
1. All alarmed panics shall be one of the following (to match series of all others specified):
    - a. Von Duprin, 99 Series, "06" lever design.
    - b. Stanley (PHI), Apex 2100 Series, "A" lever design.
  2. Provide equal to Von Duprin ALK Alarm Kit option equipped with an internal battery and horn which sounds upon use and activation of the pushpad.
  3. Provide integral key switch which operates on a standard 9-volt battery to arm or disarm alarm via cylinder key.
  4. Provide cylinders for all panic devices to be compatible for brand of locksets provided and/or for building's master keying system.
  5. Provide 6"x20" decal for application on door pushbar with warning printed on decal;  
"Emergency Exit Only. Alarm Will Sound".



6. Provide Lever Trim with ANSI Function "08" on exterior of all devices, unless indicated otherwise. Only compression springs shall be used in devices, latches and outside trim and/or controls.
  7. Where Door Pulls are scheduled, provide Ives 8190, 90 degree offset pull. 12" center-to-center x 1" diameter x 3-1/4" projection, concealed mounting, brass.
  8. All exterior doors to receive locking cylinders with night latch function, unless indicated otherwise.
  9. In retrofit or renovation work, provide cover plate kit to cover cutouts required by existing exit device installations consisting of inside and outside plates for hinge stile cutouts, an inside plate for the lock stile, and all necessary hardware.
- H. Push/Pulls:
1. All push plates shall be Hager, A40R, size: 6"x16", brass.
  2. All pulls shall be Hager, 9G, brass.
  3. All flush cup pulls shall be Hager, 17N, brass.
- I. Surface Closers: (Premium Tier)
1. Push side condition (with parallel arm) shall be one of the following:
    - a. LCN, 4110 Series (4111 cylinder).
    - b. Sargent, 281 Series.
  2. Pull side condition (with non-parallel arm) shall be one of the following:
    - a. LCN, 4040 Series (4041 cylinder).
    - b. Sargent, 281 Series.
  3. Provide reduced force ADA cylinder.
  4. Door closers shall be hydraulic, full rack and pinion action with a high strength cast iron cylinder. Cylinder body shall be 1-1/2" diameter, and double heat-treated pinion shall be 11/16" diameter. A written certification showing successful completion of a minimum of 1,000,000 cycles shall be provided upon request.
  5. All closers shall have forged steel main arms and forearms.
  6. Mounting shall be on the inside face of the door, interior to the room. Closers shall not be seen on the corridor, hallway or public side of the door.
  7. All covers shall be metal.
  8. All finishes shall be powder coat aluminum.
  9. Provide hold open functions where specified. All hold opens to be adjustable set up to 180 degrees.
  10. Provide concealed closer in lieu of surface closer where a closer is used in conjunction with overhead stops/holders.
  11. In all cases, the manufacturer's recommended table of sizes is to govern the size of closers to be furnished.
  12. Use through-bolts to fasten surface closers to mineral core wood and hollow metal doors.
  13. Furnish special overhead closers where shown or specified.
  14. Provide arms, corner brackets, mounting brackets, or drop plates as required.
  15. Provide 180° door swing wherever possible.
  16. Reduced force opening of less than 5 lbs. of force for interior hinged doors per ADA.
  17. Closing speed of sweep period shall be adjusted so that from an open position of 70 degrees the door will take at least 3 seconds to move to a point 3 inches from the latch per ADA.
- J. Wall/Floor Stops:
1. All wall stops shall be one of the following:
    - a. Ives, WS401CCV, brass.
    - b. Hager, 236W, brass.
  2. All floor stops shall be one of the following:
    - a. Ives, FS436; FS438 if high stop condition is required, brass.
    - b. Hager, 241F; 243F if high stop condition is required, brass.

3. All heavy-duty floor stops shall be one of the following:
    - a. Ives, FS18S, steel stud grouted in concrete.
    - b. Hager, 269F, steel stud grouted in concrete.
  4. Provide stops or bumpers wherever an opened door strikes any part of building construction, whether indicated or not. In general, provide wall mounted stops for all doors.
  5. Furnish floor dome type where wall type cannot be used.
  6. Furnish heavy-duty floor stops at all exterior entry and panic doors, whether indicated or not.
- K. Wall/Floor Holders:
1. All wall holders shall be one of the following:
    - a. Ives, WS40.
    - b. Hager, 327W.
  2. All floor holders shall be one of the following:
    - a. Ives, FS40.
    - b. Hager, 326F.
- L. Seals/Gaskets/Sweeps/Bottoms (used for Weatherstripping):
1. All bottoms for doors with recessed bottom channels shall be one of the following:
    - a. Hager, 750SN.
  2. All bottoms for doors without recessed bottom channels shall be one of the following:
    - a. Hager, 772S.
  3. All bottoms to be mil finish aluminum.
  4. Provide bottoms on all exterior doors, whether scheduled or not.
  5. Weatherstripping to be Vinyl, Neoprene, EPDM, TPE (thermoplastic elastomer), or Silicone.
  6. Full length and width of opening at each condition.
  7. All weatherstripping sets shall be determined by the door hardware supplier as appropriate to the application and able to provide a weather-tight and weather-proof seal, while allowing proper operation of the door and all other hardware.
  8. Provide weatherstripping seal sets at entire perimeter jambs and head of all exterior doors, whether scheduled or not.
- M. Seals/Gaskets (used for Sound Seals):
1. All sound seals shall be one of the following:
    - a. Pemko, S88 Series.
  2. Silicone, adhesive-backed, with compression bulb and stabilizer flange.
  3. Full length and width of opening at each condition.
  4. Provide sound seal sets at entire perimeter jambs and head.
- N. Seals/Gaskets (used for Fire and Smoke Seals):
1. All fire and smoke seals shall be one of the following:
    - a. Pemko, HSS2000 Series.
  2. High temperature silicone, self-extinguishing and non-toxic.
  3. Full length and width of opening at each condition.
  4. Provide fire and smoke seal sets at entire perimeter jambs and head as required.
- O. Flushbolts/Dustproof Strikes:
1. All flushbolts shall be one of the following:
    - a. Ives, 262.
    - b. Hager, 281D.
  2. Provide at top and bottom of doors.
  3. Provide dust proof strike for bottom flushbolts, provide as deep as possible.

- P. Plates:
1. All kick plates shall be height=8", length=2" less than door, unless otherwise indicated, and one of the following:
    - a. Ives, 8400.
    - b. Hager, 194S.
  2. All armor plates shall be height=36", length=1" less than door, unless otherwise indicated, and one of the following:
    - a. Ives, 8400.
    - b. Hager, 194S.
  3. All plates to be .050" thick minimum, brass, stainless steel, or aluminum.
  4. All plates to have beveled edges on all 4 sides.
  5. All plates to have countersunk screws.
  6. Screw-fasten solid to door.
  7. Provide kick plates on the interior side of all doors in a restroom, custodial or janitorial room, mechanical or electrical room, laundry room or other such utility space, whether scheduled or not.
  8. Provide armor plates on both sides of all crash or impact doors, whether scheduled or not.
- Q. Automatic Door Bottoms:
1. All automatic door bottoms shall be one of the following:
    - a. Hager, 730S.
    - b. NGP, 422.
    - c. Pemko, 411ARL.
    - d. Reese 521C.
  2. Non-handed, reversible, full mortise, flush mounting.
  3. Comprised of an aluminum case surrounding a movable drop-bar seal. The drop-bar seal is actuated by a plunger which contacts the jamb as the door closes, forcing the drop-bar seal down against the floor or threshold surface.
  4. Mill aluminum finish with black sponge neoprene insert.
  5. Provide appropriate type of unit applicable to each door material and thickness.
- R. Silencers:
1. All door silencers in metal frames shall be one of the following:
    - a. Ives, SR64.
    - b. Hager, 307D.
  2. All door silencers in wood frames shall be one of the following:
    - a. Ives, SR65.
    - b. Hager, 308D.
  3. Furnish silencers for all interior single and pairs of doors, whether scheduled or not.
  4. Omit silencers at doors where they may interfere with other types of seals already required, such as fire rated doors, smoke doors, sound proof doors, or light proof doors.
- S. Position Switches:
1. All position switches for wood doors in wood frames shall be one of the following:
    - a. Schlage, 679-05.
    - b. Securitron, DPS-W.
  2. All position switches for hollow metal doors in hollow metal frames shall be one of the following:
    - a. Schlage, 679-05 HM.
    - b. Securitron, DPS-M.
  3. All position switches for wood doors in hollow metal frames shall be one of the following:
    - a. Schlage, 679-05 WD.
  4. All position switches for aluminum doors in aluminum frames shall be one of the following:
    - a. Schlage, 7764.

5. Monitor the position status of door.
  6. Concealed switches, flush-mounted in top of door and head of frame, directly opposite one another.
  7. Magnetic switch and a permanent magnet, normally closed.
  8. Finish as selected by Architect.
- T. Electric Strikes:
1. All electric strikes for cylindrical or mortise locksets shall be one of the following:
    - a. Von Duprin, 6200 Series.
  2. All electric strikes for panic devices and removable mullions shall be one of the following:
    - a. Von Duprin, 6100 Series.
  3. Provide Von Duprin PS902 Power Supply.
  4. 24 VDC or 12 VDC voltage as selected.
  5. Field convertible between Fail-Safe and Fail-Secure.  
Upon loss of power, the electric strike shall fail to Fail Secure condition so that the door remains in a locked position to maintain security to the building and spaces.
  6. Adjustable keeper.
  7. Internal solenoid.
  8. Non-handed.
  9. Continuous duty operation.
  10. Tamper resistant faceplate.
  11. Stainless steel material. Finish on stainless steel to match all other hardware at opening.
  12. Hardware supplier is responsible to coordinate the model required with the condition of installation so as to assure proper fit. Verify condition and dimensions of door frames, mullions, removable mullions, and abutting walls where strikes are to be installed.
- U. Automatic Door Power Operators:
1. All automatic door power operators shall be LCN, 4640 Series, Auto Equalizer.
  2. Electrically-powered low energy combination closer and power operator.
  3. BHMA certified meeting requirements of ANSI 156.19 Grade 1 for power assist and low-energy consumption.
  4. Top jamb (push side) mounted closer with regular arm and metal cover.
  5. Non-handed for either left or right swing.
  6. ADA compliant.
  7. Adjustable spring size for larger width doors and separate valves for adjusting closing and latching speeds.
  8. Provide any and all power supplies required for a fully functional opening.
  9. Provide end caps to conceal operator switches.
  10. Provide integral electrically-operated on/off switch as required for desired operation capability.
  11. All finishes shall be powder coat aluminum. Match finish of storefront doors where applicable.
- V. Automatic Door Push Plates:
1. All automatic door push plates shall be LCN, 8310 Series, Automatic Operator Actuators.
  2. LCN 8310-853, square, wall-mounted actuator.
  3. LCN 8310-867F, 4-3/4" square, flush-mount box. Provide at all actuators.
  4. LCN 8310-801, plastic weathering ring. Provide at all exterior actuators.
  5. Hardwired low voltage actuator with stainless steel touch plate.
  6. Engraved handicap symbol, colored blue.
- W. Electromagnetic Door Holders:
1. Specified in Section 13850 - Fire Detection and Alarm System.

2.06 HARDWARE SCHEDULE

**NOTE:**

For all existing doors receiving new hardware:

- \*Replace existing hardware items with new as scheduled*
- \*Where new hardware items are scheduled, completely remove all existing items*
- \*All existing hardware items not being replaced are to remain*
- \*Repair existing door and frame as required*
- \*Repair existing wall and floor surfaces as required*
- \*Provide covers, trims, and fillers at all existing preps*

**Hardware Set #1 (Doors 101A, 117A)**

Continuous Hinges  
Electrified Panic Device (Door Pull) (Night Latch function) (Cylinder)  
Surface Closers  
Threshold (entire opening)  
Weatherstripping  
Bottoms  
Kick Plate (interior/push side)  
Position Switch  
Power Supply

**Hardware Set #2 (Doors 101B, 117B)**

Hinges  
Electrified Panic Device (Door Pull) (Night Latch function) (Cylinder)  
Surface Closers  
Kick Plate (interior/push side)  
Position Switch  
Power Supply

**Hardware Set #3 (Doors 102A, 102B)**

Hinges  
Lockset (Storeroom Function)  
Electrified Strike with remote control button at Reception  
Surface Closers  
Kick Plate (interior/push side)

**Hardware Set #4 (Doors 104, 106B, 112, 116, 133, 134)**

Hinges  
Lockset (Storeroom Function)  
Wall Stop

**Hardware Set #5 (Doors 106, 107, 108, 109, 110)**

Hinges  
Lockset (Office Function)  
Stop

**Hardware Set #6 (Doors 111, 119, 120, 121, 122, 123, 124, 125, 126, 131, 132)**

Hinges  
Lockset (Office Function)  
Sound Seal  
Automatic Door Bottom  
Stop

**Hardware Set #7 (Doors 113, 128, 129, 130)**

Hinges  
Lockset (Restroom Function)  
Stop

**PART 3 - EXECUTION**

**3.01 INSTALLATION**

- A. Install finishing hardware as recommended by the National Builders Hardware Association.
- B. Only use fasteners supplied by the manufacturer. Provide fasteners of suitable size, quantity, type and finish to secure hardware in position for heavy use and long life.
- C. Hardware for application on metal surfaces:
  - 1. Made to standard templates.
  - 2. Fastening harmonized with hardware as to material and finish.
  - 3. Fastenings with approved type anchors according to the manufacturer.
  - 4. In general, ends of through-bolts shall be countersunk.
- D. Mount hardware in accordance with current state and federal accessibility standards and guidelines.
- E. Install hardware per manufacturers instructions and in compliance with:
  - 1. NFPA-80.
  - 2. NFPA-101.
  - 3. NFPA-105.
  - 4. NFPA-252.
  - 5. ANSI A117.1.
- F. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Where cutting and fitting is required to install hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation or application of surface protection with finishing work specified in the Division 9 Sections. Do not install surface-mounted items until finishes have been completed on the substrates involved.
- G. Set units level, plumb, and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
- H. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.
- I. Set thresholds for exterior doors in full bed of butyl-rubber or polyisobutylene mastic sealant complying with requirements specified in Division 7 Section "Joint Sealers".
- J. Weatherstripping and Seals: Comply with manufacturer's instructions and recommendations to the extent installation requirements are not otherwise indicated.

3.02 FIELD QUALITY CONTROL

- A. Material supplier to inspect hardware after installation and before final acceptance in order to ensure that hardware has been properly installed. If there are any discrepancies the material supplier is to provide the Architect, General Contractor and Installer with a written report detailing any and all discrepancies. All discrepancies are to be corrected prior to final acceptance unless otherwise directed by the Owner.

3.03 ADJUSTING AND CLEANING

- A. Adjust and check each operating item of hardware and each door to ensure proper operation or function of every unit.
- B. Immediately prior to Substantial Completion replace all construction cores.
- C. Tag all keys.
- D. Check each key and each lockset to verify proper working order.
- E. Lubricate and adjust all hardware to provide smooth operation.
- F. Clean all hardware per manufacturer's instructions after installer makes final adjustments and prior to final acceptance, remove all mortar, drywall mud, paint overspray, foreign materials, labels, markings, soil, oils, etc. Polish all locksets, plates, and other hardware.
- G. Clean adjacent surfaces soiled by hardware installation
- H. Replace, at no cost to Owner, items that cannot be cleaned to manufacturer's level of new finish quality or that cannot be adjusted to operate freely and smoothly or as intended for the application made.
- I. Where door hardware is installed more than one month prior to acceptance or occupancy of a space or area, return to the installation during the week prior to acceptance or occupancy and make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to function properly with final operation of heating and ventilating equipment.

SUBMITTAL CHECKLIST

- 1. Hardware Schedule.
- 2. Owner Verification and Review Meeting.
- 3. Manufacturer's Product Information.
- 4. Samples.

END OF SECTION 08 71 00

SECTION 08 81 00 - GLASS AND GLAZING

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Glass and glazing as shown on the Drawings and specified herein.
- B. Decorative window film as shown on the Drawings and specified herein.

1.02 QUALITY ASSURANCE

- A. Comply with the following:
  - 1. Glazing Material:
    - a. ANSI Z97.1.
    - b. ASTM 1036, Standard Specifications for Flat Glass.
  - 2. Safety Glazing:
    - a. Federal Standard CPSC 16 CFR 1201.
    - b. ANSI Z97.1.
    - c. ANSI Z97.1q.
    - d. U.S. Consumer Product Safety Commission Standard 16 CFR 1201 CI and CII.
    - e. ASTM C1172, Standard Specification for Laminated Architectural Flat Glass.
- B. Unless otherwise shown or governed by other reference standards specified, conform with details and procedures of FGMA Glazing Manual.
- C. The level of acceptability for glass and glazing products may be more strict than the basic standards referenced herein. The Owner and/or Architect reserve the right to determine whether a product is acceptable for its intended use, in its intended application, for its intended clarity of visibility, and as required for its intended aesthetic effect.

1.03 SUBMITTALS

- A. Manufacturer's Literature:
  - 1. Materials description and installation instructions for glazing compounds.
- B. Samples:
  - 1. Submit 6" x 6" actual sample of each glass type, color, tint, etc.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Deliver glazing materials to project site in manufacturer's unopened containers, fully identified with trade name, color, size, hardness, type, class and grade. Store each item in accordance with manufacturer's instructions. Remove all damaged, or otherwise unsuitable material immediately from the job site.

1.05 JOB CONDITIONS

- A. Do not perform work under adverse weather or job conditions. Install liquid sealants when temperatures are within lower or middle third of temperature range recommended by manufacturer.



PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Provide products, as approved by the Architect, from one of the following, or as otherwise specifically listed:
1. "AGC Glass Company North America".
  2. "Guardian Industries".
  3. "Oldcastle Building Envelope".
  4. "Pilkington North America, Inc.".
  5. "Vitro/PPG Industries, Inc.".

2.02 GLASS TYPES

- A. Clear Float Glass:
1. Glass sheet made by floating molten glass on a bed of molten tin.
  2. Thickness as shown on Drawings or specified herein.
  3. Safety glass in all doors, windows, transoms and sidelights, where required by code and where shown on the Drawings and specified herein, whether required by Code or not.
  4. Safety glass to be laminated or tempered at all exterior units and tempered at all interior units, unless otherwise indicated.
  5. Glass to be clear.
- B. Laminated Safety Glass:
1. Thickness as shown on Drawings or specified herein.
  2. (2) lites of equal thickness of heat strengthened clear or tinted float glass.
  3. .030" polyvinyl interlayer.
  4. Inner lite clear. Tint outer lite if tinted glass is required.
  5. See Tinted Float Glass for tint color, where tinted glass is required.
- C. Tempered Safety Glass:
1. Thickness as shown on Drawings or specified herein.
  2. Single thickness of clear or tinted float glass.
  3. Reheated to just below melting point and suddenly cooled for tempering.
  4. Upon major impact, the glass surface shall shatter into small pieces free of sharp points or slivers.
  5. See Tinted Float Glass for tint color, where tinted glass is required.
- D. Obscured Glass:
1. Thickness as shown on Drawings or specified herein.
  2. Clear float glass with integral texture so as to provide visual privacy via glass surface obscuration.
  3. Texture to be as indicated or as selected by Architect from manufacturer's entire selection.
  4. Provide one of the following approved products, or an approved equal:
    - a. "Pilkington", Texture Glass.

2.03 MISCELLANEOUS MATERIALS

- A. Glazing Tape:
1. Polyisobutylene / butyl.
  2. Provide one of the following approved products:
    - a. "Tremco", Tremco 440 Tape.
    - b. "Pecora Chemical Corporation", G-66.
    - c. "Pecora Chemical Corporation", BB-50.
    - d. "DAP, Inc.", Butyl Rubber Tape.

- B. Setting Blocks:
  - 1. Neoprene blocks, 80 to 90 Type A durometer hardness.
- C. Spacers:
  - 1. Neoprene blocks, 40 to 50 Type A durometer hardness, 3" long, self-adhesive on one face only.
- D. Decorative Window Film:
  - 1. "3M" Decorative Films", Solyx Glass Finishes, SXWF-CM Charcoal Matte.
  - 2. Frosted, polyester window film with translucent effect.
  - 3. Pressure-sensitive adhesive.
  - 4. Suitable for use on interior face of exterior windows.
  - 5. Roll width: 60"
  - 6. Thickness: 2 mil.

### PART 3 – EXECUTION

#### 3.01 PREPARATION

- A. Examine all surfaces to receive the parts of the Work specified herein.
- B. Verify all dimensions of in-place and subsequent construction.
- C. Application or installation of materials constitutes acceptance of the related construction.

#### 3.02 INSTALLATION

- A. Employ only experienced glaziers who have had previous experience with the materials and systems being applied. Use tools and equipment recommended by the glass manufacturer.
- B. Maintain a minimum temperature of 40°F during glazing unless the manufacturer of the glazing materials specifically agrees to application of his materials at lower temperatures.
- C. Clean glazing stops and rabbets to receive glazing materials of all obstructions and deleterious substances which might impair the work. Remove protective coatings which might fail in adhesion or interfere with bond of sealants. Comply with manufacturer's instructions for final wiping of surfaces immediately before application of primer and glazing compounds or tapes.
- D. Inspect each piece of glass immediately before installation.  
Do not install pieces which are defective or damaged in any way.
- E. Set glass on setting blocks or shims. Use blocks of proper size and spacing to support the glass in accordance with manufacturer's recommendations.
- F. Provide spacers for all glass to separate glass from stops, except where continuous gaskets or tape are required.
- G. Set glass in a manner which produces greatest possible degree of uniformity in appearance.
- H. Install glass according to manufacturer's recommendations and in accordance with the Flat Glass Marketing Association Glazing Manual.
- I. Clean excess sealant or compound from glass and framing members immediately after application, using solvents or cleaners recommended by manufacturers.

J. Install decorative window film in accordance with manufacturer's recommendations.

3.03 CURING, PROTECTION AND CLEANING

- A. Cure sealants in accordance with the manufacturer's instructions to attain maximum durability and adhesion to glass and framing as soon as possible.
- B. Remove and replace any glass which has become broken, cracked, chipped, or damaged, in any way and from any source, including weather, vandalism, construction, handling, accidents during the construction period, etc.
- C. Maintain glass in a reasonably clean condition during construction so that it will not become stained and will not contribute to the deterioration of glazing materials.
- D. Remove labels, clean and polish glass on both faces prior to final inspection. Comply with instructions and recommendations of the glass manufacturer and glazing materials manufacturer for cleaning in each case.

SUBMITTAL CHECKLIST

- 1. Manufacturer's Literature.
- 2. Samples.

END OF SECTION 08 81 00

SECTION 08 90 00 - LOUVERS AND VENTS

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Furnish labor materials, equipment, special tools, supervision and services necessary to provide architectural air intake and exhaust louvers as indicated on the Drawings and specified herein.

1.02 REFERENCES

- A. ADC 1062 - Certification, Rating and Test Manual.
- B. AMCA 500 - Test Method for Louvers, Dampers and Shutters.
- C. ARI 650 - Air Outlets and Inlets.
- D. ASHRAE 70 - Method of Testing for Rating the Air Flow Performance of Outlets and Inlets.

1.03 QUALITY ASSURANCE

- A. Test and rate performance of louvers in accordance with AMCA 500.

1.04 SUBMITTALS

- A. Product Data:
  - 1. Manufacturer's product data sheets, cutsheets, specifications, materials description, installation and maintenance instructions.
- B. Shop Drawings:
  - 1. Show proposed method of installation, anchoring and interface between the work of this Section and the work of adjacent trades.
- C. Samples:
  - 1. Actual samples of all items needed for colors and finishes.
  - 2. Colors and finishes to be selected by Architect from manufacturer's entire selection.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Provide products, as approved by the Architect, from one of the following approved manufacturers:
  - 1. "Ruskin Company"
  - 2. "Air Louvers, Inc."
  - 3. "Dowco, Inc."

2.02 LOUVERS

- A. Basis of Specification: "Ruskin", ELF-81S30.
- B. Frame:
  - 1. Extruded Aluminum, 6063-T5, .080 inch min. thickness.
  - 2. 4 inch frame nominal depth.
  - 3. Size, profile and configuration as indicated on the Drawings.
  - 4. Finish: Baked enamel coating, color as selected from manufacturer's entire standard selection.
- C. Blades:

1. Extruded Aluminum, 6063-T5, .080 inch min. thickness.
2. “K” style blade profile.
3. 30° angle blades, 3-1/4 inch nominal spacing.
4. Finish: Color and finish to match frame.

D. Extended Sill Sub-Frame:

1. Extruded aluminum, 6063-T5, .080 inch min. thickness.
2. Extended front counterflashing leg and raised rear flashing leg in “Z” profile.
3. Finish: Color and finish to match frame.

E. Screens:

1. 1/2 inch frame x 19 gauge galvanized steel bird screen.
2. Rear mounted.
3. Finish: Aluminum frame color and finish to match frame.

2.03 FABRICATION

- A. Fabricate with hidden mullions.
- B. Louvers too large for shipping may be assembled on site from factory fabricated sections to provide the required overall size.
- C. Provide integral structural supports to withstand 20 psf wind load.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Field verify all dimensions prior to fabricating louvers.

3.02 INSTALLATION

- A. Install per manufacturer's details and recommendations.
- B. Paint portions of aluminum subframe in contact with concrete on mortar with bituminous paint.
- C. Install sealant along entire perimeter of louver.

3.03 PROTECTION

- A. Protect louvers from damage.

SUBMITTAL CHECK LIST

1. Product Data.
2. Shop Drawings.
3. Samples.

END OF SECTION 08 90 00

SECTION 09 29 00.01 - GYPSUM DRYWALL – STEEL STUD CONSTRUCTION

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Gypsum wallboard and gypsum drywall finish as shown on Drawings and specified herein.
- B. Non-load bearing interior partition steel stud construction as shown on Drawings and specified herein.

1.02 QUALITY ASSURANCE

- A. Gypsum wallboard construction shall comply with all laws, ordinances, rules, regulations and orders of public authorities having jurisdiction.
- B. All material shall be from a single manufacturer.
- C. Installation of steel framing members to receive gypsum wallboard shall comply with ASTM C754.

1.03 REFERENCES

- A. Comply with applicable requirements of ANSI/ASTM C 840 for application and finishing of gypsum board, unless otherwise indicated.
- B. Gypsum board terminology standard: GA-505 by Gypsum Association.

1.04 DELIVERY, STORAGE AND HANDLING

- A. All materials shall be delivered to the job in their original, unopened containers or bundles, stored in a place providing protection from damage and exposure to the elements. Remove damaged or otherwise unsuitable material from the job site.

1.05 SUBMITTALS

- A. Product Data:  
Manufacturer's literature, materials description, cutsheets and recommended installation instructions for systems use.

PART 2 - PRODUCTS

2.01 GYPSUM BOARD

- A. Gypsum Board (Non-Fire Rated Assemblies):
  - 1. Provide one of the following approved products:
    - a. "Georgia-Pacific"; Gypsum Sheathing.
    - b. "USG"; Sheetrock Gypsum Panels.
    - c. "Certaineed"; M2Tech Gypsum Board.
  - 2. Manufacture to meet specifications for FS SS-L-30, ASTM C 36 and ASTM C 1396.
  - 3. Provide in maximum lengths available to minimize end-to-end butt joints.
  - 4. Standard type, regular gypsum core gypsum board for all areas, except as otherwise indicated. If needed for specified thickness, provide product in Type X gypsum core.
  - 5. Thickness: 5/8 inch or 1/2", as indicated on the Drawings.
  - 6. Width: 4 feet.
  - 7. Length: 8 feet minimum.
  - 8. Edges: Tapered.
- B. Gypsum Board (Tile Backer Board):
  - 1. Provide one of the following approved products:

- a. "Georgia-Pacific"; Dens-Shield Tile Backer.
- b. "National Gypsum Company / Gold Bond"; eXP Tile Backer.
2. Manufacture to meet specifications for ASTM C 1178.
3. Provide in maximum lengths available to minimize end-to-end butt joints.
4. Thickness: 5/8 inch or 1/2", as indicated on the Drawings.
5. Width: 4 feet.
6. Length: 8 feet minimum.
7. Edges: Square.
8. Provide at all areas where wall tile is scheduled. See Drawings.

## 2.02 STEEL STUDS

- A. Provide Steel Stud Systems, as approved by the Architect, by one of the following manufacturers:
1. "U.S. Gypsum Company" (USG).
  2. "National Gypsum Company".
  3. "Georgia-Pacific".
  4. "Clark Dietrich Building Systems".
  5. "Phillips Manufacturing Co.".
  6. "Marino/Ware".
  7. "CEMCO Steel".
  8. "Flex-Ability Concepts".
  9. "MBA Metal Framing".
  10. "Dale/Incor".
  11. "Superior Steel Studs".
- B. System Components:
1. With each type of metal stud and joist required, provide manufacturer's standard runners (tracks), shoes, clips, ties, stiffeners, fasteners, grommets to protect electrical wiring, door jamb reinforcers and accessories as recommended by the manufacturer for the applications indicated, and as needed to provide a complete metal stud system. Where special types, conditions, or products are indicated, provide as required to match gauge, depth and section of associated wall construction.
- C. Non-Load Bearing Screw Type Steel Studs:
1. Manufacturer's standard formed light gauge steel studs of the height, size, and gauge indicated, with punched webs to facilitate erection of system and passage of mechanical/electrical service lines. Lateral loading shall have a minimum of 5 lbs. per sq. ft.
  2. Steel stud framing at interior partitions:
    - a. Gauge: minimum 20 gauge and 30 mils thickness, ASTM C645.
    - b. Depth of Section: 3-5/8 inches, unless otherwise indicated on drawings.
    - c. Flange width: Not less than 1.25 inches.
    - d. Shape: Cee shape (returned flanges).
    - e. Steel and Finish: ASTM A591, commercial quality electrolytic zinc coated steel, class B.
    - f. Face of flanges: Knurled to facilitate use of self-tapping fasteners.
    - g. Use 1-1/2 inches cold rolled channel at 48 inches o.c. horizontally above interior ceiling.
    - h. Floor and Ceiling Tracks: Cold formed channel shape, galvanized, width as required to receive studs, and flange/leg size not less than 1.25 inches.
    - i. Double 20 gauge studs at all door and window jambs.
- D. Deflection Stud Runners:
1. Equal to: "Clark Dietrich Building Systems", SLP-TRK.
  2. Positive attachment secured through sides of track, to allow up to 1" vertical movement.
  3. Match gauge, depth and section of associated vertical metal stud wall members, minimum 20 gauge and 30 mils thickness.

4. Flange/leg size not less than 1.25 inches.
  5. UL approved for use in fire rated assemblies, where applicable.
- E. Flexible Steel Stud Runners and Tracks:
1. Equal to: "Flex-Ability Concepts", "FLEX-C TRAC".
  2. Galvanized steel sheet track.
  3. Zinc-coated steel side bands.
- F. Furring Channels or Strips:
1. 7/8" or 1-1/2", as indicated on Drawings. If not indicated, provide 1-1/2".
  2. 20 gauge, minimum.
  3. Cee shape or Hat Channel profile.

### 2.03 MATERIALS AND COMPONENTS

- A. Fasteners:
1. Type S and S-12 screws, bugle head or pan head.
  2. Sized to provide 3/8 inch penetration beyond thickness of wallboard.
- B. Accessories:
1. Corner reinforcements, casing beads and metal trim, fabricated from 26 gauge galvanized sheet steel with perforated flanges, designed to receive joint compound.
- C. Control Joints:
1. "USG", "No. 093".
- D. Suspension System for Suspended Gypsum Board Ceiling:
1. "USG/Donn", "Rigid X".
- E. Hangar Wires:
1. ASTM A-641, 12 gauge, 0.475 lbs/ft.
- F. Reveals:
1. "Gordon, Inc.", "Final Forms I, Series 500".
  2. Sizes and shapes as shown on Drawings, or if not shown, 1/2 inch wide reveal.
  3. Extruded aluminum.

## PART 3 - EXECUTION

### 3.01 INSTALLATION OF WALLBOARD

- A. Single Layer Wallboard - Metal Stud Partitions:
1. Secure metal runners to concrete slabs with power driven anchors, space 24 inches o.c.
  2. Space metal studs 16 inches o.c. and locate studs at door and window frames, partition intersections and corners. Locate studs within 2 inches of all door-frame jambs and anchor to jamb and head anchor clips of frame by screw attachment. Over frames a cut-to-length stud extending from door frame header to ceiling runner shall be positioned over vertical joints over door frame. Anchor all frames at jamb anchor clips, after stud and before gypsum wallboard is installed.
  3. Sound attenuation blankets shall be pressure-fit between studs.
  4. Apply single layer wallboard face out with long dimension vertical. All abutting ends and edges shall occur over stud on different studs. Screws shall be spaced 12 inches o.c. in field of board and 8 inches o.c. staggered along vertical edges.
  5. Use wallboard of maximum practical lengths to minimize end joints.



6. Use single panel to span entire length of width of surface where possible.
7. Stagger end joints when they occur.
8. Locate end joints as far as possible from center of wall or ceiling.
9. Butt wallboards without forcing
10. Support ends and edges of wallboard panels on framing or furring members.

B. Accessories:

1. Corner beads shall be installed on all exterior corners attached with suitable fasteners spaced 9 inches o.c. on both sides, and shall be in single lengths unless corner exceeds standard stock lengths.
2. Metal trim shall be installed over face-layer wallboard, attached with suitable fasteners spaced 9 inches o.c. and shall be in single lengths unless application length exceed standard stock lengths.
3. Wallboard screws shall be applied with an electric driver.
4. Provide control joints at maximum 28'-0" o.c. If additional shrinkage cracks occur, install control joints and patch cracks.

C. Joint Treatment:

1. Finish all joints and interior corners with joint tape and joint compound.
  - a. Apply joint compound sufficiently thick to hide board surface at angles and joints. Cover nail/screw heads and depressions with compound.
  - b. Apply tape, squeeze out excess compound and cover tape with compound.
  - c. When first coat has thoroughly dried apply two coats of compound, extending each coat slightly beyond previous coat. Sand to smooth, flat surface, ready for specified finish.

D. Finish:

1. Level 5 finish at all exposed areas.
2. If specifically permitted by the Architect, provide Level 4 finish at all exposed areas and Level 5 finish at the following conditions:
  - a. All walls indicated to receive a skim coating.
  - b. All walls scheduled to receive a highly reflective wallcovering.
  - c. All wall areas scheduled to receive a dryerase or projectable wallcovering.
  - d. All wall areas scheduled to receive a dryerase paint or chalkboard paint.
  - e. All surfaces of all drywall which is paperless, fiberglass mats, or otherwise textured.
3. Level 2 finish at concealed areas (above ceilings, draftstopping).
4. No textured walls or ceilings.

3.02 CLEANING

- A. Remove soil, stain caused by drywall installation.

SUBMITTAL CHECKLIST

1. Product Data.

END OF SECTION 09 29 00.01

SECTION 09 30 00 - TILE

PART 1 - GENERAL

1.01 SUMMARY

- A. Related Documents: General and Supplementary Conditions of the Contract, Division 1 General Requirements, and Drawings are applicable to this Section.
  
- B. Section Includes:
  - 1. Colorbody Porcelain floor tile and base where shown on Drawings.
  - 2. Colorbody Porcelain tile base where shown on Drawings.
  - 3. Colorbody Porcelain wall tile where shown on Drawings.
  - 4. Glazed ceramic wall tile where shown on Drawings.

1.02 SUBMITTALS

- A. Shop Drawings:
  - 1. Indicate tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, control joints, thresholds, and setting details.
  - 2. Locate and detail expansion and control joints.
  
- B. Product Data:
  - 1. Manufacturer's product data sheets, cutsheets, specifications and instructions for using mortars, adhesives, and grouts.
  
- C. Samples:
  - 1. Tile: Submit color samples as specified on Drawings or manufacturer's entire color selection.
  - 2. Grout: Submit color samples as specified on Drawings or manufacturer's entire color selection.

1.03 QUALITY ASSURANCE

- A. Single Source Responsibility:
  - 1. Obtain each type and color tile material required from single source.
  - 2. Obtain setting and grouting materials from one manufacturer to ensure compatibility.
  - 3. Furnish a 10 year guarantee from installation material manufacturer. The guarantee is inclusive of installation materials, finish product, and labor.
  
- B. Manufacturer Qualifications:
  - 1. Tile: Minimum 5 years experience in manufacture of tile products.
  - 2. Setting Materials:  
Minimum 10 years experience in manufacture of setting and grout materials specified.
  - 3. Membrane: Minimum 5 years experience in manufacture of membrane materials specified.
  
- C. Installer Qualifications:
  - 1. Specializing in tile work having minimum of 5 years successful documented experience with work comparable to that required for this Project.
  
- D. Certifications:
  - 1. Submit "Master Grade Certificate" for each type of ceramic, quarry, and paver tile in accordance with requirements of ANSI A137.1.
  - 2. Submit manufacturer's certifications that mortars, adhesives, and grouts are suitable for intended and specified use.
  
- E. Conform to ANSI- Recommended Standard Specifications for Ceramic Tile - A137.1.

F. Conform to TCA Ceramic Tile: The Installation Handbook.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Comply with requirements of Section 01610.
- B. Labeling: Comply with ANSI A137.1.
- C. Deliver materials in manufacturer's unopened containers, fully identified with name, brand, type, and grade.
- D. Protect materials from contamination, dampness, freezing, or overheating in accordance with manufacturer's instructions.
- E. Broken, cracked, chipped, stained, or damaged tile will be rejected, whether built-in or not.
- F. Protect mortar and grout materials against moisture, soiling, or staining.

1.05 ENVIRONMENTAL REQUIREMENTS

- A. Comply with requirements of referenced standards and recommendations of material manufacturers for environmental conditions before, during, and after installation.
- B. Do not begin installation until building is completely enclosed and HVAC system is operating and maintaining temperature and humidity conditions consistent with "after occupancy" conditions for a minimum of 2 weeks.
- C. Maintain continuous and uniform building temperatures of not less than 50 degrees F during installation nor more than 100 degrees F.
- D. Ventilate spaces receiving tile in accordance with material manufacturers' instructions.

1.06 MAINTENANCE MATERIALS AND DATA

- A. See Specification Section 01781 - Closeout Maintenance Materials.
- B. Submit maintenance data under provisions of Section 01780 - Closeout Submittals.
- C. Include cleaning and maintenance methods, cleaning solutions recommended, stain removal methods, and polishes and waxes recommended.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. "Atlas Concorde USA."
- B. "Crossville".

2.02 GENERAL

- A. ANSI Standards:
  - 1. Comply with ANSI A137.1 "American National Standard Specifications for Ceramic Tile" for types, compositions, and grades of tile indicated.
  - 2. Furnish tile complying with "Standard Grade" requirements unless otherwise indicated.

- B. ANSI Standard for Tile Installation Materials:
  - 1. Comply with ANSI standard referenced with products and materials indicated for setting and grouting.
- C. Factory Blending:
  - 1. For tile exhibiting color variations within the ranges selected during sample submittals, blend tile in factory and package accordingly so that tile units taken from one package show the same range in colors as those taken from other packages and match approved samples.
- D. Mounting:
  - 1. Where factory-mounted tile is required, provide back-face or edge-mounted tile assemblies as standard with manufacturer unless another mounting method is indicated.
  - 2. Where tile is indicated for installation in swimming pools, on exteriors or in wet areas, do not use back- or edge-mounted tile assemblies unless tile manufacturer specifies that this type of mounting is suitable for these kinds of uses and has been successfully used on other projects.

### 2.03 COLORBODY PORCELAIN TILE

- A. Porcelain Floor Tile:
  - 1. Type: As shown on Drawings.
  - 2. Size: As shown on Drawings.
  - 3. Pattern: As shown on Drawings.
  - 4. Color: As shown on Drawings.
- B. Porcelain Tile Base:
  - 1. Type: As shown on Drawings.
  - 2. Size: As shown on Drawings.
  - 3. Pattern: As shown on Drawings.
  - 4. Color: As shown on Drawings.
- C. Porcelain Wall Tile:
  - 1. Type: As shown on Drawings.
  - 2. Size: As shown on Drawings.
  - 3. Pattern: As shown on Drawings.
  - 4. Color: As shown on Drawings.

### 2.04 CERAMIC TILE

- A. Glazed Ceramic Wall Tile:
  - 1. Type: As shown on Drawings.
  - 2. Size: As shown on Drawings.
  - 3. Pattern: As shown on Drawings.
  - 4. Color: As shown on Drawings.

### 2.05 THRESHOLDS

- A. Aluminum Edge Strip:
  - 1. General:
    - a. Provide aluminum edge strip at the transition between the tile flooring to the adjacent flooring.
    - b. Provide aluminum edge strip at outside vertical corners.
    - c. Equal to : “Schluter Systems” transition and edge strips.
  - 2. Size and Profile:
    - a. Bent angle profile with smooth finished edges.
    - b. Configuration as required to provide proper transition between finished surface of tile and that of the adjacent finished flooring.

- c. Height to match the thickness of the tile, with top surface smooth and flush with the tile.
3. Finish:
  - a. White zinc, aluminum or stainless steel.
  - b. Finish as selected from all manufacturer's standard selection.

#### 2.06 TRIMMERS

- A. Provide necessary caps, stops, returns, trimmers and other shapes to complete installation.

#### 2.07 MORTAR MATERIALS - THIN SET BEDS

- A. Portland Cement With Latex Additive; Thin-Set:
  1. Provide one of the following acceptable products:
    - a. "Custom Building Products", CustomCrete Latex Mortar Admix with site mixed Mortar or CreteMix.
    - b. "Laticrete, 4237 Latex Thin Set Mortar Additive.
    - c. "Mapei, Keracrete System, consisting of KER 303 Latex mixed with 1:1 sand/cement blend.
  2. Description:
    - a. Latex additive and site mixed portland cement mortar. Complying with ANSI A118.4.
  3. Quantity:
    - a. As recommended by latex additive manufacturer.
- B. Lightweight Portland Cement; Thin-Set (for use with 12" x 24" tile):
  1. Provide one of the following acceptable products:
    - a. "Custom Building Products", ProLite Tile & Stone Mortar or approved equal.
  2. Description:
    - a. Lightweight formula for use with large format tile and stone.
    - b. Complying with ANSI A118.4TE, A118.15TE and A118.11.

#### 2.08 MEMBRANES, PRIMERS AND SEALERS

- A. Crack Isolation and Waterproofing Membrane:
  1. Provide one of the following acceptable products:
    - a. "Mapei", Mapelastic 315.
    - b. "Custom Building Products", Red Gard.
  2. Description:
    - a. Trowel applied elastomeric compound.
  3. Accessories:
    - a. Preformed fiberglass mesh coving, inside and outside corners, and drain fittings.
    - b. Preformed expansion joint flashing.
- B. Concrete Slab Primers and Sealers:
  1. Where existing substrate is unacceptable for adhesion or bonding of new materials: Provide primers and sealers as required by flooring manufacturer to achieve the proper substrate conditions for installation of flooring.
  2. Scarify, shot-blast, or sand-blast floor as required at no change in bid price.

#### 2.09 GROUT

- A. Polymer- Modified Portland Cement
  1. Provide one of the following acceptable products:
    - a. "Custom Building Products", Prism Color Consistent Grout.
  2. A lightweight, polymer-modified, cement-based grout that offers consistent color without mottling or shading. Composition is a blend of specialty cements, recycled aggregates and chemicals.
  3. Comply with ANSI A118.7

4. Color: As indicated or to be selected by Architect from manufacturer's entire selection.
5. Location: Provide for all floor and wall surfaces, unless indicated otherwise. Non-sanded grout must be used with glass tile and glazed ceramic wall tile.

2.10 TILE AND GROUT SEALER:

A. Sealer:

1. Provide one of the following acceptable products:
  - a. "Custom Building Products", Tile Lab Surfacegard Penetrating Sealer.
2. Description:
  - a. Water-based, clear.
  - b. Compatible with specified tile and grout products.
  - c. Compatible with tile and grout manufacturer's warranty requirements.
  - d. Repel dirt, oils and stains. Resists mold and mildew.
  - e. Low odor, pH neutral and non-abrasive.
  - f. Allow moisture vapor transmission.
  - g. Rated for interior use.

B. Stripper:

1. Provide one of the following acceptable products:
  - a. "Custom Building Products", Tile Lab Heavy-Duty Cleaner and Stripper.
2. To clean surfaces and strip wax and acrylic finishes.
3. Apply to all surfaces in strict accordance with the manufacturer's instructions.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that areas to receive tile installed by thin bed method have wood float finish and pitched to drains. Substrates are to be true within 1/8 inch in 10'-0" (for all tiles 18" and larger). Substrates are to be true within 1/4 inch in 10'-0" (for all tiles smaller than 18").
- B. Condition of Surfaces to Receive Tile:
  1. Firm, dry, clean and free of oily or waxy films, mortar and soil.
  2. Grounds, anchors, plugs, hangers, bucks, electrical and mechanical work in or behind tile installed.
- C. Air Temperature and Surfaces in Rooms to Receive Flooring:
  1. Between 60 degrees to 90 degrees F, unless otherwise recommended by manufacturers of materials being installed.

3.02 PREPARATION

- A. Clean substrates.
- B. Wet down or wash dry, dusty surfaces and remove excess water immediately prior to application of tiles.
- C. Prepare surfaces in strict accordance with instructions of manufacturer whose setting materials or additives are being used.
- D. Acid Based Cleaners: Use not permitted.
- E. Scarify concrete substrates with blast track equipment if necessary to completely remove curing compounds or other substances that would interfere with proper bond of setting materials. Clean and

maintain substrate in condition required by setting material manufacturer.

- F. Do not seal substrate unless required by manufacturer.
- G. Prime substrate when required by manufacturer.
- H. Blending:
  - 1. For tile exhibiting color variations within the ranges selected during sample submittals, verify that tile has been blended in factory and packaged accordingly so that tile units taken from one package show the same range in colors as those taken from other packages and match approved samples.
  - 2. If not factory blended, either return to manufacturer or blend tiles at project site before installing.

### 3.03 INSTALLATION

- A. Concrete Slab Primers and Sealers:
  - 1. Install primers and sealers in accordance with manufacturers recommended installation guidelines and details.
  - 2. Apply all concrete slab primers and sealers as required to achieve an acceptable substrate for installation of flooring per flooring manufacturer's requirements. Apply when areas are ready or scheduled to receive flooring without delays to the project or schedule, and without any additional costs or change in time. If floor is required to be sandblasted, shot-blasted, scarified, or otherwise prepared, perform this work at no additional cost or change in time.
- B. Crack Isolation and Waterproofing Membrane:
  - 1. Install membrane in accordance with manufacturers recommended installation guidelines and details.
  - 2. Install membrane over cracks of up to 1/8 inch or greater in substrates. Apply a 12 inch wide strip centered on crack as crack isolation membrane.
  - 3. Install membrane with products or methods approved in writing by membrane manufacturer when joining, sealing, fastening, or adhering sheet membranes.
  - 4. Once all cracks have been addressed, install membrane to entire floor substrate as waterproofing membrane.
  - 5. Flash waterproofing up adjacent walls and surfaces in accordance to manufacturer's details, full height of base.
  - 6. Use preformed cove, corners, and expansion joint flashing.
  - 7. Allow membrane to cure as prior to setting tile.
  - 8. Do not allow construction traffic on membrane.
  - 9. Flood test waterproof membranes after fully cured.
  - 10. Field Quality Control water test when required.
- C. Tile Installation, General:
  - 1. Install tile materials in accordance with ANSI A137.1, other referenced ANSI and TCNA specifications, and TCNA "Handbook for Ceramic Tile Installation", except for more stringent requirements of manufacturer or these Specifications.
  - 2. Cut and fit tile tight to protrusions and vertical interruptions and treat with a compatible sealants as required. Form corners and bases neatly.
  - 3. Work tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make joint watertight, without voids, cracks, excess mortar, or grout.
  - 4. Prepare surface, fit, set, bond, grout and clean in accordance with applicable requirements of ANSI standards and Tile Council of North America.
- D. Layout:
  - 1. Lay out work to pattern indicated so that full tile or joint is centered on each wall and no tile of less

- than half width need be used. Do not interrupt pattern through openings. Lay out tile to minimize cutting and to avoid tile less than half size.
2. For heights stated in feet and inches, use courses of full tile to produce nearest attainable heights without cutting tile.
  3. No staggered joints will be permitted.
  4. Align joints in tile in both directions.
  5. Align joints between floor and base tile.
  6. Make joints between sheets of tile exactly same width as joints within sheet.
  7. File edges of cut tile smooth and even.
  8. Cut and fit tile at penetrations through tile. Do not damage visible surfaces. Carefully grind edges of tile abutting built-in items. Fit tile at outlets, piping and other penetrations so that plates, collars, or covers overlap tile.
  9. Extend tile work into recesses and under or behind equipment and fixtures, to form complete covering without interruptions, except as otherwise indicated. Terminate work neatly at obstructions, edges and corners without disrupting pattern or joint alignments.
  10. Accurately form intersections and returns.
- E. Thin Set Method, Floors and Walls, ANSI-108.4, 108.5, 108.14, 108.15, 108.16:
1. Apply mortar or adhesive with notched trowel using scraping motion to work material into good contact with surface to be covered. Maintain 90 percent coverage on back of tile and fully bed all corners.
  2. Apply only as much mortar or adhesive as can be covered within allowable windows as recommended by mortar or adhesive manufacturer or while surface is still tacky.
  3. When installing large tiles, ceramics or mosaics, trowel small quantity of mortar or adhesive onto back of each tile or sheet of tiles.
  4. Set tiles in place and rub or beat with small beating block.
  5. Beat or rap tile to ensure proper bond and also to level surface of tile.
  6. Align tile to show uniform joints and allow to set until firm.
  7. Clean excess mortar or adhesive from surface of tile with wet cheese cloth (not a sponge) while mortar is fresh.
  8. Allow face mounted tile to set until firm before removing paper and before grouting.
  9. Sound tile after setting. Replace hollow sounding tiles.
- F. Grouting, ANSI A108.9- 108.10:
1. Allow tiles to set a minimum of 48 hours before grouting.
  2. If bonding materials are rapid setting, follow manufacturer's recommendations.
  3. Install in accordance with grout manufacturer's recommendations and ANSI A108.10.
  4. Pack joints full and free before mortar takes initial set.
  5. Clean excess grout from surface with wet cheesecloth as work progresses. Do not use hydrosponges.
  6. Cure after grouting by covering with kraft or construction paper for 72 hours.
  7. Install sealant in vertical wall joints at interior corners.
- G. Sealing:
1. Allow grout to fully cure, 48 hours minimum.
  2. Thoroughly clean and prepare all surfaces of all grout and tile with manufacturer's cleaner and stripper product. Do not use cleaners containing ammonia, acids or bleach.
  3. Protect from any foot or equipment traffic prior to sealing.
  4. Apply first coat of clear sealer to all surfaces of all grout, per manufacturer's recommendations.
  5. Once dried, apply a second coat of clear sealer to all surfaces of all grout and tile, per manufacturer's recommendations.
  6. Allow sealer to fully cure between coats and after final coat prior to any foot or equipment traffic atop.



7. All grout surfaces to receive sealer, unless specifically indicated otherwise.
- H. Control Joints and Other Sealant Usage, ANSI-A108.1:
  1. Install control joints where tile abuts any/all retaining surfaces such as perimeter walls, curbs, columns, wall corners and directly over cold joints and control joints in structural surfaces conforming to architectural details.
  2. Install control joint in floors at spacings as indicated in TCNA Installation Handbook, unless noted otherwise.
  3. Rake or cut control joints through setting bed to supporting slab or structure. Keep joints free of mortar.
  4. Install in full accordance with TCNA Installation Handbook.
  5. Fill joints with self-leveling polyurethane sealant and backing material as required.
  6. Fill joints around toilet fixtures with white silicone sanitary sealant.
- I. Expansion Joints:
  1. Keep expansion joints free of mortar and grout.
  2. Use manufacturer's expansion joint flashing when covering expansion joints with waterproof or crack isolation membranes.
  3. Provide expansion joints directly over changes in material, over control and expansion joints in substrate, at juncture of floors and walls, at other restraining surfaces such as curbs, columns, bases, and wall corners, and where recommended by TCNA EJ171 Expansion Joint requirements.
  4. Install sealant in expansion joints.
  5. Provide sealant material at items penetrating tile work, unless otherwise indicated.
  6. Provide sealants and related materials in accordance with cited ANSI A108.1 and TCNA requirements.

#### 3.04 ADJUSTING

- A. Sound tile after setting. Replace hollow sounding units.

#### 3.05 CLEANING

- A. Clean excess mortar from surface with water as work progresses. Perform cleaning while mortar is fresh and before it hardens on surfaces.
- B. Sponge and wash tile diagonally across joints. Polish with clean dry cloth
- C. Remove grout haze following recommendation of mortar additive manufacturer. Do not use acids for cleaning.
- D. Remove temporary protective coating by method recommended by coating manufacturer that is acceptable to tile and grout manufacturer. Trap and remove coating to prevent it from clogging drains.
- E. Wipe all sealer from glazed surfaces or any other surface that will not accept sealer. Clean tile surfaces to remove any residue and do not allow to dry on surface.

#### 3.06 PROTECTION

- A. Prohibit traffic from floor finish for 72 hours after installation.
- B. Where temporary use of new floors is unavoidable, supply large, flat boards or plywood panels for walkways over kraft paper.
- C. Protect work so that it will be without any evidence of damage or use at time of acceptance.

CLARK COUNTY HEALTH DEPT  
FIRST FLOOR – CLINIC RENOVATIONS

1901.01  
02/26/19

SUBMITTAL CHECKLIST

1. Shop Drawings.
2. Samples.
3. Manufacturer's Product Data.

END OF SECTION 09 30 00

TILE

09 30 00-9

SECTION 09 51 13 - ACOUSTICAL CEILINGS

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Extent of acoustical ceilings as shown and scheduled on the Drawings.
- B. Types of acoustical ceilings specified in this Section include the following:
  - 1. Acoustical panel ceilings, exposed grid suspension.

1.02 QUALITY ASSURANCE

- A. UL Fire Hazard Classification:
  - 1. Where acoustical ceilings are indicated to comply with fire hazard classification provide acoustical materials which have been tested, rated and labeled by UL for indicated ratings.
  - 2. Classification: Maximum of 25 for flame spread.
- B. Sound and Noise Classification:
  - 1. Provide systems with NRC ratings in accordance with ASTM C423 and STC ratings in accordance with AMA1-II, as tested by an independent agency.

1.03 SUBMITTALS

- A. Product Data:
  - 1. Manufacturer's product data sheets, cutsheets, specifications and installation instructions.
- B. Samples:
  - 1. Where colors are specified, submit one sample of each type of acoustical unit and suspension system member.
  - 2. Where colors are not specified, or are specified as "to be selected", submit samples showing manufacturer's full range of standard colors for each type acoustical unit and suspension system.
  - 3. Submit additional or larger samples of selected colors upon request.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to the site in manufacturers original, unopened packages, with labels intact. Store and handle to avoid damage and exposure to elements. Remove damaged or otherwise unsuitable material from job site.

1.05 MAINTENANCE MATERIALS AND DATA

- A. See Specification Section 01781 - Closeout Maintenance Materials.
- B. Submit maintenance data under provisions of Section 01 78 00 - Closeout Submittals.

1.06 PROJECT CONDITIONS

- A. Do not install acoustical ceilings until space is enclosed and weatherproof, and until wet-work in space is completed, and until temperature and humidity will be continuously maintained at values near those indicated for final occupancy.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Provide ceiling panels, as approved by the Architect, by one of the following manufacturers:
  - 1. "Armstrong"

2. "U.S. Gypsum" (USG)
3. "Celotex"
4. "National Gypsum Company" (NGC)
5. "Certainteed"

- B. Provide suspension systems from same manufacturer as the ceiling panel, as approved by the Architect, or by one of the following manufacturers:
1. "Armstrong"
  2. "U.S. Gypsum/Donn Ceilings"
  3. "Chicago Metallic Corporation"

## 2.02 CEILING SYSTEMS

- A. Provide the following acoustical ceiling systems as indicated on the Drawings:

1. **Panel and Suspension System Type "A":**  
**(Lay-in, 2'x2', Drop Edge)**

- a. Panel:
  1. Model: "USG", Frost #440.
  2. Size: 2' x 2' x 7/8".
  3. Edge: Shadowline Beveled.
  4. NRC: 0.70.
  5. Light Reflect: 0.85.
  6. Color: White.
- b. Suspension System:
  1. Model: "Armstrong", Prelude XL.  
"USG", Donn DX/DXL.
  2. Profile: 2' x 2' grid, 15/16" flange.
  3. Material: Hot dipped galvanized.
  4. Color: White.
  
  1. Model: "Armstrong", Optima Open Plan Fine Fissured #3159.  
"USG", Halcyon Clima Plus #99221.
  2. Size: 2' x 2' x 1-1/2".
  3. Edge: Square.
  4. NRC: 1.00.
  5. Light Reflect: 0.88 minimum.
  6. Color: White.

## 2.03 CEILING SUSPENSION MATERIALS

- A. Comply with ASTM C 635, as applicable to type of suspension system required for type of ceiling units indicated. Coordinate with other work supported by or penetrating through ceilings, including light fixtures, and HVAC equipment.
- B. Structural Class:
  1. Intermediate-duty system.
- C. Attachment Devices:
  1. Size for 5 times design load indicated in ASTM C 635, Table 1, Direct Hung.
- D. Hanger Wires:
  1. Galvanized carbon steel, ASTM A 641, soft temper, pre-stretched, yield-stress load of at least 3 times design load, but not less than 12 gauge (0.106 inch).

- E. Type of System:
  - 1. Either direct-hung or indirect hung suspension system, as required to meet performance requirements.
- F. Carrying Channels:
  - 1. 1-1/2 inch steel channels, hot-rolled or cold-rolled, not less than 0.475 lbs. per lineal ft.
- G. Edge Moldings:
  - 1. Manufacturer's standard channel molding for edges and penetrations of ceiling, with single flange of molding exposed.
  - 2. 15/16 inch minimum exposed leg, finish to match grid finish.
- H. Exposed Suspension System:
  - 1. Manufacturer's standard exposed runners, cross-runners and accessories, of double web types and profiles indicated, with exposed cross runners coped to lay flush with main runners.
  - 2. Provide uniform factory-applied finish on exposed surfaces of ceiling suspension systems, including moldings, trim and accessories.
  - 3. Manufacturer's standard baked polyester finish, low gloss, color as selected.

### PART 3 - EXECUTION

#### 3.01 PREPARATION

- A. Furnish layouts for inserts, clips or other supports required to be installed by other trades for support of acoustical ceilings.
- B. Establish layout of acoustical units in compliance with reflected ceiling plan. Balance border widths at opposite edges of each ceiling. Avoid use of less-than-half width units at borders.

#### 3.02 INSTALLATION

- A. Install materials in accordance with manufacturer's printed instructions, and to comply with governing regulations, fire resistance rating requirements as indicated, and industry standards applicable to work.
- B. Install all acoustical units with grain in one plane and direction.
- C. Install suspension systems to comply with ASTM C 636, with hangers supported only from building structural members. Locate hangers near each end and spaced 4'-0" along each carrying channel or direct-hung runner, unless otherwise indicated, leveling to tolerance of 1/8 inch in 12'-0".
- D. Install edge moldings of type indicated at perimeter of acoustical ceiling area and at locations where necessary to conceal edges of acoustical units.
  - 1. Sealant Bed: Apply continuous ribbon of acoustical sealant, concealed on back of vertical leg before installing moldings.
  - 2. Screw-attach moldings to substrate at intervals not over 16 inches o.c. and not more than 3 inches from ends, leveling with ceiling suspension system to tolerance of 1/8 inch in 12'-0". Miter corners accurately and connect securely.
- E. Install panels in coordination with suspension system, with edges concealed by support of suspension members. Scribe and cut panels to fit accurately at borders and at penetrations.

- F. Install hold-down clips in areas indicated, and in areas where required by governing regulations or for fire resistance ratings; space as recommended by panel manufacturer, unless otherwise indicated or required.

3.03 ADJUST AND CLEAN

- A. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members; comply with manufacturer's instructions for cleaning and touch-up of minor finish damage.
- B. Remove and replace work which cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

SUBMITTAL CHECKLIST

- 1. Product Data.
- 2. Samples.

END OF SECTION 09 51 13

SECTION 09 65 19 - RESILIENT TILE FLOORING

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Section Includes:
  - 1. Rubber Base.
  - 2. Luxury Vinyl Tile.
  - 3. Resilient flooring accessories.
- B. Furnish labor, materials, equipment, special tools, supervision and services required for floor preparation for tile installation.
- C. Furnish labor, materials, equipment, special tools, supervision and services required to install the products and systems complete as shown on the Drawings and/or specified herein.

1.02 SUBMITTALS

- A. Manufacturer's Literature:
  - 1. Manufacturer's product data and descriptive literature.
  - 2. Manufacturer's installation instructions.
  - 3. Manufacturer's maintenance instructions.
  - 4. Material safety data sheets.
- B. Samples:
  - 1. Flooring:
    - a. 6"x6" actual tiles of colors as specified on drawings. Color charts alone are not acceptable.
    - b. If color is not specified, submit samples of manufacturer's entire selection.
  - 2. Base:
    - a. Full size sections of colors as specified on drawings. Color charts alone are not acceptable.
    - b. If color is not specified, submit samples of manufacturer's entire selection.

1.03 DELIVERY, STORAGE AND HANDLING

- A. Receive all products and materials as packaged by the manufacturer with manufacturer's seals and labels intact. Store materials at the job site within the building and in a dry place at least 48 hours before installing flooring materials.
- B. Store in space with temperature maintained between 65 degrees F and 90 degrees F.

1.04 MAINTENANCE MATERIALS AND DATA

- A. See Specification Section 017846 - Closeout Maintenance Materials.
- B. Submit maintenance data under provisions of Section 017800 - Closeout Submittals.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Provide products, as approved by the Architect, from one of the following approved manufacturers:
  - 1. Rubber Base:
    - a. "Johnsonite".
    - b. "Roppe".
    - c. "Flexco".

2. Luxury Vinyl Tile:
  - a. "Mannington Commercial"
  - b. "Patcraft"

2.02 MATERIALS

- A. Rubber Base:
  1. Thermoset rubber.
  2. Meets ASTM F-1860, Group 1.
  3. 1/8" thickness, 120' rolls, coved, set-on type.
  4. 4" high unless otherwise shown.
  5. Color: as shown on Drawings.
- B. Luxury Vinyl Tile:
  1. Type: as shown on Drawings.
  2. Size: as shown on Drawings.
  3. Finish: as shown on Drawings.
  4. Color: as shown on Drawings.
  5. Wear Layer Thickness: 20 mil., clear.
  6. Overall Thickness: .098"/ 2.5mm (nominal).
  7. Warranty: 15-year wear warranty.
- C. Rubber Base Adhesive:
  1. Comply with recommendations of rubber base manufacturer.
- D. Rubber or Vinyl Reducer Strips:
  1. 1-1/2" wide, trim to match tile thickness.
  2. Finish: as selected from manufacturer's entire selection.
- E. Concrete Slab Primers and Sealers:
  1. Where existing substrate is unacceptable for adhesion or bonding of new materials:  
Provide primers and sealers as required by flooring manufacturer to achieve the proper substrate conditions for installation of flooring.
  2. Scarify, shot-blast, or sand-blast floor as required at no change in bid price.
- F. Leveling Compound:
  1. Latex type as recommended by flooring manufacturer.
- G. Subfloor Leveler System:
  1. Equal to: "Johnsonite", Subfloor Leveler System.
  2. Resilient PVC gradual sloping ramped wedged materials.
  3. Provide slope, profile, and lengths as required for specific condition.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Spaces shall be at a minimum temperature of 70 degrees F.  
Temperature shall be maintained during and 48 hours after installation.



- B. Surfaces shall meet the minimum requirements of the manufacturer of the flooring. Do not install directly over plywood. Provide luan underlayment over all plywood decks. Commencement of installation of materials constitutes acceptance of the substrates.
- C. Work shall not be started until all items penetrating the flooring have been installed.
- D. No flooring shall be installed until the installer has ascertained that the chemical treatment of substrates will not interfere with the successful application of the flooring materials.
- E. Spaces in which resilient flooring is being installed shall be closed to traffic or other work.
- F. When solvent-based adhesives are used, the space shall be ventilated; use spark proof fans if natural ventilation is inadequate. Prohibit all smoking.
- G. Before installing flooring, test concrete floor for excessive moisture by taping an 18" x 18" mat of rubber or vinyl sheet material to floor at edges with masking tape. If condensation is apparent on the underside of the sheet after 24 hours, do not install flooring.
- H. Before installing flooring, fill all cracks and holes and level depressions with underlayment compound. Surfaces shall not vary more than 1/8" in 10' in any dimension.
- I. Before installing flooring, test concrete floor for acceptable adhesion and bonding of new materials atop substrate. If proper adhesion and bonding are not apparent, do not install flooring until sealer and primer are applied. Scarify, shot-blast, or sandblast floor if required to install sealer/primer.
- J. Install floor tiles wall to wall, under all moveable casework and cabinets, under all open counter areas, and up to fixed equipment and casework.

### 3.02 INSTALLATION

- A. Install flooring and products in accordance with the manufacturer's recommendations.
- B. Apply all concrete slab primers and sealers as required to achieve an acceptable substrate for installation of flooring per flooring manufacturer's requirements. Apply when areas are ready or scheduled to receive flooring without delays to the project or schedule, and without any additional costs or change in time. If floor is required to be sandblasted, shot-blasted, scarified, or otherwise prepared, perform this work at no additional cost or change in time. This includes, but is not limited to, floor slabs which are not acceptable due to excessive moisture content.
- C. Install subfloor leveler at all doors and openings as required so as to maintain a smooth, flat, and true transition between these flooring materials and adjacent flooring materials.
- D. Mix and apply adhesive as recommended by the manufacturer. Lay flooring so that fields or patterns center on areas. Adjust pattern so that edge pieces shall not be less than 1/2 size. Lay flooring true to line, level, and with tight joints. Cut flooring to and around all permanent cabinets and bases. Roll flooring to assure contact and proper adhesion to substrate.
- E. Apply wall base to walls, columns, pilasters, casework, and other permanent fixtures in rooms or areas where base is required. Install base in lengths as long as practicable with continuous wrapping outside corners, and miter cut inside corners. Do not use preformed corner pieces.
- F. Remove excessive adhesive in accordance with flooring manufacturer's instructions.

- G. Install edge strips at termination of flooring where substrate is exposed and extends beyond.
- H. Install edge strips at doors, openings, and any and all other junctions of this flooring and adjacent flooring materials. Firmly anchor strips to subfloor with adhesive. Make transition in floor finish at centerline of door bottom or opening through wall.
- I. After installation, maintain a minimum space temperature of 55 degrees F.
- J. Installation of rubber base at bullnose block:
  - 1. Applies to all rubber base products designed for square corners, not bullnose type.
  - 2. Traditional wall base profiles should be able to wrap the radius of the wall surface with no issues, but if issues exist, adhesion is a problem, a short return exists, or profiles are non-standard, then the use of a heat gun and pipe shall be required.
  - 3. The material shall be draped over the pipe that matches the radius of the wall, then apply heat to the surface until the material softens.
  - 4. Next the base shall be placed into a container of cold water to change the memory and profile.
  - 5. Then the pieces shall be cut to the proper and full length of the area and return.
  - 6. Apply contact adhesive, type as per the manufacturer's recommendations, for short returns.

3.03 RUBBER BASE CLEANING

- A. Not less than 4 days after flooring installation, clean all rubber base. Wash thoroughly, with a cleaner recommended by the flooring manufacturer, in accordance with flooring manufacturer's recommendations.

3.04 LUXURY VINYL TILE POST-INSTALLATION/ INITIAL CLEANING

- A. Wait 48 hours after flooring installation before performing initial cleaning.
- B. Sweep, dust mop or vacuum the floor thoroughly to remove all loose dust, dirt, grit and debris.
- C. Remove any dried adhesive residue with a clean cloth dampened with mineral spirits.
- D. Wash thoroughly, with a cleaning solution using a pH neutral cleaner in accordance with flooring manufacturer's recommendations. The dilution ratio depends on light to heavy soil conditions.
- E. Let cleaning solution dwell for 5 to 15 minutes.
- F. Scrub the flooring using floor scrubber equipped with manufacturers recommended pad.
- G. Remove the cleaning solution using a wet vacuum.
- H. Rinse the floor thoroughly with fresh, clean water.
- I. Remove the rinse water and allow the floor to dry completely before allowing foot traffic.
- J. Repeat the rinse process if necessary to move any visible haze.

SUBMITTAL CHECKLIST

- 1. Manufacturer's Literature.
- 2. Samples.

END OF SECTION 09 65 19

SECTION 09 68 00 - CARPETING

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment, special tools, supervision and services required for floor preparation for carpet installation.
- B. Furnish labor, materials, equipment, special tools, supervision and services required to manufacture, deliver and install all carpet tile indicated, noted and detailed on the Drawings and as specified herein.

1.02 QUALITY ASSURANCE

- A. Installer Qualifications:
  - 1. Installer who can demonstrate successful experience with installations on projects of similar size and scope to this project.
- B. Requirements and Regulatory Agencies:
  - 1. Provide carpet and padding which meets the following requirements.
    - a. Flame Spread: ASTM E84, 75 or less.
    - b. Radiant Panel Test: ASTM E648, .45 watts/CM2, or more.
    - c. Smoke Density Test: ASTM E662, 450 or less.
    - d. Pill Test: DOC FF-1-70, pass.
    - e. Meet local Fire Marshal's requirements.

1.03 SUBMITTALS

- A. Samples:
  - 1. Where colors are specified, submit one 24 inch x 24 inch sample of each color specified.
  - 2. Where colors are not specified or are specified as "to be selected", submit samples showing manufacturer's full range of standard colors for each type of carpet. Submit additional or larger samples of selected colors upon request.
- B. Shop Drawings and Manufacturer's Literature:
  - 1. Seaming diagram indicating:
    - a. Pattern direction.
    - b. Location of edge strips.
    - c. Dimensions of carpeted areas.
- C. Independent Testing Laboratory Test Reports:
  - 1. Fire hazard classifications.
  - 2. Static control.
  - 3. Construction.
- D. Certificates:
  - 1. Manufacturer's certification that rolls furnished were manufactured in accordance with specification requirements, stating yarn and weight, backing and weight and average tuft bind.
  - 2. Installer's list of comparable installations

1.04 DELIVERY, STORAGE AND HANDLING

- A. Deliver:
  - 1. Deliver carpet in original mill wrappings with register number tabs attached or stenciled on bale.
  - 2. Do not deliver materials until installation is ready to begin.

- B. Storage:
  - 1. Store materials in dry, well ventilated space.
  - 2. Do not store carpet rolls on end.

- C. Handling:
  - 1. Handle to protect from dirt and stains.

1.05 GUARANTEE / WARRANTY

- A. Warrant the following items for the lifetime of the carpet face:
  - 1. Wear: Not abrasively wear more than 10% face yarn weight under normal use.
  - 2. Static Electricity: Maintain specified levels of static electricity generation.
  - 3. Edge ravel: Will not occur under normal use.
  - 4. Delamination: Will not occur under normal use.
  - 5. Tuft Bind: Average face year tuft bind of 20 lbs.; will not zipper, wet or dry.
- B. Adjustment:
  - 1. During project guarantee period and within 15 days written notice from Owner or Architect, repair seams, edges and any other irregularity.

1.06 MAINTENANCE MATERIALS AND DATA

- A. See Specification Section 01 78 46 - Closeout Maintenance Materials.
- B. Submit maintenance data under provisions of Section 01 78 00 - Closeout Submittals.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Provide products, as approved by the Architect, from one of the following approved manufacturers:
  - 1. "Patcraft"
  - 2. "Interface"

2.02 CARPET

- A. Type:
  - 1. Modular Carpet Tile products as indicated on the Drawings.
  - 2. Modular Walk-off Carpet Tile products as indicated on the Drawings.
  - 3. Colors and patterns as indicated on the Drawings. If not indicated, colors and patterns are to be selected by Architect from manufacturer's entire selection for the specific carpet family specified.
- B. Static Electricity Generation (all carpet):
  - 1. Control Fiber: Stainless steel, aluminum, copper, or other metal, blended with carpet fiber, or by specific fiber blend.
  - 2. Maximum 3,000 volts at 20% relative humidity and 70°F temperature, AATCC-134-75.

2.03 INSTALLATION MATERIALS

- A. Adhesive:
  - 1. Carpet Adhesive:
    - a. Per carpet manufacturer for substrate and warranty requirements.
    - b. Nonflammable.
  - 2. Seam Adhesive:
    - a. Latex base per carpet manufacturer.

- B. Concrete Slab Primers and Sealers:
  - 1. Where existing substrate is unacceptable for adhesion or bonding of new materials: Provide primers and sealers as required by flooring manufacturer to achieve the proper substrate conditions for installation of flooring.
- C. Subfloor Leveler System:
  - 1. Equal to: “Johnsonite”, Subfloor Leveler System.
  - 2. Resilient PVC gradual sloping ramped wedged materials.
  - 3. Provide slope, profile, and lengths as required for specific condition.
- D. Edge Strips (direct glue-down installation):
  - 1. Extruded, anodized aluminum bar reducer at exposed edges.
  - 2. Undercut, flanged.

### PART 3 - EXECUTION

#### 3.01 PREPARATION

- A. Examination: Examine surfaces scheduled to receive carpeting for:
  - 1. Defects that will adversely affect the execution and quality of work.
  - 2. Deviation beyond allowable tolerances for carpet installation over concrete as indicated in Section 03300.
- B. Conditions of Surfaces:
  - 1. Do not install carpet over concrete substrate until concrete has cured minimum of 30 days.
  - 2. Check floor moisture content. Seal inverted glass tumbler to floor with putty. If condensation forms in 48 hours, do not install carpet.
  - 3. Do not start until unsatisfactory conditions are corrected.
  - 4. Install carpeting prior to installation of movable partitions and electrical floor outlets.
- C. Prime floor slab as recommended by manufacturer.
- D. Apply all concrete slab primers and sealers as required to achieve an acceptable substrate for installation of flooring per flooring manufacturer's requirements. Apply when areas are ready or scheduled to receive flooring without delays to the project or schedule, and without any additional costs or change in time. If floor is required to be sandblasted, shot-blasted, scarified, or otherwise prepared, perform this work at no additional cost or change in time. This includes, but is not limited to, floor slabs which are not acceptable due to excessive moisture content.

#### 3.02 INSTALLATION OF DIRECT GLUE DOWN CARPET

- A. Install carpet in accordance with submitted seam diagram, and manufacturer’s instructions.
- B. Fit carpet neatly into breaks and recesses, against bases, around pipes and penetrations, under saddles and thresholds, and around permanent cabinets and equipment.
- C. Application of Adhesive:
  - 1. Mix and apply adhesives in accord with manufacturer’s instructions.
  - 2. Do not soil walls, bases, or adjacent areas with adhesive.
  - 3. Promptly remove any spillage.
  - 4. Apply contact or seam adhesive 6 inches wide along carpet edges abutting walls and at cross-seams.

- D. Roll carpet to remove air bubbles and insure bond.
- E. Install carpeting wall to wall, under all moveable casework and cabinets, under all open counter areas, and up to fixed equipment and casework.

3.04 ADJUST AND CLEAN

- A. Cleaning:
  - 1. Remove spots and smears of cement from carpet immediately with solvent or adhesive remover.
  - 2. Remove rubbish, wrapping paper, salvages and scraps less than 2 square feet or less than 8 inches in any dimensions.
  - 3. Upon completion, vacuum with a commercial beater bar type vacuum cleaner.
- B. Protection:
  - 1. After each area of carpet has been installed, protect from soiling and damage.
  - 2. The use of tape to hold down floor protection is prohibited.
  - 3. The use of adhesive film floor protection is prohibited.

SUBMITTAL CHECKLIST

- 1. Samples.
- 2. Seaming Diagram.
- 3. Testing Laboratory Reports.
- 4. Certificate of Manufacturer's Compliance.

END OF SECTION 09 68 00

SECTION 09 90 00 - PAINTING

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Extent of painting work as indicated on the Drawings and specified herein including, but not limited to:
1. Surface Inspection and Preparation.
  2. Paint System Schedule - Interior Paint Systems.
- B. Additional requirements of the work are to include:
1. Painting and finishing of all interior and exterior items and surfaces throughout the project, except as otherwise indicated. Surface preparation, priming and costs of paint specified are in addition to shop-priming and surface treatment specified under other sections of work.
  2. Field painting of exposed steel and ironwork, and primed metal surfaces of equipment installed under mechanical and electrical, except as otherwise indicated.
  3. Field painting of all exposed interior and exterior structural steel components, whether indicated or not on the Drawings. Includes painting of galvanized components unless noted otherwise.
  4. Painting of exposed mechanical, electrical equipment items as indicated on the Drawings.
  5. Paint exposed surfaces except where natural finish of material is specifically noted as a surface not to be painted. Where items or surfaces are not specifically mentioned, paint same as adjacent similar materials or areas.
  6. "Paint" as used herein generally refers to all coating systems material, including primers, emulsions, enamels, stains, sealers, fillers, and other applied materials whether used as prime, intermediate or finish coat.

1.02 RELATED WORK

- A. Following categories of work are NOT included as part of field-applied finish work specified herein, or are included in other sections of the specifications:
1. Shop Priming:  
Unless otherwise specified, shop priming of ferrous metal items is included under various sections for structural steel, miscellaneous metal, and shop-fabricated or factory-built mechanical and electrical equipment or accessories.
  2. Pre-Finished Items:  
Unless otherwise indicated, do not include painting when factory-finishing or installer finishing is specified for such items including, but not limited to, pre-finished aluminum panels, finished mechanical and electrical equipment, light fixtures, switchgear, distribution cabinets, etc.
  3. Concealed Surfaces:  
Unless otherwise indicated, painting is not required on surfaces in concealed areas and generally inaccessible areas, such as interstitial spaces; however, doors and door frames in these spaces shall be painted.
  4. Finished Metal Surfaces:  
Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze and similar finished materials will not require finish painting, unless otherwise indicated.
- B. Following areas are to be included as special considerations of areas to NOT receive paint:
1. Operating parts and labels, moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, unless otherwise indicated.
  2. Any code-required labels, such as Underwriter's Laboratories and Factory Mutual, or any equipment identification, performance rating, name or nomenclature plates.

1.03 SUBMITTALS

- A. Product Data:
1. Manufacturer's published product data sheets, specifications, materials description and technical

information.

2. Manufacturer's published installation and application instructions.
3. Materials Safety and Data Sheets (MSDS).

B. Samples and Draw Downs:

1. If colors and finishes are indicated, submit samples boards (draw downs) for each as selected.
2. If colors are not indicated, they will be selected by the Architect from manufacturer's entire selection. Submit complete range of available paint colors, either in the form of a fan set or individual color chips box set.
3. If finishes are not indicated, they will be selected by the Architect from manufacturer's entire selection.
4. Once colors and finishes have been chosen, submit samples boards for each color selected.
5. Sample boards to be 8-1/2 inch x 11 inch cardstock, painted with actual product of color and finish as selected by the Architect. Submit three (3) of each color as selected.

C. Mock-Ups:

1. Paint on site, a test sample area of wall, 2 foot x 2 foot minimum in size. Complete test area for each color selected, for each paint system specified, and per each substrate material included, as directed by the Architect.
2. Paint one (1) hollow metal door and frame complete, as directed by Architect.
3. Mock-ups shall indicate color, texture and finish.
4. Do not proceed with paint work until mock-ups have been approved by the Architect.
5. If deemed unacceptable by the Architect, create another mock-up to correct items of unacceptability. Continue process until an approved mock-up has been achieved.
6. Once an approved mock-up has been achieved, use as a standard of comparison for all work.
7. Do not destroy or remove mock-up until all paint work is complete and accepted.
8. Accepted mock-ups may remain as part of the work or discarded, at the discretion of the Architect.

D. Compatibility Tests:

1. Paint on site, (2) 2 foot x 2 foot minimum test sample areas of each existing and/or previously painted surface to receive new painted finish atop. Complete test area for each color selected, for each paint system specified, per each existing color of existing surface, and per each substrate material included, as directed by the Architect.
2. Check for compatibility by applying the test sample of the recommended coating system as stated. Allow to dry for one week prior to testing adhesion per procedures of ASTM D3359.
3. Test sample areas are to be completed by the installing contractor, reviewed and checked on site by the paint manufacturer's representative. If non-compatibility issues exist, the paint manufacturer shall provide recommendations and solutions to compatibility and/or alterations to the paint system specified.
4. Submit all test results and manufacturer's approval in writing to the Architect. Painting manufacturer must certify that they approve the test results and will include the longevity and performance of the paint system in their warranty and guarantees of the paint system.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to job site in original, new, sealed and unopened packages and containers bearing manufacturer's name and product label.
- B. Store and protect products in strict accordance with manufacturer's recommendations and requirements.
- C. Provide physical properties of each product to be used on the project, including:
  1. Weight per gallon.
  2. Solids by weight.
  3. Solids by volume.



4. V.O.C. as supplied.

D. Container labeling to include:

1. Date of manufacture.
2. Manufacturer's name.
3. Product name, type and stock number.
4. Color and finish.
5. Rate of coverage.
6. Application instructions for surface preparation, drying time, cleanup, mixing and reducing.

E. Store paint materials at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in well ventilated area, unless required otherwise by manufacturer's instructions.

F. Take precautionary measures to prevent fire hazards and spontaneous combustion.

1.05 ENVIRONMENTAL REQUIREMENTS

- A. Provide continuous ventilation and heating facilities to maintain surface and ambient temperatures above 50 degrees F for twenty-four (24) hours before, during and forty-eight (48) hours after application of finishes, unless required otherwise by manufacturer's instructions.
- B. Do not apply exterior coatings during rain or snow, or when relative humidity is above 50 percent, unless required otherwise by manufacturer's instructions.
- C. Minimum Application Temperatures for Latex Paint: 50 degrees F for exterior, unless required otherwise by manufacturer's instructions.
- D. Minimum Application Temperatures for Varnish Finishes: 65 degrees F for interior and exterior, unless required otherwise by manufacturer's instructions.
- E. Provide lighting level of 80 foot candles measured mid-height at substrate surface.

1.06 PROJECT CONDITIONS

- A. Apply water-base paints only when temperature of surfaces to be painted and surrounding ambient air temperatures are between 60 degrees F and 85 degrees F, for at least 72 hours prior to beginning of installation, unless otherwise permitted by paint manufacturer's printed instructions.
- B. Apply solvent-thinned paints only when temperature of surfaces to be painted and surrounding ambient air temperatures are between 45 degrees F and 95 degrees F, for at least 72 hours prior to beginning of installation, unless otherwise permitted by paint manufacturer's printed instructions.
- C. Maintain proper ambient air temperatures throughout entire timeframe of installation and cure period.
- D. Do not install until space is enclosed, weathertight, and ambient conditions are controlled and stabilized.
- E. Do not apply in snow, rain, fog or mist; or when relative humidity exceeds 85%; or on damp or wet surfaces.
- F. Provide adequate ventilation at all times for proper drying.

1.07 MAINTENANCE MATERIALS AND DATA

- A. See Specification Section 01 78 46 - Closeout Maintenance Materials.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Provide products, as approved by the Architect, from one of the following approved manufacturers:
1. "The Sherwin-Williams Company" (S-W).
  2. "PPG Paints" (PPG).
  3. "Benjamin Moore & Company" (Moore).

2.02 MATERIALS

- A. Quality:
1. Provide best quality grade of various types of coatings as regularly manufactured by acceptable paint materials manufacturers.
  2. Materials not displaying manufacturer's identification as a standard, "top-of-the-line" product will not be acceptable.
- B. Compatibility:
1. Provide finish coats which are compatible with prime paints used.
  2. Review other sections of these specifications in which prime paints or factory coats are to be provided to insure compatibility of total coatings systems for various substrates.
  3. Upon request from other trades, furnish information on characteristics of finish materials proposed for use, to insure compatible prime coats are used.
  4. Provide barrier coats over incompatible primers or remove and re-prime as required.
  5. Provide undercoat paint produced by same manufacturer as finish coats. Where undercoats specified are not considered by the paint manufacturer to be fully compatible with the finish coat, submit recommended undercoat substitution to Architect for acceptance. No additional cost to the Owner will be considered for such a change.
  6. Use only thinners approved by the paint manufacturer, and use only within recommended limits.
  7. Notify the Architect in writing of any anticipated problems during bidding with the use of specified coating systems with substrates primed by others.
- C. Coatings and Pigments:
1. To be pure, non-fading, applicable types to suit substrates and service expectations indicated.
  2. Ready mixed, except field catalyzed coating.
  3. Pigments processed to a soft paste consistency, capable of being readily and uniformly dispersed to as a homogeneous coating.
  4. Good flow and brushing properties; capable of drying or curing free of streaks or sags.
- D. Accessory Materials:
1. All materials, such as linseed oil, shellac, turpentine, paint thinners, and other materials not specifically indicated but required to achieve the finishes specified.
  2. All of commercial quality.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Examine surfaces scheduled to be finished prior to commencement of work.
1. Report any conditions that may potentially affect proper application.
  2. Verify that surfaces and substrate conditions are ready to receive work as instructed by the product manufacturer.
  3. Do not proceed with work until unsatisfactory conditions have been corrected.

- B. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint film or proper adhesion required.
- C. Beginning of installation equates to acceptance of the substrate by the contractor.

3.02 PREPARATION - GENERAL

- A. Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified, for each particular substrate condition.
  - 1. Clean surfaces to be painted before applying paint or surface treatments.
  - 2. Remove oil and grease prior to mechanical cleaning.
  - 3. Program cleaning and painting so that contaminants from cleaning process will not fall onto wet, newly painted surfaces.
- B. Provide all scaffolding and staging required for work in this Section.
  - 1. Coordinate locations to eliminate interference with work of others.
- C. Remove hardware, hardware accessories, machined surfaces, electrical plates, lighting fixtures, trim, clocks, speakers, devices, fittings and similar items which are not to be finish-painted, prior to preparing surfaces or finishing.
- D. Provide surface-applied protection prior to surface preparation and painting operations for all adjacent areas, surfaces, or items to remain.
- E. Correct minor defects and clean surfaces which affect work of this Section.
- F. Shellac and seal marks which may bleed through surface finishes.

3.03 MATERIALS PREPARATION

- A. Mix and prepare painting materials in accordance with manufacturer's directions.
- B. Store materials not in actual use in tightly covered containers. Maintain containers used in storage, mixing and application of paint in a clean condition, free of foreign materials and residue.

3.04 SURFACE PREPARTION

- A. Uncoated Steel and Iron Surfaces:
  - 1. Clean ferrous surfaces, which are not galvanized or shop coated, of oil, grease, dirt, loose mill scale and other foreign substances by solvent or mechanical cleaning.
  - 2. Where heaving coatings of scale are evident, remove by wire brushing or sandblasting; clean by washing with solvent.
  - 3. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned.
- B. Shop Primed Steel Surfaces:
  - 1. Sand and scrape to remove loose primer and rust.
  - 2. Feather edges to make touch-up patches inconspicuous.
  - 3. Clean surfaces with solvent.
  - 4. Prime bare steel surfaces.
  - 5. Touch-up shop-applied prime coats wherever damaged or bare, and where required by other sections of these specifications. Clean and touch-up with same type shop primer.
- C. Galvanized Surfaces:
  - 1. Remove surface contamination and oils and wash with non-petroleum based solvent.
  - 2. Apply coat of etching primer.

- D. Gypsum Board Surfaces:
  - 1. Latex fill minor defects.
  
- E. Interior Wood Scheduled to Receive Transparent Finish:
  - 1. Remove loose dust, dirt, grit and foreign matter.
  - 2. Set nails and screws.
  - 3. Fill nail and screw holes, cracks and blemishes after staining with filler to match color wood or stain.
  - 4. Sand smooth.
  
- F. Interior Wood Items Scheduled to Receive Paint Finish:
  - 1. Wipe off dust and grit prior to priming.
  - 2. Seal knots, pitch streaks and sappy sections with sealer.
  - 3. Fill nail holes and cracks after primer has dried; sand between coats.
  
- G. Wood Doors, Metal Doors and Metal Frames:
  - 1. Apply one coat of paint to glazing stops and rabbets prior to glazing.
  
- H. New Wood:
  - 1. Prime, stain or seal wood required to be job-painted, immediately upon delivery to job.
  - 2. Prime edges, ends, faces, undersides, and backsides of such wood.
  
- I. Existing Wood:
  - 1. Lightly sand and clean to remove dirt, grease, oils, etc.
  - 2. Patch and repair any surface damage prior to re-finishing.
  
- J. Previously Coated Surfaces:
  - 1. Maintenance painting will frequently not permit or require complete removal of all old coatings prior to repainting. However, all surface contamination such as oil, grease, loose paint, mill scale, dirt, foreign matter, rust, mold, mildew, mortar, efflorescence and sealers must be removed to assure sound bonding to the tightly adhering old paint.
  - 2. Feather edges of existing coating to make touch-up patches inconspicuous.
  - 3. Glossy surfaces of old paint films must be clean and dull before repainting. Accomplish by sanding or thoroughly washing with an abrasive cleanser.
  - 4. Spot prime any bare areas with an appropriate primer.
  - 5. Provide compatibility tests per submittal requirements herein.
  - 6. If the coating proves incompatible, complete removal is required.
  
- Q. Hand Tool Cleaning:
  - 1. Hand tool cleaning removes all loose mill scale, loose rust, and other detrimental foreign matter. It is not intended that adherent mill scale, rust and paint be removed by this process.
  - 2. Mill scale, rust and paint are considered adherent if they cannot be removed by lifting with a dull putty knife.
  - 3. Prior to hand tool cleaning, remove visible oil, grease, soluble residues and salts by the methods outlined in the "Steel Structures Paint Council Surface Preparation Specification No. 2 (SSPC-SP1 and SSPC-SP2).

3.05 PROTECTION

- A. Protect elements surrounding the work of this Section from damage or disfiguration.
  
- B. Repair damage to other surfaces caused by work of this Section.
  
- C. Furnish drop cloths, shields, and protective methods to prevent spray or droppings from disfiguring other

surfaces.

D. Remove empty paint containers from site.

3.06 APPLICATION

A. General:

1. Apply paint and coatings in strict accordance with manufacturer's published directions. Apply all coatings at manufacturer's recommended spreading rates per coat to provide finished wet mil and dry mil coverage per coat between the minimum and maximum microns indicated.
2. Apply additional coats when undercoats, stains or other conditions show through final coat of paint, until paint film is of uniform finish, color and appearance. Give special attention to insure that surfaces, including edges, corners, crevices, welds and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
3. Paint surfaces behind movable equipment same as similar exposed surfaces.
4. Paint back sides of access panels, and removable or hinged covers to match exposed surfaces.
5. Sand lightly between each succeeding enamel or varnish coat.
6. Omit first coat (primer) on metal surfaces which have been shop-primed and touch-up painted, unless otherwise indicated.

B. Scheduling Painting:

1. Apply first-coat material to surfaces that have been cleaned, pretreated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
2. Allow sufficient time between successive coatings to permit proper drying.
3. Do not apply finishes to surfaces that are not dry.

C. Technique:

1. Apply each coat to uniform finish.
2. Apply each coat of paint slightly darker than preceding coat, unless otherwise approved.
3. Sand lightly between coats to achieve required finish.
4. Allow applied coat to dry before next coat is applied.

D. Apply paint as recommended by the manufacturer and as approved by the Architect:

1. Apply final coat to concrete, masonry and smooth finished wall and ceiling surfaces with roller.
2. Apply paint to exposed ceiling surfaces and in inaccessible areas by spraying.
3. Do not use spray application on other areas without written approval of Architect.
4. Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as indicated or if not indicated, as recommended by coating manufacturer.

E. Draw lines of demarcation between different shades or colors to eliminate blurred edges.

F. Back-prime all surfaces of interior and exterior wood blocking and woodwork, except pressure treated wood, with one coat of aluminum paint.

G. Prime back surfaces of interior woodwork scheduled to receive stain or varnish finish with gloss varnish reduced 25 percent with mineral spirits.

H. Where clear finishes are required, tint fillers to match wood.

1. Work fillers into the grain before set.
2. Wipe excess from surface.

I. Coat steel items that come in contact with aluminum items with a field coat of bituminous paint.

J. Mechanical and Electrical Work:

1. Painting of mechanical and electrical work is limited to those items exposed in finished occupied spaces.
  2. Mechanical items to be painted include, but are not limited to, ducts, diffusers, piping, pipe hangers, supports and accessory items.
  3. Electrical items to be painted include, but are not limited to, the following:
    - a. Conduit and fittings (In finished areas only, unless otherwise indicated).
    - b. Switchgear (In Finished areas only, unless otherwise indicated).
- K. Paint all exposed ceiling construction, including joists, structural members, metal deck and all exposed conduit, pipes, pipe covering and ductwork in these ceiling areas.
- L. Seal, stain and varnish concealed and semi-concealed surfaces of millwork items.
  1. Seal internal surfaces of millwork items with two coats of shellac.
  2. Brush apply only.
- M. Prime Coats:
  1. Apply prime coat of material which is required to be painted or finished, and which has not been prime coated by others.
  2. Re-coat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn-through or other defects due to insufficient sealing.
- N. Pigmented (Opaque) Finishes:
  1. Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance and coverage.
  2. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness or other surface imperfections will not be acceptable.
- O. Completed Work:
  1. Match approved samples for color, texture and coverage.
  2. Remove, refinish or repaint work not in compliance with specified requirements.
- P. Renovation and Patching Areas:
  1. Prepare and prime new construction portions of surfaces per specifications
  2. Prepare existing surfaces located in the same plane as renovation or patching per specifications.
  3. Paint area of renovation and patching entire surface full height, from "floor-to-ceiling" and from "corner-to-corner".

3.07 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

- A. Paint shop primed equipment.
- B. Touch up marred or damaged shop prefinished items.
- C. Remove unfinished louvers, grilles, covers and access panels on mechanical and electrical components and paint separately.
- D. Replace identification markings on mechanical or electrical equipment when painted accidentally.
- E. Paint interior surfaces of air ducts and convector and heating cabinets that are visible through grilles and louvers with one coat of flat black paint, to limit sight line.
  1. Paint dampers exposed behind louvers, grilles, and convector and heating to match face panels.
- F. Paint exposed conduit and electrical equipment occurring in finished areas.

- G. Paint both sides and all edges of plywood backboards for electrical and telephone equipment with one coat of light to medium gray paint before installation of equipment.
- H. Reinstall electrical plates, hardware, light fixture trim, clocks, speakers and fittings removed prior to finishing.
- I. Paint all equipment located on roofs, including aluminum exhaust fans, gravity relief vents, appliance exhausts and all equipment unless factory finish is acceptable to Architect.
- J. Refer to Division 23 and Division 26 for schedule of color coding and identification banding of equipment, ductwork, piping and conduit.

3.08 CLEANING AND PROTECTION

- A. As work proceeds, promptly remove paint where spilled, splashed or spattered.
- B. During progress of work maintain premises free of unnecessary accumulation of tools, equipment, surplus material and debris.
- C. Collect cotton waste, cloths and material which may constitute a fire hazard, place in closed metal containers and remove daily from site.
- D. During progress of work remove from site discarded paint materials, rubbish, cans and rags at end of each work day. **DISPOSE OF ALL MATERIALS IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.**
- E. Upon completion of painting work, clean window glass and other paint-spattered surfaces.
- F. Protection:
  - 1. Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing, and repainting.
  - 2. Provide "Wet Paint" signs as required to protect newly-painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.
  - 3. At the completion of work of other trades, touch-up and restore all damaged or defaced painted surfaces.

3.09 PAINT SYSTEM SCHEDULE - INTERIOR PAINT SYSTEMS

- A. STEEL, GALVANIZED (interior, new construction, painted finish):
  - 1st Coat - Solvent-Based Acrylic Coating  
"S-W, Galvite HS, B50WZ30"
  - 2nd Coat - Urethane Alkyd Topcoat  
"S-W, Industrial Urethane Alkyd Enamel, B54-150 Series, Gloss"
  - 3rd Coat - Urethane Alkyd Topcoat  
"S-W, Industrial Urethane Alkyd Enamel, B54-150 Series, Gloss"  
\*Not less than 3.0 mils dry film thickness.
- B. STEEL, ALL TYPES (interior, existing and/or previously painted, painted finish):
  - 1st Coat - Rust-Inhibitive Metal Primer  
"S-W, Kem Bond HS, Universal Metal Primer"  
\*Color selected as most appropriate beneath finish topcoats.  
\*Additional coats as required to cover existing color or correct rusting.

\*Painter responsible to visit site and field verify surface prep required.

2nd Coat - Urethane Alkyd Topcoat  
"S-W, Industrial Urethane Alkyd Enamel, B54-150 Series, Gloss"

3rd Coat - Urethane Alkyd Topcoat  
"S-W, Industrial Urethane Alkyd Enamel, B54-150 Series, Gloss"  
\*Not less than 3.0 mils dry film thickness.

C. METAL DOORS AND FRAMES (interior, new construction, painted finish):

Touch-Up - Rust-Inhibitive Metal Primer  
"S-W, Kem Bond HS, Universal Metal Primer"  
\*May use original primer if available.  
\*Color selected as most appropriate to match primer.

2nd Coat - Urethane Alkyd Topcoat  
"S-W, Industrial Urethane Alkyd Enamel, B54-150 Series, Gloss"

3rd Coat - Urethane Alkyd Topcoat  
"S-W, Industrial Urethane Alkyd Enamel, B54-150 Series, Gloss"  
\*Not less than 3.0 mils dry film thickness.  
\*Additional coats as required by Architect to achieve desired and intended result.

D. METAL DOORS AND FRAMES (interior, existing and/or previously painted, painted finish):

1st Coat - Rust-Inhibitive Metal Primer  
"S-W, Kem Bond HS, Universal Metal Primer"  
\*Color selected as most appropriate beneath finish topcoats.  
\*Additional coats as required to cover existing color or correct rusting.  
\*Painter responsible to visit site and field verify surface prep required.

2nd Coat - Urethane Alkyd Topcoat  
"S-W, Industrial Urethane Alkyd Enamel, B54-150 Series, Gloss"

3rd Coat - Urethane Alkyd Topcoat  
"S-W, Industrial Urethane Alkyd Enamel, B54-150 Series, Gloss"  
\*Not less than 3.0 mils dry film thickness.  
\*Additional coats as required by Architect to achieve desired and intended result.

E. GYPSUM DRYWALL / PLASTER WALL SURFACES (interior, new construction, painted finish):

1st Coat - Latex Primer  
"S-W, ProMar 200 Zero VOC, Interior Latex Primer, B28W02600"  
\*Tinted toward final color.

2nd Coat - Interior Latex Topcoat  
"S-W, ProMar 200 Zero VOC, Interior Latex, Eg-Shel"

3rd Coat - Interior Latex Topcoat  
"S-W, ProMar 200 Zero VOC, Interior Latex, Eg-Shel"

F. GYPSUM DRYWALL / PLASTER WALL SURFACES (interior, existing and/or previously painted, painted finish):

1st Coat - Latex Primer  
"S-W, ProMar 200 Zero VOC, Interior Latex Primer, B28W02600"



- \*Painter responsible to visit site and field verify surface prep required.
- \*Additional coats as required to cover existing color and texture.

2nd Coat - Interior Latex Topcoat  
"S-W, ProMar 200 Zero VOC, Interior Latex, Eg-Shel"

3rd Coat - Interior Latex Topcoat  
"S-W, ProMar 200 Zero VOC, Interior Latex, Eg-Shel"

G. GYPSUM DRYWALL / PLASTER CEILING AND SOFFIT SURFACES (interior, existing and/or previously painted, painted finish):

1st Coat - Latex Primer  
"S-W, PrepRite ProBloc, Interior/Exterior Latex Primer/Sealer, B28W02600"  
\*Painter responsible to visit site and field verify surface prep required.  
\*Additional coats as required to cover existing color and texture.

2nd Coat - Interior Latex Topcoat  
"S-W, ProMar 200 Zero VOC, Interior Latex, Flat "

3rd Coat - Interior Latex Topcoat  
"S-W, ProMar 200 Zero VOC, Interior Latex, Flat "

H. WOODWORK (interior, new construction, painted finish):

Filler - Pore Filler (for open-grained wood only)  
"S-W, Sher-Wood, Natural Filler"  
\*Do not sand filler coat. Allow to completely dry before topcoating.

1st Coat - Alkyd Primer  
"S-W, ProBlock, Interior Oil-Based Primer, B79W8810"

2nd Coat - Interior Latex Topcoat  
"S-W, ProClassic Waterborne Interior Acrylic, Semi-Gloss, B31 Series"

3rd Coat - Interior Latex Topcoat  
"S-W, ProClassic Waterborne Interior Acrylic, Semi-Gloss, B31 Series "

I. WOODWORK (interior, existing and/or previously painted, painted finish):

1st Coat - Alkyd Primer  
"S-W, ProBlock, Interior Oil-Based Primer, B79W8810"  
\*Painter responsible to visit site and field verify surface prep required.  
\*Additional coats as required to cover existing color and texture.

2nd Coat - Interior Latex Topcoat  
"S-W, ProClassic Waterborne Interior Acrylic, Semi-Gloss, B31 Series "

3rd Coat - Interior Latex Topcoat  
"S-W, ProClassic Waterborne Interior Acrylic, Semi-Gloss, B31 Series "

J. WOODWORK (interior, new construction, stained/transparent finish):

Filler - Pore Filler (for open-grained wood only)  
"S-W, Sher-Wood, Natural Filler"  
\*Do not sand filler coat. Allow to completely dry before topcoating.  
\*Tint towards shade of stain.

- 1st Coat - Interior Oil Stain  
"S-W, Wood Classics, Interior Oil Stain, A49-200 Series" (quart size)  
"S-W, Wood Classic, Interior Oil Stain 250, A49-800 Series" (gallon size)
- 2nd Coat - Interior Oil Varnish  
"S-W, Wood Classics, Waterborne Polyurethane Varnish, A68 Series, Satin"
- 3rd Coat - Interior Oil Varnish  
"S-W, Wood Classics, Waterborne Polyurethane Varnish, A68 Series, Satin"
- 4th Coat - Interior Oil Varnish  
"S-W, Wood Classics, Waterborne Polyurethane Varnish, A68 Series, Satin"  
\*Sand between each coat, unless otherwise indicated.

SUBMITTAL CHECKLIST

1. Product Data.
2. Samples and Draw Downs.
3. Mock-Ups.
4. Compatibility Tests.

END OF SECTION 09 90 00

SECTION 10 13 00.02 - INTERIOR SIGNS

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Interior signage as indicated on the Drawings and specified herein, including:
1. Non-illuminated room identification signs.

1.02 SUBMITTALS

- A. Product Data:
1. Submit manufacturer's product data, cutsheets, specifications and installation details to illustrate conformance with the specifications and for selection and/or verification of all sign layout and construction items.
- B. Signage Layout:
1. Provide initial layout of signage and lettering, including the actual spacing and layout required for the surface to be installed on.
  2. Draw and indicate layout to scale, with field verified measurements included.
- C. Mounting Template:
1. Once a final layout has been approved, supplier shall provide the Contractor with a full scale mounting template for proper positioning of studs and fasteners.
- D. Samples:
1. Submit full size samples of actual sign for each type specified.
  2. Submit color charts for color selections.
  3. Submit actual color and finish samples as requested for selection of verification.

1.03 DELIVERY, STORAGE AND HANDLING

- A. Deliver signs in manufacturer's unopened packages, with labels intact.
- B. Store and handle letters so as to prevent damage or deterioration.

PART 2 - PRODUCTS

2.01 ROOM IDENTIFICATION SIGNS

- A. Typical Flat Wall Signs:
1. Basis of Specifications: "ASI Sign Systems", InTouch.
- B. Type of Graphics:
1. .080" thick matt acrylic faceplate laminated to a .080" thick acrylic back.
  2. Raised etched tactile letters welded to front surface of plaque.
  3. Letters and numerals shall also be included in raised braille, color same as background.
  4. Copy to be centered, unless indicated otherwise.
  5. Signs are to be unframed.
  6. Typeface: Uppercase 3/4" high.
  7. Font: As selected from manufacturer's entire standard selection.
  8. Size: as shown on Drawings.

2.02 ROOM IDENTIFICATION SIGNS

- A. In-House Updatable Flat Wall Signs:

1. Basis of Specifications: “ASI Sign Systems”, InTouch.

B. Type of Graphics (permanent graphic panel):

1. .080” thick matt acrylic faceplate laminated to a .080” thick acrylic back.
2. Raised etched tactile letters welded to front surface of plaque.
3. Letters and numerals shall also be included in raised braille, color same as background.
4. Copy to be centered, unless indicated otherwise.
5. Signs are to be unframed.
6. Typeface: Uppercase 3/4" high.
7. Font: As selected from manufacturer’s entire standard selection.
9. Size: as shown on Drawings.
10. Interchangeable panel area to be a single area or subdivided as per the Architect’s requirements.
  - a. See details on the Drawings or as specified herein.
  - b. Replaceable paper insert within integral place holder guides.
  - c. Clear panel over changeable graphics window.

### 2.03 COORDINATION

A. Colors shall be selected from manufacturer's entire standard selection, panel and type.

B. Room numbers to be determined during shop drawing submittals, unless otherwise indicated.

C. Blank Back Plate:

1. Flat and smooth panel.
2. Material and color to match plaque.
3. Size to match plaque.
4. Provide for any sign where plaques need to be installed on a glass sidelight, transom or window, or where backside and/or mounting is otherwise exposed to view. Provide when and where directed by Architect, whether indicated or not, for location of sign installation designated.

D. Field verify all locations of signs with Architect prior to mounting. Relocate as required.

### 2.04 TYPES OF SIGNS

A. The following signs shall be provided throughout the project, whether indicated or not:

1. All restrooms shall be identified by room name, pictogram, and universal symbol of accessibility (where applicable).
2. All mechanical and utility rooms shall be identified by "Mechanical", unless otherwise indicated.
3. All electrical rooms shall be identified by "Electrical", unless otherwise indicated.
4. All fire extinguishers shall be identified by universal symbol for extinguisher.
5. All elevators shall have sign stating, “In Case of Fire Do Not Use Elevator” and include the universal symbol for a person using the stairway.
6. All elevator equipment rooms shall have sign stating, “Elevator Equipment Room. Storage Within Is Prohibited. By Order of the State Building Code”.
10. Typical sign elevations are indicated on Drawings. See miscellaneous details on Drawings.

### 2.05 SIGN SCHEDULE (ROOM IDENTIFICATION SIGNS)

A. Sign Type: A

Location: Restroom 128, Restroom 129.

Text: To be determined.

B. Sign Type: B

Location: Restroom 113.

Text: To be determined.

- C. Sign Type: C  
Location: Restroom 130.  
Text: To be determined.
  
- D. Sign Type: D  
Location: Office 111, Office 119, Office 120, Office 121, Office 122, Office 123, Office 124, Office 125,  
Office 126, Office 131, Office 132  
Text: To be determined.
  
- E. Sign Type: E  
Location: Fire Extinguisher locations.  
Text: as Shown on Elevation.
  
- F. Sign Type: F  
Location: Vestibule 101 (at Exterior door), Vestibule 117 (at Exterior door), Corridor 103 (at Door to  
Waiting 102), Corridor 127 (at Door to Waiting 102), Waiting 102 (at Door to Vestibule 101), Corridor 118  
(at Door to Vestibule 117).  
Text: as Shown on Elevation.
  
- G. Sign Type: G  
Location: Elevator  
Text: as Shown on Elevation.
  
- H. Sign Type: H  
Location: Elevator Eqpm 105  
Text: as Shown on Elevation.
  
- I. Sign Type: I  
Location: Mechanical 112, Storage/ Supplies 116, IT 133, Mechanical 134.  
Text: To be determined.

### PART 3 - EXECUTION

#### 3.01 INSTALLATION

- A. Install all signs square, plumb, level, and true.
  
- B. Adhesive Attachment:
  - 1. Install using manufacturer's standard double-click foam tape, or combination of tape and adhesive.
  - 2. Use for typical installations on gypsum board or like surfaces.
  
- C. Fastener Attachment:
  - 1. In addition to the adhesive method above, install one screw fastener through face of sign and into the substrate at all corners. Finish paint screw heads to match face of sign.
  
- D. Mount sign on wall adjacent to latch side of door, unless otherwise indicated.  
If wall space does not permit this location, consult Architect for mounting desired.
  
- E. Mounting height shall be 60" above finish floor to centerline of the sign, unless otherwise indicated.

- F. Install blank back plate on opposite side of plaque where applicable.

SUBMITTAL CHECK LIST

1. Manufacturer's Literature.
2. Signage Layout.
3. Mounting Template.
4. Samples.

END OF SECTION 10 13 00.02

SECTION 10 26 13 – WALL AND CORNER GUARDS

PART 1 – GENERAL

1.01 WORK INCLUDED

- A. Extent of wall and corner guards as indicated on Drawings and specified herein.

1.02 QUALITY ASSURANCE

- A. Deliver materials to project site in original packages or containers clearly labeled to identify manufacturer, brand name, quality or grade and fire hazard classification.
- B. Store materials in original undamaged packages or containers. Store materials in a clean, dry location protected against damage of any kind.
- C. Illuminate areas of installation using building's permanent lighting system; temporary lighting alone will not be acceptable.

1.03 SUBMITTALS

- A. Product Data:
1. Manufacturer's product data sheets, cutsheets, specifications and installation instructions.
  2. Include data on physical characteristics, durability, fade resistance and flame resistance characteristics.
- B. Samples:
1. Submit actual samples of corner guards selected. If color not selected, submit samples for selection by the Architect from manufacturer's entire selection of type indicated. Printed color chart alone is not acceptable.

1.04 WARRANTY

- A. Provide manufacturer's standard 5-year warranty.

PART 2 – PRODUCTS

2.01 MATERIAL

- A. Provide one of the following approved products as indicated on the Drawings:
1. Surface-mounted Corner Guards (Mounted to continuous aluminum retainer):  
"Koroseal Wall Protection Systems"; Korogard G200 Series Surface-Mounted Corner Guards.  
"Pawling" Pro-tek NXT Impact Protection Systems, CG-10.  
"C/S Acrovyn" Wall & Door Protection" SM-20N  
"IPC Door and Wall Protection Systems"; 150 Surface Mount Corner Guard
- a. Description:
1. Snap-on extruded vinyl corner guards with continuous aluminum retainer.
  2. Dimensions: Leg length: 3", Angle: 90 degrees w/ 1/4" radius.
  3. Height: As noted on Drawings.
  4. Profile: High-impact vinyl acrylic extrusion with rounded corners.
  5. Thickness: nominal .080".
  6. Flame Resistance: Class A fire rating (ASTM E 84).
  7. Texture: Pebble.
  8. Provide injection-molded top and bottom caps.

PART 3 – EXECUTION

3.01 PREPARATION

- A. Verify that wall surfaces are acceptable to receive the specified guard systems. Do not begin installation until acceptable conditions have been corrected.

3.02 INSTALLATION

- A. Install Corner Guards securely to wall according to manufacturer’s instructions and recommendations.
- B. Install Corner Guards accurately in location, alignment, and elevation.
- C. Install Corner Guards full height of door opening or wall opening, unless indicated otherwise. If desired by the Architect in the field, field cut units to lesser height within openings.
- D. Remove excess adhesive along edges.

3.03 ADJUST AND CLEAN

- A. Remove surplus materials, rubbish, and debris resulting from corner guard installation upon completion of work, and leave areas of installation in neat, clean condition.
- B. Clean corner guards and adjacent wall surfaces of all stains, marks and adhesives.

SUBMITTAL CHECK LIST

- 1. Product Data.
- 2. Samples.

END OF SECTION 10 26 13



SECTION 10 26 23.16 - FIBER REINFORCED PANELS

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Fiberglass reinforced plastic coated panels as shown on drawings and specified herein.
  - 1. Wall Panels.

1.02 QUALITY ASSURANCE

- A. USDA accepted
  
- B. FM Approved and UL Classified

PART 2 - PRODUCTS

2.01 WALLS PANELS

- A. "Crane Composites" Glasboard@ panels.
  - 1. 4' wide x length as required to extend from floor to ceiling without seams.
  - 2. Class A (1) Flame Spread (max. 25 per ASTM E-84).
  - 3. Color: as selected from manufacturer's complete range of color selections.
  - 4. Texture: Embossed.
  - 5. Fasteners and accessories as required for a complete installation.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install per manufacturer's recommendations.
  
- B. Install over gypsum wall board using Crane Advanced Polymer adhesive.
  
- C. Install moldings at all joints, set in silicone sealant.

3.02 CLEANING PROTECTION

- A. Clean as recommended by manufacturer.

END OF SECTION 10 26 23.16

SECTION 10 28 13 - TOILET ACCESSORIES

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Toilet accessories as shown on Drawings and specified herein.
- B. Installation of owner-furnished toilet accessories as shown on Drawings and specified herein.

1.02 SUBMITTALS

- A. Manufacturer's Literature:
  - 1. Submit manufacturer's "cut sheets" for each item specified, showing installation details, and product information.

1.03 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to job with manufacturer's unopened packages, with label in tact.
- B. Store and handle products so as to avoid damage. Remove all damaged items from the job site.
- C. Maintain protective covers until Substantial Completion.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Provide products, as approved by the Architect, from one of the following manufacturers:
  - 1. "Bobrick"
  - 2. "Bradley"
  - 3. "ASI"
  - 4. "AJW Architectural Products"
  - 5. "Global Industrial"
- B. See Specifications Section 01 62 00 - Product Options and Substitutions.

2.02 MATERIALS

- A. Grab Bars:
  - 1. "Bobrick" B-6806 Series.
  - 2. Surface mounted, stainless steel, safety grip finish, concealed mounting, snap-flange cover.
  - 3. Provide 1-1/2" diameter x sizes and configurations as shown on Drawings.
  - 4. Provide at locations as shown on Drawings, or if not shown, provide as follows:
    - a. 36" long horizontally on rear wall of all ADA stalls.
    - b. 42" long horizontally on side wall of all ADA stalls and ambulatory stalls.
    - c. 18" long vertically on side wall of all ADA stalls and ambulatory stalls.
    - d. L-shaped horizontal, 2-wall bar configuration at all ADA shower stall locations.  
Need not provide if supplied as integral to a shower stall unit. See Plumbing.  
19-3/4"x34-3/4" overall for 36"x36" stalls, 40"x58" nominal overall for roll-in stalls.
- B. Toilet Paper Dispensers (Typical Height Installation):
  - 1. "Bobrick" B-4288, "Contura" Series.
  - 2. Dual-roll type.
  - 3. Surface-mounted, stainless steel, satin finish.
  - 4. Provide at locations as shown on Drawings, or if not shown, provide one per water closet.

5. Coordinate location with partition door and other accessories.
  6. Provide this type of dispenser at all typical height locations, except where other types are specifically indicated for use.
- C. Sanitary Napkin Disposals:
1. "Bobrick" B-270, "Contura" Series.
  2. Surface-mounted, stainless steel, satin finish.
  3. Provide at locations as shown on Drawings, or if not shown, provide one per female water closet.
  4. Coordinate location with partition door and other accessories.
- D. Mirrors (Frameless):
1. "Bradley" 747 Series Frameless mirror.
  2. 1/4" select float glass mirror.
  3. Edges ground and polished smooth.
  4. Surface mounted, concealed fasteners.
  5. Install centered on lavatory or sink.
  6. Provide sizes as shown on Drawings, or if not shown, provide 24"x36".
  7. Provide at locations as shown on Drawings, or if not shown, provide one per lavatory or sink.
- E. Soap Dispensers:
1. "Bobrick" B-4112.
  2. Surface-mounted, stainless steel, satin finish.
  3. All-purpose valve for use with all antibacterial, liquid, and lotion soaps.
  4. Provide at locations as shown on Drawings, or if not shown, provide one between every 2 lavatories and one per every sink.
- F. Paper Towel Dispensers (C-Fold Type):
1. "Bobrick" B-4262, "Contura" Series.
  2. Surface-mounted, stainless steel, satin finish, lockable.
  3. Provide at locations as shown on Drawings.
- G. Diaper Changing Stations:
1. "Bobrick" KB-200-01 (Grey).
  2. Surface-mounted, high-impact polyethylene with foam core, concealed fasteners.
  3. Provide at locations as shown on Drawings, or if not shown, provide one per restroom.
- H. Coat Hooks (Single Hook):
1. "Bobrick" B-76717.
  2. Surface mounted, stainless steel, satin finish, concealed mounting.
  3. Provide at locations as shown on Drawings.
  4. Provide one on inside of each toilet partition stall door if partitions do not already include one.
  5. Provide two at each shower stall.
  6. Mount one hook at ADA height at all ADA shower stalls.
- I. Medical Pass-Thru Cabinet:
1. "Bobrick" Recessed Specimen Pass-thru Cabinet, B-505.
  2. Recessed, stainless steel, satin finish.
  3. Self-closing doors with spring hinges.
  4. Interlocking mechanism prevents both doors from being open at the same time.
  5. Includes removable stainless steel tray.
  6. Adjustable to wall thickness of 3" to 5-3/4".
  7. Provide at location as shown on Drawings.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Finish surfaces shall be complete prior to installation of accessories.
- B. Verify all materials that anchoring devices are compatible with accessories.

3.02 INSTALLATION

- A. Drill holes of proper size for required anchoring devices to be concealed in finish wall behind accessories.
- B. Install accessories plumb and true.
- C. Grab Bars:
  - 1. Anchor grab bars on wall and partition of end toilet compartment and at urinals indicated.
  - 2. Install as recommended by manufacturer to withstand 500lb. downward pull.

3.03 MOUNTING HEIGHTS

- A. See Drawings for mounting heights.
- B. If not shown on Drawings, confer with Architect for heights required.
- C. All mounting heights shall meet all current Codes and ADA requirements.

3.04 ADJUSTING AND CLEANING

- A. Check operation of accessories; make final adjustment as required.
- B. Remove protective covers.
- C. Clean stainless steel of all paints, and other markings, with mild detergent and water.

3.05 PROTECTION

- A. Protect accessories from damage until Substantial Completion.
- B. Replace any damaged accessories.

SUBMITTAL CHECK LIST

- 1. Manufacturer's Literature.

END OF SECTION 10 28 13

SECTION 12 21 00.02 - HORIZONTAL MINI-BLINDS

PART 1 – GENERAL

1.01 WORK INCLUDED

- A. Horizontal aluminum mini-blinds and related hardware at all exterior windows and elsewhere as indicated on Drawings or specified herein.

1.02 SUBMITTALS

- A. Mini-Blind Schedule:
1. Indicate locations, quantities and field measurements of dimensions for all window blinds.
  2. Indicate proposed mounting and fastening procedurals.
- B. Product Data:
1. Manufacturer's product data sheets, cutsheets, specifications, materials description, installation and maintenance instructions.
- C. Samples:
1. Actual samples of all items needed for colors and finishes.
  2. Colors and finishes to be selected by Architect from manufacturer's entire selection.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS AND PRODUCTS

- A. Provide one of the following approved products:
1. "SWF Contract", "Bali Classics 1" Mini-Blinds".
  2. "Levolor", "Riveria 1" Blind".
  3. "Hunter Douglas Architectural" FR Aluminum Horizontal Blinds.

2.02 HORIZONTAL MINI-BLINDS

- A. Steel Channel Headrail:
1. 1 inch high by 1-1/2 inches deep U-shaped channel of 0.024 inch thick phosphate treated steel with rolled edges at top.
  2. Coated with vinyl primer and polyester baked enamel finish coat.
  3. Operating hardware shall be locked into head channel with no mechanical cleats visible from underside of headrail.
- B. Enclosed Metal Bottomrail:
1. Tubular shape, 0.028 inch thick electro-zinc coated steel.
  2. Coated with vinyl primer and polyester baked enamel finish coat.
  3. Bottomrail shall be roll-formed with locking groove to receive dust cover.
  4. Molded end caps shall fit snugly over ends of bottomrail.
  5. Molded plastic retainer shall secure ladder tape to bottomrail.
- C. Slats:
1. Shall be virgin aluminum alloyed for maximum strength, flexibility and resistance to internal and external corrosion.
  2. Shall be nominally 1 inch wide.
  3. A properly formed contour creates the finished crown with corner radii of 3/16 inch tangent to edge of slat.
  4. Slat thickness and ladder support distances shall prevent visible sag or bow even after continued usage in any indoor environment.

- D. Tile Rod Support:
  - 1. Provides support for tile rod and shall be low friction thermoplastic.
  - 2. Guides ladder and lift cord through bottom of head channel with abrasion or discoloration.
  
- E. Ladder Drum:
  - 1. Shall be 0.028 inch thick electroplated steel with a smooth rolled edge hole each side and two locking prongs to hold the braided ladder securely.
  
- F. Cord Lock:
  - 1. Shall be of a snap-in design with stainless steel wear guard and a floating locking pin.
  - 2. Cord lock shall be crack-proof that shall lock blind upon release of lift cord.
  - 3. Dual cord separators shall prevent cords from twisting or tangling.
  
- G. Shaft Type Tilter:
  - 1. Shall be a worm and gear type enclosed in a polycarbonate housing.
  - 2. Tilter shall be a snap-in component.
  - 3. Tilt Wand:
    - a. Shall be a clear plastic hollow rod, with hexagonal shape measuring approximately 1/4 inch across the points.
    - b. Wand shall be attached to the tilter shaft with a spring clip.
    - c. Color-coordinated insert for the hollow wand.
  
- H. Braided Ladders (Slat Supports):
  - 1. Shall be of braided polyester yarn which will provide maximum strength and flexibility with minimum stretch.
  - 2. Horizontal components (rungs) shall be not less than two threads.
  - 3. Distance between end ladder and end of slats will not exceed 6 inches; distance between braided ladders shall not exceed 22 inches.
  - 4. Braided Ladder Clip:
    - a. Plated metal clip shall be mechanically clinched to the end of each braided ladder.
  
- I. Lift Cord:
  - 1. Shall be braided with polyester jackets and rayon center core and shall be 1.8mm.
  - 2. Shall be of sufficient length to control the raising or lowering of the blind and be securely anchored to the bottomrail.
  - 3. Lift cord shall be equipped with Bali tassel, or ring pull with a 4 inch cord.
  
- J. End Support Brackets:
  - 1. Shall be treated steel with a vinyl primer and polyester baked enamel finish coat to match headrail.
  - 2. Shall incorporate a rivet-hinged front cover with safety lip.
  
- K. Intermediate Support Brackets:
  - 1. Shall be furnished for blinds over 60 inches wide.
  - 2. Maximum spacing for intermediate support brackets shall be 48 inches.
  
- L. End Stiffeners:
  - 1. Shall be electroplated steel and inserted at each end of headrail to add rigidity.
  - 2. Field adjustable tabs eliminate lateral movement.

- M. Color:
1. Color for slats as indicated on the Drawings, or if not indicated, to be selected by Architect from manufacturer's entire selection.
  2. Color of headrail, bottomrail, ladder, cord and plastic accessories shall coordinate with slats.

### PART 3 - EXECUTION

#### 3.01 INSPECTION

- A. Verify that the work in which the blinds will be installed is free of conditions that interfere with blind installations and operations. Begin blind installation only when unsatisfactory conditions have been corrected.

#### 3.02 INSTALLATION

- A. Install blinds in accordance with manufacturer's installation procedures except as otherwise specified herein.
- B. Install intermediate support brackets and extension brackets as needed to prevent deflection in headrail.
- C. Install blinds with adequate clearance to permit smooth operation of blinds and any sash operators. Hold blinds 1/4 inch clear from each side of window opening on inside mount unless other clearance is indicated.
- D. Set tilt locking controls. Demonstrate blinds to be in smooth, uniform working order.

#### 3.03 CLEANING

- A. Clean soiled blind surfaces with a mild soap solution.
- B. Do not use steam, hot water, bleach or any abrasive or solvent-based cleaners.
- C. Do not wash metallic colors.
- D. To ensure proper drying, provide adequate ventilation for blinds, remove bottomrail plastic end caps, and tip headrail and bottomrail to drain water.

#### 3.04 HORIZONTAL BLIND SCHEDULE

- A. Provide blinds at the following locations:
1. At windows as indicated on the Drawings.
  2. If not indicated, provide at all exterior window openings, regardless of window type.

#### SUBMITTAL CHECK LIST

1. Window Shades Schedule.
2. Product Data.
3. Samples.

END OF SECTION 12 21 00.02

SECTION 21 13 13 - WET PIPE FIRE SUPPRESSION SPRINKLERS

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. The work included under this Section of the Specifications consists of the furnishing of all materials and equipment, obtaining and paying for all permits required, and the performing of the labor and services required for refurbishment and relocation of heads as required by new layout for a complete and operating automatic fire sprinkler system. This includes design, layout, shop drawings, approvals, all items of material and labor, and all other costs to complete the installation.
- B. Types of work in this section include (but are not limited to) the following:
  - 1. Sprinkler O.S. and Y. Gates.
  - 2. Overhead mains and risers.
  - 3. Branch lines and sprinkler heads.
  - 4. Drains, inspector's tests and flushing connections.
  - 5. Gauges.
  - 6. Shop drawings and operating instructions.
  - 7. Pipe sleeves, hangers, supports, etc.
  - 8. Waterflow and valve supervisory devices.  
(Waterflow switch, pressure switch and O.S. and Y. position indicator switches).
  - 9. Dry system requirements for combined systems, wet and dry zones from same riser headers.
  - 10. Emergency Access Knox-Box.
- C. Prepare all drawings, calculations, and applications required to obtain approval of the system by all state and local authorities having jurisdiction.
- D. See Fire Protection Drawings for additional requirements.

1.02 QUALITY ASSURANCE

- A. Licensed fire protection contractor with current certification to perform work in the state, county and city where work is located.
- B. Install work in accordance with the regulatory requirements of the following:
  - 1. State Building Code, current edition.
  - 2. NFPA 13.
  - 3. UL Listed, Underwriter's Laboratory.
  - 4. FM Approved, Factory Mutual, pamphlet 20 - rules for installing sprinklers.
  - 5. State Safety Code for Elevators and Escalators.
  - 6. State Fire Marshal.
  - 7. City/County Fire Marshal.

1.03 SUBMITTALS

- A. Submissions for Approval:
  - 1. Submit required shop drawings and hydraulic calculations to State Fire Protection Bureau, local Fire Marshal, and local Fire Chief for review and approval.
  - 2. Submit evidence of meetings with local Fire Marshal and local Fire Chief, as part of the submittals package to the Architect.
  - 3. Once approvals of these plans is obtained from the above-mentioned authorities, submit six (6) copies of complete submittals to the Architect.
  - 4. Contractor to make all submittals for permits and approvals and as required per all State regulations and requirements.



- B. Shop Drawings:
  - 1. Must be legible prints of clear sharp tracings, prepared at scale equal to that of the plans in the Drawings and must be shown along with piping, sprinklers, etc.
  - 2. Indicate each area of installation as to zone included within and riser served from.
  - 3. Indicate construction and installation of each area including ceiling and roof heights.
  - 4. Prepare using a reference all of the architectural, structural, mechanical, plumbing and electrical drawings. Match room names, numbers, and general project nomenclature.
  - 5. Submit reflected ceiling plans to Architect for final approval prior to fabrication. Contractor shall exercise special attention to coordinate head location layouts in ceilings.
  - 6. Architect will make available, at no cost, base xref drawings in Autocad format for fire protection contractor's use in preparing shop drawings.
  - 7. Architect to review layout for purposes of aesthetics and design intent, not for coverage or capacity of the sprinkler system or system design.
  
- C. Product Literature:
  - 1. Manufacturer's cutsheets and product literature for all materials included in the system.
  
- D. Calculations:
  - 1. Designs and calculations must be certified by a registered design professional licensed to design systems in the State of installation.
  - 2. Design per hazard classifications as indicated on the Drawings.
  - 3. Indicate on plans areas and hazard classifications of submitted calculations for reference.
  
- E. At the completion of the work provide a small scale plan of the building, indicating the locations of all control valves, low point drains, and inspectors test. The plans shall be neatly drawn.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Arrange deliveries in quantities to permit continuity of installation.
  
- B. Store materials off ground and under cover to prevent rusting, denting and other damage and deterioration prior to installation.

1.05 PROJECT DESIGN REQUIREMENTS

- A. Design system for the occupancies and hazards as listed on the drawings.
  
- B. Design the complete system according to the criteria outlined on the plans and specifications.
  
- C. Contractor is responsible for meeting with local Fire Marshal and local Fire Chief to insure the system meets all local requirements and they are all incorporated into the system design.
  
- D. Contractor is responsible for meeting with local water utility to insure the system meets all requirements for the local utility coordination, connections, and equipment. Coordinate approval and acceptance of equipment service items with utility.
  
- E. No additional compensation will be considered for local official or utility requirements that may not have been indicated on the plan.
  
- F. Contractor is responsible for conducting a flow test for use in determination of sprinkler system design requirements. Coordinate with local utility and/or fire department.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Sprinkler Heads:
1. Recessed Pendent Sprinklers in Ceilings:
    - a. Rated for Hazard Classifications as indicated on the Drawings.
    - b. Quick Response, Standard or Extended coverage.
    - c. White polyester coated head and escutcheon.
    - d. Surface pendants or extended escutcheons types are not acceptable.
  2. Upright Pendent Sprinklers at Exposed Structure:
    - a. Rated for Hazard Classifications as indicated on the Drawings.
    - b. Quick Response, Standard or Extended coverage.
    - c. Brass head.
    - d. Provide wire guards in mechanical rooms and like conditions.
  3. Sidewall Sprinklers:
    - a. Rated for Hazard Classifications as indicated on the Drawings.
    - b. Quick Response, Standard or Extended coverage.
    - c. White polyester coated head and escutcheon.
  4. Dry Pendent Sprinklers:
    - a. Rated for Hazard Classifications as indicated on the Drawings.
    - b. Quick Response, Standard or Extended coverage.
    - c. White polyester coated head and escutcheon
    - d. Brass heads where not exposed to view
- B. Pipe:
1. Black Steel:
    - a. Schedule 40 (1" – 2").
    - b. Schedule 10 (2-1/2" – 8").
    - c. 300 psi maximum working pressure rating.
    - d. ASTM A-135.
  2. Meet NFPA tests and requirements for:
    - a. Welded Outlets.
    - b. Hydrostatic Pressure.
    - c. Side Wall Rupture.
    - d. Vibration Test.
- C. Fittings:
1. Cast Iron, Threaded:
    - a. Class 125 (standard).
    - b. ANSI B16.14.
  2. Cast Iron, Flanged:
    - a. Class 250 (extra heavy).
    - b. ASME B16.1.
    - c. Flanged bolts shall be hexagon head machine bolts with heavy semi-finished hexagon head nuts, cadmium plated, ANSI B18.2.
  3. Malleable Iron:
    - a. Class 150 and Class 300.
  4. Rigid Couplings and Fittings:
    - a. Ductile Iron.
    - b. ASTM A-536.
    - c. Gasket material shall be Grade "A" EPDM.

- D. Flexible Sprinkler Head Drops:
1. Basis of specification: "Easy Flex USA", EasyFlex Sprinkler Drops.
  2. Used in lieu of hard-piped head drops to lay-in grid ceiling systems.
  3. Corrugated stainless steel flexline pipe tubing, braided or unbraided.
  4. Manufacturer's standard T-bar and T-bar brackets as required and as appropriate to the ceiling grid system being installed into.
  5. Manufacturer's standard snap clamps to secure the sprinkler head to the T-bar.
  6. Provide all nipples, nuts, reducers, isolation rings, gaskets, clamps, brackets, bar, etc. required for a complete installation.
  7. Take care to not crimp bends or pinch lines of installation to obstruct flow.
- E. Pipe Hangers:
1. Carbon steel with plated finish.
  2. Adjustable swivel ring.
  3. Suitable for structural system without use of expansion bolts.
  4. Provide all threaded rods as required, material and finish to match hangers.
  5. Provide steel beam clamps as required, material and finish to match hangers.
- F. Riser Valves, Check Valves, and Butterfly Valves:
1. Review, inspect, restore or modify as required to meet current codes.
  2. Ductile Iron.
  3. Vertical or horizontal configuration and orientation as most appropriate for area and layout of install.
- G. Double Check Assemblies:
1. Review, inspect, restore or modify as required to meet current codes.
  2. Designed to prevent backflow of pollutants, that are objectionable but not toxic, from entering the potable water supply system.
  3. Designed to be under continuous service pressure while possibly subjected to simultaneous backflow pressure or back siphonage.
  4. Consist of two independent check modules within a single housing and two drip tight shut-off valves.
  5. Contains integral by-pass meter to monitor water flow in gallons per minute.
- H. Post-Indicator Valves:
1. Review, inspect, restore or modify as required to meet current codes.
  2. Field adjust for install to height per NFPA requirements.
  3. Set the "Open" and "Shut" targets for the appropriate valve size.
  4. Standpipe above ground and head top section to be painted red.
- I. Fire Department Connections:
1. Review, inspect, restore or modify as required to meet current codes.
  2. Install in freestanding post configuration on site, atop service vault or a through-wall configuration directly on building as indicated on the Drawings and as required by state and local authorities.
  3. Designed for connection of fire department hoses to supplement water supply.
  4. Field adjust for install to height per NFPA requirements.
  5. Designed to provide minimum 250 gpm flow per each 2-1/2" inlet.
  6. Cast brass, two way inlet body with drop clappers.
  7. Polished brass plate with lettering "Fire Department Connection".
  8. Two polished brass double female snoots, plugs and chains.
  9. Threads as approved by local Fire Marshal or Fire Chief. Contractor to field verify.
  10. 1/2" automatic ball drip between check valve and fire department connection.

- J. Drains:
1. Review, inspect, restore or modify as required to meet current codes.
  2. 2" drain risers.
  3. Main drain line at riser to exterior of building.
  4. Pipe to suitable hub or floor drains inside building.
  5. Auxiliary drains at low points and where otherwise necessary.
  6. Coordinate location and routing of drain lines with Architect.
- K. Signs:
1. Review, inspect, restore or modify as required to meet current codes.
  2. Standard metal signs.
  3. Meet all requirements of NFPA 13.
- L. Alarms:
1. Review, inspect, restore or modify as required to meet current codes.
  2. Bells:
    - a. Rated for indoor or outdoor use.
    - b. Red powder coated finish.
    - c. Provide weather-proof backbox for all outdoor installations.
    - d. Provide electrical to bells as required for proper operation.
  3. Flow Switches:
    - a. Provide downstream of the butterfly valve for each riser zone.
    - b. Approved for use on steel pipe.
    - c. Actuated when a flow of 10 gpm minimum occurs downstream of device.
    - d. Contains an adjustable, instantly recycling pneumatic retard. Select and set retard period.
    - e. Provide electrical to switches as required for proper operation.
  4. Tamper/Supervisory Switches:
    - a. Provide at butterfly valve for each riser zone.
    - b. Provide at post indicator valve for system.
    - c. Weatherproof and tamperproof switch to monitor open valve positions.
    - d. Mechanically activated by cover removal or moving the integral trip rod.
    - e. Provide electrical to switches as required for proper operation.
- M. Spare-Head Cabinet:
1. Metal cabinet with lock and continuous piano hinge door.
  2. Provide two (2) of each type head installed on project.
  3. Required tools for replacement.
  4. Mount at riser location.
- Q. Dry System:
1. Review, inspect, restore or modify as required to meet current codes.
  2. Basic Requirements:
    - a. Include all components as required to meet all requirements for a combined system per NFPA 13, Chapter 7.
    - b. Proper items and components as required to separate piping at riser to create a dry system header for a combined system distribution throughout.
    - c. Includes, but is not limited to, dry pipe valves, check valves, bypass valves, indicating valves, relief valves, pressure gauges, drains, tripping device, exhauster, air compression, piping, heads and connections.
    - d. Dry system riser to begin at dry pipe valve and make proper connection to the wet system riser piping and components.

- e. Provide a listed quick-opening device and all associated components, unless specifically not required.
  - f. Provide a listed anti-flooding device and all associated components, unless specifically not required, installed in the connection between the dry pipe sprinkler riser and the quick-opening device.
3. Air Pressure:
- a. Provide **NEW** air compressor specifically for the system, with all piping, connections and components as required.
  - b. Maintain the required air pressure on the system at all times, with a permanent connection to the dry pipe system from an air compressor.
  - c. Provide 1/2" minimum pipe connection from the air compressor to the dry system riser and enter the system above the priming water level of the dry pipe valve.
  - d. Install a check valve in the air line. Include a shut-off valve on the supply side of this check valve and shall remain closed unless filling the system.
  - e. Provide a relief valve between the air compressor and the controlling valve to be set to relieve the system as required.
  - f. Where an air line is taken from a larger system serving other uses, provide a regulator as required to maintain proper pressure on the dry pipe system. Provide a relief valve to be set to relieve the system as required. Provide backflow prevention device as required for coordination of line with other use lines.
- R. Emergency Access Knox-Box:
- 1. Provide as required by NFPA and state and local authorities.  
If not otherwise indicated, provide a single surface mount cabinet located as required by local authorities and as coordinated with the Architect.
  - 2. Surface Mount Cabinet:
    - a. "Knox Company"; Knox-Box 3200 Series.
    - b. 4"H x 5"W x 3-3/4"D, 1/4" thick plate steel housing, fully welded.
    - c. 1/2" thick plate steel door with interior gasket seal and stainless steel hinge.
    - d. Double-action rotating tumblers and hardened steel pins accessed by a biased cut key. Lock to have a 1/8" thick stainless steel dust cover with tamper seal mounting capability.
    - e. UL Listed box and lock.
    - f. Surface mounting with galvanized or stainless steel thru-bolts through wall per manufacturer's recommendations.
    - g. Color: Aluminum.

### PART 3 - EXECUTION

#### 3.01 INSTALLATION

- A. Review, inspect, restore or modify as required to meet current codes.
- B. Install complete per IBC Section 903 and NFPA 13.
- C. Furnish and install wet pipe automatic sprinklers system of first quality in every and all respects, together with the necessary pipe, fittings, hangers, and other apparatus necessary for a complete and finished installation, in conformance with present standards of NFPA and all state and local authorities.
- D. All sprinkler piping must be substantially supported from building structure and only approved type hangers used. Sprinkler lines under ducts shall not be supported from ductwork, but shall be supported from building structure with trapeze hangers where necessary.

- E. Coordinate work with work of other trades to avoid conflicts and interference and allow proper execution of all work. Do not damage or displace work of other trades.
- F. Contractor shall make no changes in installation from layout as shown on approved shop drawings unless such change is specifically approved by the Architect. Any changes made other than as above stated, are at the Contractor's own expense and responsibility.
- G. Provide flushing connections in cross mains as specified in the latest NFPA Standards, Pamphlet No. 13.
- H. Sprinkler heads shall be centered in all suspended acoustical ceiling panels.
- I. Replace acoustic ceiling panels damaged due to installation of sprinkler heads.
- J. Inspector's test connection, consisting of 1" piping, 1" globe valve, and 1/2" special discharge nozzle, shall be installed and connected to the systems at points as required by NFPA and all authorities having jurisdiction.
- K. Connect the sprinkler system to the fire alarm system per NFPA requirements. Sprinkler system shall be electronically supervised per IBC 903.4 and NFPA.

3.02 PHASING

- A. Charge system so as to place in service all areas of the fire sprinkler system required to provide protection to all areas and spaces as construction is completed and prior to Owner occupancy.
- B. Installation of system shall allow for expansion and phasing of project.
- C. Coordinate zoning of installation of system as required to avoid use of any shut-off valves within the system, other than at the main riser, to minimize the number of monitoring points in the system.
- D. It may be necessary, due to phasing, sequencing of construction, to avoid additional shut-off valves, requirements of the Fire Marshall, or any other reason, to drain and recharge the system after initial charging. This may need to be done multiple times during the construction process. This work shall be figured into the bid and accomplished by the Contractor at no additional costs.

3.03 ADJUSTING, TESTING AND CLEANING

- A. All sprinkler piping shall be tested for a period of two hours at a hydrostatic pressure of 200 lbs. and all piping, valves, heads, etc., shall be watertight.
- B. All piping shall be thoroughly flushed in accordance with the requirements of the latest NFPA Standards, Pamphlet No. 13, and flush test must be witnessed by proper authority.
- C. Architect's representative shall be notified in advance regarding time and date of all tests.
- D. During the installation and testing period of the sprinkler system, the Contractor shall be responsible for any damage to the work of others, to the building, its contents, etc., caused by leaks in any equipment by unplugged or disconnected pipes, fittings, etc., or by overflow and shall pay for necessary replacements or repairs to work by others, building, fixtures or merchandise damaged by such leakage.
- E. Clean all exposed piping, fittings, heads and other accessories.  
Polish all sprinkler heads in finished areas.

- F. Repair or replace damaged or marred items.
- G. Remove debris from work area.

SUBMITTAL CHECK LIST

1. Submissions for Approval.
2. Approvals from State Fire Protection Bureau, Local Fire Marshal, and local Fire Chief.
3. Shop Drawings.
4. Product Literature.
5. Calculations.

END OF SECTION 21 13 13

SECTION 22 05 00 - BASIC MECHANICAL REQUIREMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Basic Mechanical Requirements specifically applicable to Division 22 Sections.
- B. Refer to Division 1 and Conditions of the Contract for additional requirements that apply to work of Division 22.
- C. Coordination required for submittals of mechanical and equipment utility incentives and rebates.

1.02 REGULATORY REQUIREMENTS

- A. All work shall be executed and inspected in accordance with all local or state codes, laws, ordinances, rules and regulations applicable to the particular class of work.
- B. If the Contractor discovers the drawings or specifications are in conflict with the above mentioned laws, rules and regulations, he shall promptly notify the Architect in writing so any necessary changes can be accomplished. If the Contractor performs any work without notice as required above, he will bear the costs for corrective action.
- C. The Contractor is responsible for all applicable service charges, fees, permits royalties and the like.
- D. Mechanical work shall include complete, code-complying, fully operating and functional systems.

1.03 PROJECT/SITE CONDITIONS

- A. The drawings indicate required size and points of termination for pipes and ducts, and suggest proper routes of pipe to conform to structure, avoid obstructions and preserve clearances. However, it is not intended that these drawings indicate all necessary offsets and it is the Contractor's responsibility to install piping and ducts in such a manner required to conform to structure, avoid obstructions, preserve headroom and keep openings and passageways clear without further instruction from Architect/Engineer or cost to the Owner.
- B. Contractor is responsible for co-ordinating installation and providing offsets as required for a complete and finished installation. Do not make-up duct work or piping runs until all existing conditions have been examined, work of other trades coordinated and a field coordinated layout determined.  
**Notify Architect/Engineer of potential conflicts before making up ductwork or piping.**
- C. For purposes of clearness and legibility, drawings are essentially diagrammatic, and although size and location of equipment are drawn to scale wherever possible, the Contractor shall make use of all data in all of the contract documents and shall verify this information at building site.

1.04 CUTTING AND PATCHING

- A. Cut existing walls, floors, ceilings, roofs, etc. necessary for the proper installation of new materials, equipment and related mechanical items. Provide all necessary framing, lintels, hangers, etc. to maintain the structural integrity of the building system after cutting.
- B. Contractor is responsible for cost to restore or patch adjacent surfaces to original condition. Employ proper professional trade for patching and finishing exposed surfaces.



1.05 UTILITY INCENTIVES AND REBATES

- A. Coordinate materials to and through the Architect as required by utility companies for submission of incentives and rebates.
- B. **ALL REBATES SHALL BE PAYABLE TO THE OWNER, NOT THE CONTRACTOR**
- C. Provide all paperwork as requested by the Architect for this purpose on behalf of the Owner.
  - 1. Product submittals and cutsheets of all installed materials and items.
  - 2. Invoices including information such as; make/model, motor information, electrical information, SEER/EER ratings, quantities, unit prices, total costs, etc.
  - 3. Contractor shall sign all required forms as necessary for completion of the submission.
  - 4. Submittal will be coordinated through and submitted by the Architect on behalf of the Owner.
- D. Contractor may be required to coordinate timing for ordering of materials and products to correspond to time requirements by the utility granting incentive or rebate. Some products may require granting of the incentive and rebate prior to ordering of materials. This may result in ordering of materials in multiple packages and at differing times for multiple deliveries. Contractor is to coordinate these requirements as communicated by the Architect.

END OF SECTION 22 05 00

SECTION 22 05 53 - MECHANICAL IDENTIFICATION

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment, special tools, supervision and services required to mark and identify all piping, valves, controls, ductwork, etc. throughout the project.

1.02 REFERENCES

- A. ANSI A13.1 - "Scheme for the Identification of Piping Systems".

PART 2 - PRODUCTS

- 2.01 All main elements of mechanical equipment shall be identified with signs made of laminated plastic with 1/8 inch or larger engraved letters. Signs shall be securely attached by rustproof screws or some other permanent means. Information on sign shall include name of equipment, rating, maintenance instructions, and any other important data.
- 2.02 All non-insulated piping shall be painted continuously in Mechanical Rooms where exposed, and elsewhere throughout project where exposed to view.
- 2.03 All exposed and accessible piping (above removable ceilings, etc) above 1-1/4 inch in diameter shall be identified as to function, zone, and direction of flow by means of an all-temperature adhesive backed vinyl tape. Tape for piping 3 inches and larger shall be 2-1/4 inch high with 2 inch high legend. Tape for smaller than 3 inches shall be 1-1/8 high with 3/4 inch legend. Background colors of tape shall conform to ANSI Standard A-13.1. Piping shall be identified at permanent locations, but in no case at intervals greater than 15 feet.
- 2.04 All valves shall be identified with brass tags of .051 inch thickness, 1 inch by 3 inches or larger, with 1/8 inch high stamped letters. The tag shall be attached to valves with rustproof stainless steel key chains. Valve tags shall have wording such as "Heating Water Supply" so show the function of the valve.
- 2.05 Ductwork shall be identified at or near the fan with stenciled signs or by engraved laminated plastic signs secured by rustproof screws. Sign shall show area served.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Complete all piping insulation and painting prior to application of tags and labels.

3.02 COLOR CODING

A. Pipe identification tape shall be as noted below:

COLOR CODING

<u>PIPING TYPE</u>	<u>LABEL COLOR</u>	<u>LEGEND TEXT</u>	<u>TEXT COLOR</u>
Domestic Cold Water	Green	"Cold Water"	Black
Domestic Hot Water	Yellow	"Dom. Hot Water"	Black
Domestic Hot Water Return	Yellow	"Dom. Hot Water Return"	Black
Fire Protection Water	Red	"Fire Prot. Water"	Black
Sanitary Drainage	Green	"Sanitary Sewer"	Black
Condensate Drainage	Green	"Condensate Drainage"	Black
Natural Gas	Yellow	"Natural Gas"	Black

END OF SECTION 22 05 53

SECTION 22 07 00 - PIPING INSULATION

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Piping Insulation.
- B. Jackets and Accessories.

1.02 REFERENCES

- A. ANSI/ASTM C195 - Mineral Fiber Thermal Insulation Cement.
- B. ANSI/ASTM C547 - Mineral Fiber Performed Pipe Insulation.
- C. ANSI/ASTM C552 - Cellular Glass Block and Pipe Thermal Insulation.
- D. ASTM B209 - Aluminum and Aluminum-Alloy Sheet and Plate.
- E. ASTM C449 - Mineral Fiber Hydraulic - setting Thermal Insulating and Finishing Cement.
- F. ASTM E84 - Surface Burning Characteristics of Building Materials.

1.03 QUALITY ASSURANCE

- A. Applicator:  
Company specializing in piping insulation application with three years minimum experience.
- B. Materials:  
Flame spread/fuel contributed/smoke developed rating of 25/50/50 in accordance with ASTM E84.

1.04 SUBMITTALS

- A. Submit product data including thermal conductivity and standards compliance.
- B. Include product description, list of materials and thickness for each service, and locations.
- C. Submit manufacturer's installation instructions.

PART 2 - PRODUCTS

2.01 INSULATION

- A. Provide products, as approved by the Architect, from one of the following acceptable manufacturers:
  - 1. Knauf
  - 2. Certainteed
  - 3. Pittsburg Corning
  - 4. Manville
  - 5. Owens/Corning
- B. Type A:
  - 1. Glass Fiber Insulation.
  - 2. ANSI/ASTM C547; "K" value of 0.24 at 75°F; noncombustible.
  - 3. Fittings insulation shall be 25/50 pre-fittings with fiberglass inserts.

2.02 JACKETS

- A. Interior Applications:
  - 1. Vapor Barrier Jackets: Kraft reinforced foil vapor barrier with self-sealing adhesive joints.
- B. Exterior Applications:
  - 1. Aluminum Jackets: ASTM B209; 0.020 inch thick; smooth finish.

2.03 ACCESSORIES

- A. Insulation Bands: 3/4 inch wide; 0.015 inch thick galvanized steel.
- B. Metal Jacket Bands: 3/8 inch wide; 0.38 thick aluminum.
- C. Insulating Cement: ANSI/ASTM C195; hydraulic setting mineral wool.
- D. Finishing Cement: ASTM C449.
- E. Fibrous Glass Cloth: Untreated; 9 oz/sq yd weight.
- F. Adhesives: Compatible with insulation.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Install materials after piping has been tested and approved.

3.02 INSTALLATION

- A. Install materials in accordance with manufacturer's instructions.
- B. Continue insulation with vapor barrier through penetrations.
- C. In exposed piping, locate insulation and cover seams in least visible locations.
- D. On insulated piping with vapor barrier, insulate fittings, valves, unions, flanges, strainers, flexible connections, and expansion joints.
- E. On insulated piping without vapor barrier and piping conveying fluids 140°F or less, do not insulate flanges and unions at equipment, but bevel and seal ends of insulation at such locations.
- F. Provide an insert, not less than 6 inch long, of same thickness and contour as adjoining insulation, between support shield and piping, but under the finish jacket, on piping 2 inch diameter or larger, to prevent insulation from sagging at support points. Inserts shall be cork or other heavy density insulating material suitable for the planned temperature range. Factory fabrication inserts may be used.
- G. Neatly finish insulation at supports, protrusions, and interruptions.
- H. Jackets:
  - 1. Indoor, Concealed Applications: Insulated pipes conveying fluids above ambient temperature shall have standard jackets, with or without vapor barrier, factory-applied or field applied. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe, and finish with glass cloth and adhesive. PVC jackets may be used.

2. Indoor, concealed Applications: Insulated dual-temperature pipes of pipes conveying fluids below ambient temperature shall have vapor barrier jackets, factory-applied or field-applied. Insulate fittings, joints, and valves with molded insulation of like material and thickness as adjacent pipe, and finish with glass cloth and vapor barrier adhesive.
3. Indoor, Exposed Applications: For pipe exposed in mechanical equipment rooms or in finished spaces, insulate as for concealed applications. Finish with rigid PVC jackets.
4. Exterior Applications: Provide vapor barrier jackets. Cover with aluminum jacket with seams located on bottom side of horizontal piping. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe, and finish with glass mesh reinforced vapor barrier cement.

3.03 SCHEDULE

<u>PIPING</u>	<u>TYPE</u>	<u>PIPE SIZE</u>	<u>THICKNESS*</u>
Domestic Hot Water	A	2 inches	1/2 inch
		≥2 inches	1 inch
Domestic Cold Water	A	<2 inches	1/2 inch
		≥2 inches	1 inch
Refrigerant Suction	A	≤2 inches	1-1/2 inches
Condensate Drain	A	all sizes	1 inch

\*All insulation in mechanical rooms shall be increased 1/2 inches in thickness.

END OF SECTION 22 07 00

SECTION 22 10 00 - PLUMBING PIPING INSIDE BUILDING

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment, special tools, supervision and services required to complete the following work indicated, noted and detailed on drawings and specified herein:
  - 1. Pipe and pipe fittings.
  - 2. Valves.
  - 3. Sanitary sewer drain, waste and vent piping system.
  - 4. Domestic water piping system.
  - 5. Condensate piping system.

1.02 REFERENCES

- A. ASTM B88 - Seamless Copper Water Tube.
- B. ASTM B306 - Copper Drainage Tube (DWV).
- C. ASTM D1785 - PVC Plastic Pipe, schedule 40, 80 and 120.
- D. ASTM D2665 - PVC Plastic Drain, Waste and Vent Pipe and Fittings.
- E. ASTM F876/F877 – Crosslinked Polyethylene (PEX) Tubing.

1.03 QUALITY ASSURANCE

- A. Valves: Manufacturer's name and pressure rating marked on valve body.

1.04 SUBMITTALS

- A. Submit product data.
- B. Include data on pipe materials, pipe fittings, valves and accessories.

PART 2 - PRODUCTS

2.01 SANITARY SEWER DRAIN, WASTE AND VENT PIPING

- A. PVC Schedule 40.
- B. Fittings: PVC Schedule 40, designed for solvent welded connections.

2.03 DOMESTIC WATER PIPING

- A. Above Grade:
  - 1. Type "L" hard temper copper tubing.
    - a. Wrought copper solder fittings or mechanically formed Tee connections above grade for pipe sizes up to and including 4".
    - b. Solder with Sil-Fos or approved equal.
    - c. Victaulic grooved copper connection may be used for pipe sizes 2" through 6".

2. PEX Piping:
  - a. “Zurn” ZurnPEX® Non-Barrier Tubing or equal.
  - b. Conform to SDR-9 dimensional standards.
  - c. Maximum working pressures:
    1. 160psi @ 73°F
    2. 100psi @ 180°F
    3. 80psi @ 200°F
  - d. Pipe is to comply with all requirements of the Current Plumbing Code.
  - e. Fittings to be compatible with piping and appropriate for installation conditions.
- B. Below Grade:
  1. Type “K” hard temper copper tubing.
    - a. Wrought copper solder fittings below grade inside and outside building for pipe sizes up to 3”.
  2. PEX Piping:
    - a. “Zurn” ZurnPEX® Non-Barrier Tubing or equal.
    - b. Conform to SDR-9 dimensional standards.
    - c. Maximum working pressures:
      1. 160psi @ 73°F
      2. 100psi @ 180°F
      3. 80psi @ 200°F
    - d. Pipe is to comply with all requirements of the Current Plumbing Code.
    - e. Provide PVC sleeve for pipe burial.
    - f. Provide tracer or locating wiring as required for future locates.
    - g. Fittings to be compatible with piping and appropriate for installation conditions.
- C. Valves:
  1. Shut-off service shall be gate or ball type.
  2. Flow check service shall be swing check type.
  3. Pressure Rating: 160 psi minimum.
- D. Water Hammer Arresters:
  1. “Zurn”, Z-1700 Shoktrol.
    - a. Size 100: 1-11 Fixture Units.
    - b. Size 200: 12-32 Fixture Units.
    - c. Size 300: 33-60 Fixture Units.
    - d. Size 400: 61-113 Fixture Units.
    - e. Size 500: 114-154 Fixture Units.

2.04 CONDENSATE PIPING

- A. PVC Schedule 40.
- B. Fittings: PVC Schedule 40, designed for solvent welded connections.
- C. Use Type “L” hard temper copper tubing with wrought copper solder fittings or mechanically formed Tee connections if within a plenum space, where PVC is not allowed for installation, or where otherwise indicated.



2.05 HOSE BIBBS

- A. Hose Bibb:
  - 1. Non-Freeze areas.
  - 2. Type as indicated or scheduled on drawings.  
If not indicated, provide "Woodford", Model 24P.
  - 3. Loose tee key or wheel handle as indicated or scheduled on drawings.  
If not indicated, provide loose tee key.
  - 4. Brass.
  
- B. Chrome Hose Bibb:
  - 1. Non-Freeze areas.
  - 2. Type as indicated or scheduled on drawings.  
If not indicated, provide "Woodford", Model 24P.
  - 3. Loose tee key or wheel handle as indicated or scheduled on drawings.  
If not indicated, provide loose tee key.
  - 4. Chrome.
  
- C. Wheel Handles (where scheduled or indicated to be provided):
  - 1. Provide polycarbonate wheel handles in interior areas, unless otherwise indicated.
  - 2. Provide metal wheel handles in exterior areas, unless otherwise indicated.
  - 3. Provide metal wheel handles in interior areas of manufacturing or in applications where polycarbonate may be damaged or abused, unless otherwise indicated.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Provide non-conducting dielectric connections wherever jointing dissimilar metals.
  
- B. Route piping in orderly manner and maintain gradient.
  
- C. Install piping to conserve building space and not interfere with use of space.
  
- D. Group piping whenever practical at common elevations.
  
- E. Install piping to allow for expansion and contraction without stressing pipe, joints or connected equipment.
  
- F. Provide clearance for installation of insulation and access to valves and fittings.
  
- G. Slope water piping and arrange to drain at low points.
  
- H. Prepare pipe, fittings, supports and accessories not prefinished, ready for finish painting. Refer to Section 09 90 00.
  
- I. Establish invert elevations, slopes for drainage 1/8 inch per foot.
  
- J. Install valves with stems upright or horizontal, not inverted.
  
- K. No double-wye fittings will be permitted. Where the fixture/branch sanitary piping connects to the sanitary main, single wye fittings are to be used.
  
- L. Short 1/4 turn radius on sanitary piping elbows is prohibited.

- M. Where sanitary piping makes a change in direction, two 45-degree fittings or a “medium sweep” shall be used.

3.02 APPLICATION

- A. Install unions downstream of valves and at equipment or apparatus connections.
- B. Install brass male adapters each side of valves in copper piped system. Sweat solder adapters to pipe.
- C. Install ball valves for shut-off and to isolate equipment, part of systems, or vertical risers. Install at all plumbing fixture drops, or group of fixtures drop, above ceiling and with water hammer arrestors at the high point.
- D. Install water hammer arrestors as follows:
  - a. Install in an upright position.
  - b. Located at the remote end of a long run of piping and as close to the point of valve closure as possible, unless otherwise indicated.
  - c. Multiple fixtures, branch line less than 20':  
Measured from the start of the horizontal branch line to the last fixture supply on the line.  
Locate at the end of the branch line between the last two fixtures served.
  - d. Multiple fixtures, branch line more than 20':  
Measured from the start of the horizontal branch line to the last fixture supply on the line.  
Use two units whose capacities total the requirements of the branch. Locate one unit between the last and next to last fixture and the other unit approximately midway between the fixtures.

3.03 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

- A. Prior to starting work, verify system is complete, flushed and clean.
- B. Sterilization shall be performed in accordance with State Board of Health Rules and Regulations.
- C. Provide Certification from Board of Health after sterilization.

3.04 SERVICE CONNECTIONS

- A. Provide connections to existing sanitary sewer services. Before commencing work check tap locations, invert elevations required for sewer connections, confirm inverts and ensure that these can be properly connected with slope for drainage.

SUBMITTAL CHECK LIST

- 1. Product Literature

END OF SECTION 22 10 00

SECTION 22 11 23 – DOMESTIC WATER PUMPS

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment, special tools, supervision, and services required to complete the following work and installation indicated, noted, detailed and scheduled on the drawings and specified herein as follows:
1. In-line pumps.
  2. Vibration Isolators.

1.02 SUBMITTALS

- A. Submittals shall include construction materials for impeller, shaft, shaft sleeve, volute, and seal assembly. Include pressure and temperature operating specifications. Submit dimensions including discharge and suction sizes. Submit motor type, voltage, efficiency and manufacturer.
- B. Submit certified pump curves showing pump performance characteristics with pump efficiency and system operating point plotted. Include NPSH curve when applicable.
- C. Submit manufacturer=s specifications, detailed drawings, performance characteristics data and installation instructions for vibration isolators.

PART 2 - PRODUCTS

2.01 IN-LINE PUMPS

- A. Acceptable Manufacturers
1. Bell & Gossett
  2. Taco
  3. Aurora
- B. Type: Pump shall be in-line type for installation in vertical or horizontal piping. Pump must be capable of being serviced without disturbing piping connections.
- C. Pump Body: Body shall be of Class 30 cast iron, rated 175 psi working pressure, with gauge ports at nozzles and with vent and drain ports.
- D. Impeller: Non-ferrous material, enclosed type, dynamically balanced, keyed to the shaft and secured by a locking capscrew or nut.
- E. Seal: Mechanical seal with ceramic seat, and carbon seal ring.
- F. Bearings: Oil lubricated bronze journal and thrust bearings.
- G. Factory tested: Pump shall be factory tested, thoroughly cleaned, and painted with machinery enamel prior to shipment.

2.02 VIBRATION ISOLATORS

- A. Acceptable Manufacturer's:
1. Peabody Noise Control, Inc.
  2. Vibration Mountings and Controls, Inc.
  3. Mason Industries, Inc.

- B. Spring & neoprene Isolation hangers:
  - 1. Isolation hangers shall be selected for each specific application.
  - 2. Minimum lateral stiffness of 1.0 times the rated vertical stiffness
  
- C. Flexible Pipe Connector:
  - 1. For non-ferrous piping, provide bronze hose covered with bronze wire braid with bronze flanged ends, braze-welded to hose.
  - 2. For ferrous piping, provide stainless steel hose covered with stainless steel wire braid with 150 psi ANSI flanges, welded to hose.

PART 3 - EXECUTION

- 3.01 Install in accordance with manufacturers printed instructions.
- 3.02 Install gauges at pump suction and discharge connection.
- 3.03 Install vibration isolators in compliance with manufacturer's instructions.

END OF SECTION 22 11 23

SECTION 22 14 00 - PLUMBING SPECIALTIES

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment, special tools, supervision and services required to complete the following work indicated, noted and detailed on drawings and specified herein:
1. Floor Drains.
  2. Trap Primers.
  3. Cleanouts.

1.02 REFERENCES

- A. ANSI A112.21.1 - Floor Drains.

1.03 QUALITY ASSURANCE

- A. Manufacturer: For each product specified, provide components by same manufacturer throughout.

1.04 SUBMITTALS

- A. Submit shop drawings and product data.
- B. Include component sizes, rough-in requirements, service sizes and finishes.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Provide products, as approved by the Architect, from one of the following acceptable manufacturers:
1. "Zurn".
  2. "Wade".
  3. "Josam".
  4. "J.R. Smith".

2.02 FLOOR DRAINS

- A. Floor Drain:
1. Type as indicated or scheduled on drawings. If not indicated, provide the following items.
  2. "Zurn", Model ZN-415-O, where integral cleanout is not required by code.
  3. "Zurn", Model ZN-456-B, where integral cleanout is required by code.
  4. Polished nickel bronze top.
  5. Provide trap where required by code.
- B. Floor Drain (for use with trap primer):
1. Type as indicated or scheduled on drawings. If not indicated, provide the following items.
  2. "Zurn", Model ZN-415-B-P-V.
  3. Polished nickel bronze top.
  4. Trap primer connection.
  5. Adjustable to finished surface after concrete has set.

2.03 TRAP PRIMERS

- A. Trap Primer:
1. Type as indicated or scheduled on drawings. If not indicated, provide the following items.
  2. "Zurn", Model Z-1022.
  3. Single unit may serve up to 4 floor drains.
  4. Provide outlet distribution as required for drains and orientation served.

2.04 CLEANOUTS

- A. Clean Out:
1. Type as indicated or scheduled on drawings. If not indicated, provide the following items. Cleanout shall be designed for use within the flooring material installed. Carpet locator markers are to be used in carpeted areas.
  2. "Zurn", Model ZN-1400-SG (outside building in concrete).
  3. "Zurn", Model ZN-1400-T (exposed concrete areas).
  4. "Zurn", Model ZN-1400-CF (carpet areas).
  5. "Zurn", Model ZN-1400-TX (resilient tile areas).
  6. "Zurn", Model ZN-1400-T (tile areas).
  7. "Zurn", Model ZN-1400-Z (terrazzo areas).
  8. Cast iron cleanout.
  9. Polished nickel bronze top.
  10. Adjustable to finished surface after concrete has set.
  11. Size to match piping it serves, full length to outlet.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Coordinate core drilling of floor construction to receive drains to required invert elevations.

3.02 INSTALLATION AND APPLICATION

- A. Install specialties in accordance with manufacturer's instructions to permit intended performance.
- B. Extend cleanouts to wall surface. Lubricate threaded cleanout plugs with mixture of graphite and linseed oil. Ensure clearance at cleanout for rodding of drainage system.
- C. Install first hanger support at the elbow connection to the horizontal pipe directly below the drain.

END OF SECTION 22 14 00

SECTION 22 40 00 - PLUMBING FIXTURES

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment, special tools, supervision and services required to complete the following work indicated, noted and detailed on drawings and specified herein:
1. Water Closets and Urinals.
  2. Lavatories.
  3. Flush Valves.
  4. Stainless Steel Sinks.
  5. Faucets.
  6. Electric Water Coolers.
  7. Mop Sinks and Service Sinks.
  8. Water Heaters.

1.02 REFERENCES

- A. ANSI A112.6.1 - Supports for Off-the-Floor Plumbing Fixtures for Public Use.
- B. ANSI A112.18.1 - Finished and Rough Brass Plumbing Fixture Fittings.
- C. ANSI A112.19.1 - Enameled Cast Iron Plumbing Fixtures.
- D. ANSI A112.19.2 - Vitreous China Plumbing Fixtures
- E. ANSI A112.19.5 - Trim for Water-Closet Bowls.

1.03 QUALITY ASSURANCE

- A. Fixtures: By same manufacturer for each product specified throughout.
- B. Trim: By same manufacturer for each product specified throughout.

1.04 SUBMITTALS

- A. Submit product data.
- B. Include fixtures, sizes, rough-in dimensions, utility sizes, trim and finishes.

1.05 OPERATIONAL AND MAINTENANCE DATA

- A. Submit operation and maintenance data.
- B. Include fixture trim exploded view and replacement parts lists.

1.06 WARRANTY

- A. Provide one year manufacturer's warranty.

PART 2 - PRODUCTS

2.01 PLUMBING FIXTURES

- A. Manufacturer's model numbers are shown on plans to establish a standard of quality only. Other acceptable manufacturer's fixtures may be substituted, as approved by the Architect.
- B. See Section 01630 - Product Options and Substitutions for all requirements.

2.02 ACCEPTABLE MANUFACTURERS

- A. Water Closets and Urinals:
  - 1. "American Standard"
  - 2. "Kohler"
  - 3. "Crane"
  - 4. "Eljer"
  - 5. "Zurn"
  - 6. "Toto"
  
- B. Lavatories:
  - 1. "American Standard"
  - 2. "Kohler"
  - 3. "Crane"
  - 4. "Eljer"
  - 5. "Zurn"
  
- C. Flush Valves:
  - 1. "Sloan"
  - 2. "Zurn"
  - 3. "Toto"
  - 4. "American Standard"
  
- D. Stainless Steel Sinks:
  - 1. "Just"
  - 2. "Elkay"
  - 3. "Kindred"
  
- E. Faucets:
  - 1. "Delta"
  - 2. "American Standard"
  - 3. "Kohler"
  - 4. "Zurn"
  - 5. "Chicago Faucet"
  - 6. "T&S Brass"
  
- F. Mop Sinks and Service Sinks:
  - 1. "Mustee"
  - 2. "Florestone"
  
- G. Water Heaters:
  - 1. "Lochinvar"
  - 2. "Rudd"
  - 3. "State"
  - 4. "Bradford White"
  - 5. "AO Smith"

PART 3 - EXECUTION

3.01 INSPECTION

- A. Review millwork shop drawings. Confirm location and size of fixtures and openings before rough-in and installation.



- B. Verify adjacent construction is ready to receive rough-in work of this Section.

3.02 INSTALLATION

- A. Install each fixture with trap, easily removable for servicing and cleaning.
- B. Provide chrome plated rigid supplies to fixtures with screwdriver stops, reducers, and escutcheons.
- C. Install components level and plumb.
- D. Install and secure fixtures in place with wall carriers and bolts.
- E. Seal fixtures to wall and floor surfaces with sealant, color to match fixture.
- F. See drawings for height and location of all fixtures.

3.03 ADJUSTING AND CLEANING

- A. Adjust stops or valves for intended water flow rate to fixtures without splashing, noise or overflow.
- B. At completion clean plumbing fixtures and equipment.
- C. Solidly attach water closets to floor with lag screws.  
Lead flashing is not intended to hold fixture in place.

SUBMITTAL CHECK LIST

- 1. Product Literature

END OF SECTION 22 40 00

SECTION 23 05 00 - BASIC MECHANICAL REQUIREMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Basic Mechanical Requirements specifically applicable to Division 15 Sections.
- B. Refer to Division 1 and Conditions of the Contract for additional requirements that apply to work of Division 15.
- C. Coordination required for submittals of mechanical and equipment utility incentives and rebates.

1.02 REGULATORY REQUIREMENTS

- A. All work shall be executed and inspected in accordance with all local or state codes, laws, ordinances, rules and regulations applicable to the particular class of work.
- B. If the Contractor discovers the drawings or specifications are in conflict with the above mentioned laws, rules and regulations, he shall promptly notify the Architect in writing so any necessary changes can be accomplished. If the Contractor performs any work without notice as required above, he will bear the costs for corrective action.
- C. The Contractor is responsible for all applicable service charges, fees, permits royalties and the like.
- D. Mechanical work shall include complete, code-complying, fully operating and functional systems.

1.03 PROJECT/SITE CONDITIONS

- A. The drawings indicate required size and points of termination for pipes and ducts, and suggest proper routes of pipe to conform to structure, avoid obstructions and preserve clearances. However, it is not intended that these drawings indicate all necessary offsets and it is the Contractor's responsibility to install piping and ducts in such a manner required to conform to structure, avoid obstructions, preserve headroom and keep openings and passageways clear without further instruction from Architect/Engineer or cost to the Owner.
- B. Contractor is responsible for co-ordinating installation and providing offsets as required for a complete and finished installation. Do not make-up duct work or piping runs until all existing conditions have been examined, work of other trades coordinated and a field coordinated layout determined.  
**Notify Architect/Engineer of potential conflicts before making up ductwork or piping.**
- C. For purposes of clearness and legibility, drawings are essentially diagrammatic, and although size and location of equipment are drawn to scale wherever possible, the Contractor shall make use of all data in all of the contract documents and shall verify this information at building site.

1.04 CUTTING AND PATCHING

- A. Cut existing walls, floors, ceilings, roofs, etc. necessary for the proper installation of new materials, equipment and related mechanical items. Provide all necessary framing, lintels, hangers, etc. to maintain the structural integrity of the building system after cutting.
- B. Contractor is responsible for cost to restore or patch adjacent surfaces to original condition. Employ proper professional trade for patching and finishing exposed surfaces.

1.05 UTILITY INCENTIVES AND REBATES

- A. Coordinate materials to and through the Architect as required by utility companies for submission of incentives and rebates.
- B. Provide all paperwork as requested by the Architect for this purpose on behalf of the Owner.
  - 1. Product submittals and cutsheets of all installed materials and items.
  - 2. Invoices including information such as; make/model, motor information, electrical information, SEER/EER ratings, quantities, unit prices, total costs, etc.
  - 3. Contractor shall sign all required forms as necessary for completion of the submission.
  - 4. Submittal will be coordinated through and submitted by the Architect on behalf of the Owner.
- C. Contractor may be required to coordinate timing for ordering of materials and products to correspond to time requirements by the utility granting incentive or rebate. Some products may require granting of the incentive and rebate prior to ordering of materials. This may result in ordering of materials in multiple packages and at differing times for multiple deliveries. Contractor is to coordinate these requirements as communicated by the Architect.
- D. **PAYMENT OF ALL INCENTIVES AND REBATES WILL BE MADE TO THE OWNER, NOT THE CONTRACTOR.**

END OF SECTION 23 05 00

SECTION 23 05 53 - MECHANICAL IDENTIFICATION

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment, special tools, supervision and services required to mark and identify all piping, valves, controls, ductwork, etc. throughout the project.

1.02 REFERENCES

- A. ANSI A13.1 - "Scheme for the Identification of Piping Systems".

PART 2 - PRODUCTS

- 2.01 All main elements of mechanical equipment shall be identified with signs made of laminated plastic with 1/8 inch or larger engraved letters. Signs shall be securely attached by rustproof screws or some other permanent means. Information on sign shall include name of equipment, rating, maintenance instructions, and any other important data.
- 2.02 All non-insulated piping shall be painted continuously in Mechanical Rooms where exposed, and elsewhere throughout project where exposed to view.
- 2.03 All exposed and accessible piping (above removable ceilings, etc) above 1-1/4 inch in diameter shall be identified as to function, zone, and direction of flow by means of an all-temperature adhesive backed vinyl tape. Tape for piping 3 inches and larger shall be 2-1/4 inch high with 2 inch high legend. Tape for smaller than 3 inches shall be 1-1/8 high with 3/4 inch legend. Background colors of tape shall conform to ANSI Standard A-13.1. Piping shall be identified at permanent locations, but in no case at intervals greater than 15 feet.
- 2.04 All valves shall be identified with brass tags of .051 inch thickness, 1 inch by 3 inches or larger, with 1/8 inch high stamped letters. The tag shall be attached to valves with rustproof stainless steel key chains. Valve tags shall have wording such as "Heating Water Supply" so show the function of the valve.
- 2.05 Ductwork shall be identified at or near the fan with stenciled signs or by engraved laminated plastic signs secured by rustproof screws. Sign shall show area served.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Complete all piping insulation and painting prior to application of tags and labels.

3.02 COLOR CODING

A. Pipe identification tape shall be as noted below:

COLOR CODING

<u>PIPING TYPE</u>	<u>LABEL COLOR</u>	<u>LEGEND TEXT</u>	<u>TEXT COLOR</u>
Domestic Cold Water	Green	"Cold Water"	Black
Domestic Hot Water	Yellow	"Dom. Hot Water"	Black
Domestic Hot Water Return	Yellow	"Dom. Hot Water Return"	Black
Fire Protection Water	Red	"Fire Prot. Water"	Black
Sanitary Drainage	Green	"Sanitary Sewer"	Black
Condensate Drainage	Green	"Condensate Drainage"	Black
Natural Gas	Yellow	"Natural Gas"	Black

END OF SECTION 23 05 53

SECTION 23 05 93 - TESTING, ADJUSTING AND BALANCING

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment, special tools, supervision and services required to complete all testing, adjusting and balancing of supply, return and exhaust air system.

1.02 REFERENCES

- A. AABC - Associated Air Balance Council.
- B. NEBB - National Environmental Balancing Bureau.

1.03 QUALITY ASSURANCE

- A. Testing, Adjusting and Balancing: Follow methodology and procedures of AABC or NEBB.
- B. Report: Record and Format data in conformance with guidelines of AABC or NEBB.

1.04 SUBMITTALS

- A. Submit test reports including identification and types of instruments used.

PART 2 - PRODUCTS

2.01 PROVIDERS

- A. Services shall be provided by one of the following acceptable providers:
  - 1. Fulton Air Balance.
  - 2. Midwest Balance and Service, Inc.
  - 3. Thermal Balance, Inc.
  - 4. Total Balance, Inc.

PART 3 - EXECUTION

3.01 AIR SYSTEM PROCEDURES

- A. Adjust all furnaces and exhaust fans to provide the required design air quantity to or through, each component, including supply air, return air, ventilation air and exhaust air with minimum fan energy requirements.
- B. Use volume dampers at branch runout connections to mains to adjust flows. Avoid using volume dampers at diffuser or register.
- C. Make final measurements of air quantity after the air terminal has been adjusted for optimum flow.

3.02 AIR SYSTEM DATA

- A. Report shall include for each fan:
  - 1. Manufacturer and model.
  - 2. Size.
  - 3. Motor HP, voltage, phase, cycles and full load amps.
  - 4. Location and local identification data.
  - 5. Measured CFM.
  - 6. Measured inlet and outlet static pressures.

7. Measured RPM.
8. Motor operating BHP.
9. Motor operating K W.

B. Report shall include for each diffuser, grille and register:

1. Size, type and manufacturer.
2. Location and area on drawing.
3. Design CFM.
4. Final measured CFM.

END OF SECTION 23 05 93

SECTION 23 07 13 - DUCTWORK INSULATION

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment, special tools, supervision and services required to complete the following work indicated, noted and detailed on drawings and specified herein:
  - 1. Ductwork Insulation.
  - 2. Insulation Jackets.

1.02 REFERENCES

- A. ANSI/ASTM C553 - Mineral Fiber Blanket and Felt Insulation.
- B. ANSI/ASTM C612 - Mineral Fiber Block and Board Thermal Insulation.
- C. ASTM E84 - Surface Burning Characteristics of Building Materials.
- D. NFPA 255 - Surface Burning Characteristics of Building Materials
- E. UL 723 - Surface Burning Characteristics of Building Materials.

1.03 QUALITY ASSURANCE

- A. Applicator: Company specializing in ductwork insulation application and can demonstrate sufficient experience and ability to execute this project.
- B. Materials: UL listed; flame spread/fuel contributed/smoke developed rating of 25/50/50 in accordance with ASTM E84.

1.04 SUBMITTALS

- A. Include product description, list of materials and thickness for each service and location.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

- A. Insulation
  - 1. Manville
  - 2. Knauf
  - 3. Certainteed

2.02 MATERIALS

- A. Type A:
  - 1. Flexible Glass Fiber, External Insulation.
  - 2. ANSI/ASTM C612; commercial grade; "K" value of 0.29 at 75°F.
  - 3. Foil scrim facing for air conditioning ducts.
  - 4. 1.5 lb/cu. ft. density.
- B. Type B:
  - 1. Rigid Glass Fiber, External Insulation.
  - 2. ANSI/ASTM C612, Class 1; "K" value of 0.24 at 75°F.
  - 3. Foil scrim facing for air conditioning ducts.
  - 4. 3.0 lb/cu. ft. density.



- C. Type C:
  - 1. Flexible Glass Fiber, Internal Liner Insulation.
  - 2. ANSI/ASTM C553; "K" value of 0.24 at 75°F.
  - 3. 1.5 lb/cu. ft. density, coated air side for maximum 4,000 ft/min air velocity.
- D. Adhesives: Waterproof fire retardant type.
- E. Indoor Jacket: Pre-sized glass cloth, minimum 7.8 oz/sq yd.
- F. Outdoor Jacket: Coated glass fiber sheet, 30 lb/sq yd.
- G. Lagging Adhesive: Fire resistive to ASTM E84.
- H. Impale Anchors: Galvanized steel, 12 gauge self-adhesive pad.
- I. Joint Tape: Foil scrim facing.
- J. Tie Wire: Annealed steel, 16 gauge.

### PART 3 - EXECUTION

#### 3.01 PREPARATION

- A. Install materials after ductwork has been tested and approved.
- B. Clean surfaces for adhesives.

#### 3.02 INSTALLATION

- A. Install materials in accordance with manufacturer's instructions.
- B. Provide insulation with vapor barrier when air conveyed may be below ambient temperature.
- C. External Insulation (Type A or Type B) Application:
  - 1. Secure insulation with vapor barrier with wires and seal jacket joints with vapor barrier adhesives or tape to match jacket.
  - 2. Secure insulation without vapor barrier with staples, tape or wires.
  - 3. Install without sag on underside of ductwork. Use adhesive or mechanical fasteners where necessary to prevent sagging. Seal vapor barrier penetrations by mechanical fasteners with vapor barrier adhesive. Stop and point insulation around access and damper operations to allow operation without disturbing wrapping.
- D. Internal Insulation Liner (Type C) Application:
  - 1. Adhere insulation with adhesive for 100 percent coverage. Secure insulation with mechanical fasteners on 15 inch centers maximum on top and side of ductwork with dimension exceeding 20 inches. Seal and smooth joints. Do not use nail-type fasteners. Seal vapor barrier penetrations made by mechanical fasteners with vapor barrier adhesive.
  - 2. Ductwork dimensions indicated are net inside dimensions required for air flow. Increase ductwork to allow for insulation thickness.
- E. Walk-in Plenum Application:
  - 1. Adhere insulation on interior surface of plenum with adhesive for 100 percent coverage.

Secure insulation with mechanical fasteners. Seal and smooth joints. Do not use nail-type fasteners.

F. Continue insulation with vapor barrier through penetrations.

3.03 SCHEDULE

<u>DUCTWORK TYPE</u>	<u>INSULATION TYPE</u>	<u>INSULATION THICKNESS</u>
Supply Ducts		
(in conditioned space, in exposed locations)	B	2 inches
(in conditioned space, in concealed locations)	A	1-1/2 inches
Return and Relief Ducts		
(in conditioned space, in exposed locations)	B	2 inches
(in conditioned space, in concealed locations)	A	1-1/2 inches
(exposed to outdoor temperatures, exposed locations)	B	1-1/2 inches
(exposed to outdoor temperatures, concealed locations)	A	1-1/2 inches
Internal Duct Lining		
(for insulation)	C	1 inch
(for acoustics only)	C	1/2 inch
Exhaust Ducts		
(within 10 feet of exterior openings, exposed locations)	B	1/2 inch
(within 10 feet of exterior openings, concealed locations)	A	1/2 inch
(exposed to outdoor temperatures, exposed locations)	B	1/2 inch
(exposed to outdoor temperatures, concealed locations)	A	1/2 inch
(in conditioned space, in exposed locations)	B	1/2 inch
(in conditioned space, in concealed locations)	A	1/2 inch
Outside Air Intake Ducts		
(in exposed locations)	B	2 inches
(in concealed locations)	A	1-1/2 inches
Combustion Air Ducts	A	1-1/2 inches
Tops of Plenums	A	1-1/2 inches
Tops of Diffusers	A	1-1/2 inches

SUBMITTAL CHECK LIST

1. Product Literature.

END OF SECTION 23 07 13

SECTION 23 11 23 - GAS PIPING

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment, special tools, supervision and services required to complete the following work indicated, noted and detailed on the drawings and specified herein:
1. Pipe and pipe fittings.
  2. Valves.
  3. Hangers and Supports.
  4. Connection of gas piping to equipment.

1.02 REFERENCES

- A. ANSI A13. 1-81 - Scheme for the Identification of Piping Systems.
- B. ANSI B16.3-77 - Malleable Iron Threaded Fittings, Class 150 and 300.
- C. ANSI B.1639-77 - Malleable Iron Threaded Pipe Union, Class 150, 250 and 300.
- D. ANSI A53-84 - Pipe, Steel, Black and Hot Dipped Zinc-Coated Welded and Seamless.
- E. ASTM A120-84 - Pipe, Steel, Black and Hot Dipped Zinc-Coated (Galvanized) Welded and Seamless, for Ordinary Uses.
- F. Manufacturers Standardization Society of the Valves and Fittings Industry (MSS) SP 58-83 - Pipe Hangers and Supports Materials, Design and Manufacturer.
- G. Manufacturers Standardization Society of the Valves and Fittings Industry (MSS) SP 69-83 - Pipe Hangers and Supports Selection and Application.
- H. NFPA 54-84 - National Fuel Gas Code.

1.03 REGULATORY REQUIREMENTS

- A. Conform to local applicable gas Code.

1.04 SUBMITTALS

- A. Submit product data on pipe materials, pipe fittings, valves and accessories.

PART 2 - PRODUCTS

2.01 GAS PIPING, ABOVE GROUND

- A. Pipe: Black steel per ASTM A53 or A120, schedule 40, threaded ends for size 2 inches and smaller.
1. Fittings: ANSI B16.3, Black malleable iron.
  2. Unions: ANSI B16.39, Black malleable iron.

2.02 SHUT-OFF VALVES, 2 INCHES AND SMALLER

- A. Bronze body ball valve per ANSI B16.33, full port pattern, reinforced PTFE seals, threaded ends, PTFE seat.
- B. Bronze body plug valve per ANSI B16.33, straightaway, taper plug, regular pattern with a port opening at least equal to the internal pipe area or round port full bore pattern, non lubricated, teflon packing, flat or square head stem with lever operator, 125 psig WOG rating, threaded ends.

2.03 HANGERS AND SUPPORTS

- A. MSS SP 58, types as required by MSS SP 69.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install gas piping and connect piping to equipment in accordance with applicable local gas Code and NFPA-54.
- B. Clean inside of pipe and fittings before installation. Blow lines clear using 80 to 100 psig clean dry compressed air. Rap sharply along entire pipe length before blowing clear. Cap or plug pipe ends to maintain cleanliness throughout installation.
- C. Piping:
  - 1. Cut pipe accurately to actual dimensions and assemble to preclude residual stress.
  - 2. Run piping parallel to structure lines.
- D. Identification of Piping:
  - 1. Identify piping in accordance with ANSI A13.1, using adhesive backed or snap on plastic labels and arrows.
  - 2. In lieu of labels, identification tags may be used with permission of Architect/Engineer.
- E. Hangers and Supports:  
Selection, fabrication and installation of piping hangers and supports shall conform with MSS SP 69, except that spacing of the hangers and supports shall comply with schedule below.

MAXIMUM SPAN FOR PIPE

DIAMETER INCHES	SPACING OF SUPPORTS (FT)
1/2	5'-0"
3/4	5'-9"
1	6'-6"
1-1/4	7'-6"
1-1/2	7'-6"
2	8'-6"
2-1/2 or larger	9'-0"

- F. Pressure Tests: Test gas piping in conformance with local gas Code.

SUBMITTAL CHECK LIST

- 1. Product Literature

END OF SECTION 23 11 23

SECTION 23 31 00 - DUCTWORK

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment, special tools, supervision and services required to complete the following work indicated, noted and detailed on drawings and specified herein:
  - 1. Low pressure ductwork.
  - 2. Duct cleaning.

1.02 REFERENCES

- A. ASHRAE - Handbook 1985 Fundamentals: Chapter 33 - Duct Design.
- B. ASHRAE - Handbook 1988 Equipment: Chapter 1 - Duct Construction.
- C. ASTM A 90 - Weight of Coating on Zinc-Coated (Galvanized) Iron or Steel Articles.
- D. ASTM A 167 - Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip.
- E. ASTM A 525 - General Requirements for Steel Sheet, Zinc Coated (Galvanized) by the Hot-Dip Process.
- F. ASTM A 527 - Steel Sheet, Zinc-Coated (Galvanized) by Hot-Dip Process, Lock Forming Quality.
- G. NFPA 90A - Installation of Air Conditioning and Ventilating System.
- H. NFPA 90B - Installation of Warm Air Heating and Air Conditioning Systems.
- I. SMACNA - HVAC Duct Construction Standards.
- J. UL 181 - Factory-Made Air Ducts and Connectors.

1.03 DEFINITIONS

- A. Duct Sizes:  
Inside clear dimensions. For lined ducts, maintain sizes inside lining.
- B. Low Pressure. Three Classifications:
  - 1. 1/2 inch WG positive or negative static pressure and velocities less than 2,000 fpm.
  - 2. 1 inch WG positive or negative static pressure and velocities less than 2,500 fpm.
  - 3. 2 inch WG positive or negative static pressure and velocities less than 2,500 fpm.

1.04 REGULATORY REQUIREMENTS

- A. Construct ductwork to [NFPA 90A] and [NFPA 90B] and [NFPA 96] standards

PART 2 - PRODUCTS

2.01 MATERIALS

- A. General: Non-combustible or conforming to requirements for Class 1 air duct materials, or UL 181.
- B. Steel Ducts: ASTM A525 or ASTM A527 galvanized steel sheet, lock-forming quality, having zinc coating of 1.25 oz. per sq. ft. for each side in conformance with ASTM A90.

- C. Flexible Ducts: Interlocking spiral of galvanized steel or aluminum construction or fabric supported by the helically wound spring steel wire or flat steel bands; rated to 2 inches WG positive and 1.5 inches WG negative for low pressure ducts and 15 inches WG positive or negative for medium high pressure ducts. UL-81 listed with 1 inch R-4.2 fiberglass insulation. Polyethylene vapor barrier jacket. Multi-ply metalized polyester core.
- E. Insulated Flexible Ducts: Flexible duct wrapped with flexible glass fiber insulation, enclosed by seamless aluminum pigmented plastic vapor barrier jacket; maximum 0.23 K value at 75°F.
- F. Fasteners: Rivets, bolts or sheet metal screws.
- G. Sealant: Non-hardening, water resistant, fire resistive, compatible with mating materials; liquid used alone or with tape, or heavy mastic.
- H. Hanger Rod: Steel, galvanized; threaded both ends, threaded one end, on continuously threaded.

## 2.02 LOW PRESSURE DUCTWORK

- A. Fabricate and support in accordance with SMACNA HVAC Duct Construction Standards and ASHRAE handbooks, except as indicated. Provide duct material, gauges, reinforcing and sealing for operating pressures indicated.
- B. Size round ducts installed in place of rectangular ducts in accordance with ASHRAE table of equivalent rectangular and round ducts. No variation of duct configuration or sizes permitted except by written permission.
- C. Construct T=s, bends, and elbows with radius of not less than 1-1/2 times width of duct on centerline. Where not possible and where rectangular elbows are used, provide air foil turning vanes. Where acoustical lining is indicated, provide turning vanes of perforated metal with glass fiber insulation.
- D. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible. Divergence upstream of equipment shall not exceed 30 degrees; convergence downstream shall not exceed 45 degrees.
- E. Provide easements where low pressure ductwork conflicts with piping and structure. Where easements exceed 10 percent duct area, split into two ducts maintaining original duct area.
- F. Connect flexible ducts to metal ducts with adhesive only, liquid adhesive plus tape, draw bands, adhesive plus sheet metal screws.
- G. Use crimp joints with or without bead for joining round duct sizes 8 inches and smaller with crimp in direction of air flow.
- H. Use double nuts and lock washers on threaded rod supports.
- I. Designed for static pressure rating up to 2" w.c.

## PART 3 - EXECUTION

### 3.01 INSTALLATION

- A. Obtain manufacturer's inspection and acceptance of fabrication and installation of glass fiber ductwork at beginning of installation.

- B. Provide openings in ductwork where required to accommodate thermometers and controllers. Provide pitot tube openings where required for testing of systems, complete with metal can with spring device or screw to ensure against air leakage. Where openings are provided in insulated ductwork, install insulation material inside a metal ring.
- C. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.
- D. Connect diffusers or troffer boots to low pressure ducts with 5 feet maximum length of flexible duct. Hold in place with strap or clamp.
- E. During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.

3.02 DUCTWORK APPLICATION SCHEDULE

<u>AIR SYSTEM</u>	<u>MATERIAL</u>
Low Pressure Supply (Heating Systems)	Steel, Aluminum, Fibrous Glass
Low Pressure Supply (System with Cooling Coils)	Steel, Aluminum, Fibrous Glass
Return and Relief	Steel, Aluminum
General Exhaust	Steel, Aluminum
Outside Air Intake	Steel
Combustion Air	Steel
Evaporative Condenser Intake and Exhaust	Steel

3.03 ADJUSTING AND CLEANING

- A. Clean duct system and force air at high velocity through duct to remove accumulated dust. To obtain sufficient air, clean half the system at a time. Protect equipment which may be harmed by excessive dirt with temporary filters, or bypass during cleaning.
- B. Clean duct systems with high power vacuum machines. Protect equipment which may be harmed by excessive dirt with filters, or bypass during cleaning. Provide adequate access into ductwork for cleaning purposes.

END OF SECTION 23 31 00

SECTION 23 37 00 - AIR OUTLETS AND INLETS

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment, special tools, supervision and services required to complete the following work indicated, noted and detailed on drawings and specified herein:
1. Diffusers.
  2. Diffuser boots.
  3. Registers/grilles.
  4. Intake and relief ventilators.

1.02 REFERENCES

- A. ADC 1062 - Certification, Rating and Test Manual.
- B. AMCA 500 - Test Method for Louvers, Dampers and Shutters.
- C. ANSI/NFPA 90A - Installation of Air Conditioning and Ventilating Systems.
- D. ARI 650 - Air Outlets and Inlets.
- E. ASHRAE 70 - Method of Testing for Rating the Air Flow Performance of Outlets and Inlets.
- F. SMACNA - Low Pressure Duct Construction Standard.

1.03 QUALITY ASSURANCE

- A. Test and rate performance of air outlets and inlets in accordance with ADC Equipment Test Code 1062 and ASHRAE 70.
- B. Test and rate performance of louvers in accordance with AMCA 500.

1.04 REGULATOR REQUIREMENTS

- A. Conform to ANSI/NFPA 90A.

1.05 SUBMITTALS

- A. Provide product data for items required for this project.
- B. Submit schedule of outlets and inlets indicating type, size, location, application and noise level.
- C. Review requirements of outlets and inlets as to size, finish and type of mounting prior to submitting product data and schedules of outlets and inlets.
- D. Submit manufacturer's installation instructions.

PART 2 - PRODUCTS

2.01 CEILING DIFFUSERS - ACCEPTABLE MANUFACTURERS

- A. Provide products, as approved by the Architect, from one of the following acceptable manufacturers:
1. "Price".
  2. "Titus".
  3. "Krueger".
  4. "Carnes".
  5. "Anemostat".
  6. "Nailor".



2.02 CEILING DIFFUSERS -ROUND

- A. Round, adjustable patter, stamped or spun, multicore type diffuser to discharge air in 360 degree pattern, with sectorizing baffles where indicated.
- B. Project diffuser collar not more than one inch above ceiling face and connect to duct with duct ring. In plaster ceiling, provide plaster ring and ceiling plaque.
- C. Fabricate of steel with baked enamel off-white finish.
- D. Provide radial opposed blade damper and multi-louvered equalizing grid with damper adjustable from diffuser face.

2.03 CEILING DIFFUSERS - RECTANGULAR

- A. Rectangular, adjustable pattern, stamped, multicore type diffuser to discharge air in 360 degree pattern with sectorizing baffles where indicated.
- B. Provide type frame as appropriate for ceiling in which it is to be installed. In plaster ceilings, provide plaster frame and ceiling frame.
- C. Fabricate of steel with steel or aluminum frame and baked enamel off-white finish.
- D. Provide radial opposed blade damper and multi-louvered equalizing grid with damper adjustable from diffuser face.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install items in accordance with manufacturer's instructions.
- B. Check location of outlets and inlets and make necessary adjustments in position to conform with architectural features, symmetry and lighting arrangement. Refer to Section 09900 for finishes.
- C. Install diffusers to ductwork with air tight connection.
- D. Provide balancing dampers on duct take-off to diffusers, and grilles and registers, regardless of whether dampers are specified as part of the diffusers, or grille and register assembly.
- E. Paint ductwork visible behind air outlets and inlets matte black. Refer to Section 09900.

END OF SECTION 23 37 00

SECTION 23 54 00.04 - FURNACES EVAPORATIVE COILS AND CONDENSING UNITS.

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment, special tools, supervision and services required to install complete the forced air heating and air conditioning equipment indicated, noted, detailed and scheduled on the drawings and specified herein as follows:
  - 1. Furnace
  - 2. Evaporative Unit
  - 3. Condensing Units
  - 4. Refrigeration Piping
  - 5. Thermostat Controls
  - 6. Condensate Overflow Pans

1.02 QUALITY ASSURANCE

- A. Furnace performance ratings: Certified by GAMA.
- B. Evaporative coil and condensing unit performance ratings: Tested and rated per ASI Standards 210 and 270.

1.03 REGULATORY REQUIREMENTS

- A. Design certified by American Gas Association Laboratories.
- B. All equipment U.L. Listed.

1.04 SUBMITTALS

- A. Submittals shall include unit dimensions, required clearances, capacities, ratings, fan performance, gauges and finishes of materials.
- B. Submit electrical requirements for power supply wiring including diagrams for interlock and control wiring.
- C. Submit manufacturer's installation instructions and operation and maintenance manuals.
- D. Submit manufacturer's information for thermostat including installation instructions and programming instructions.

1.05 EQUIPMENT WARRANTY

- A. Heat Exchangers: Fifteen (15) year warranty.
- B. Compressor: Five (5) year warranty.
- C. Furnace and Evaporative Coils: One (1) year warranty.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Furnace, Evaporative Coil and Condensing Units:
1. Lennox
  2. Bryant
  3. Carrier
  4. Goodman
  5. Trane

2.02 GENERAL

- A. Units shall be factory assembled with all controls installed. Units shall be factory test operated.
- B. Furnace, evaporative coil and condensing units shall be by same manufacturer.

2.03 FURNACE UNITS

- A. Heat Exchanger and Combustion Chamber:
1. Fuel: Natural Gas.
  2. Assembly shall consist of combustion chamber, tailpipe, exhaust decoupler section and condenser coil.
  3. Cast iron combustion chamber shall contain the spark plug igniter, flame sensor, combustion air and gas intake manifolds.
  4. Tailpipe shall be constructed of stainless and aluminized steel with large surface area.
  5. Exhaust decoupler shall be constructed of aluminized steel with large surface area.
  6. Condenser coil intake header shall connect to bottom of exhaust decoupler section. Coil shall be constructed of ripple-edged aluminum fins fitted to stainless steel tubes.
- B. Combustion Air Intake Box:
1. Box shall consist of purge blower, air intake flapper valve and two pressure switches.
  2. Blower shall operate during pre-purge and post purge cycles.
- C. Cabinet
1. Constructed of heavy gauge cold rolled steel.
  2. Baked-on enamel finish.
  3. Complete service access by removing furnace and blower compartment access panels.
- D. Fan
1. Direct Drive.
  2. Statically and dynamically balanced.
  3. Multi speed motor, 4-speed minimum.
  4. Limit Control
- E. Controls
1. Power supply and thermostat wiring connections shall be available in wiring junction box. Low voltage terminal strip shall be provided.
  2. 24 volt control transformer and fan-relay shall be standard.
  3. Automatic gas controls and Electronic Pilot ignition.
    - a. 100% safety shut off.
    - b. Automatic pilot safety manual valve, automatic electric valve (dual), pilot valve, and pressure regulator.
  4. Provide relay switch for use with electronic programmable thermostat.

- F. Vent/Intake Air Wall Termination Kit:
  - 1. Close-couple PVC piping with galvanized steel wall cover plate.
  - 2. A.G.A. certified.
  - 3. Manufacturer=s Standard in-line mufflers.

2.04 EVAPORATIVE UNITS

- A. Evaporator Coils:
  - 1. Constructed of aluminum fins machine fitted to copper tubes.
  - 2. Built for vertical up/down/horizontal airflow and for matching with up-flow/down-flow/horizontal-flow furnaces.
- B. Coil cabinets shall be factory-built, constructed of cold-rolled steel, finished with baked-on enamel, and insulated with thick fiberglass insulation.
- C. Condensate Pan: Non-corrosive construction.
- D. Expansion valve shall be provided.

2.05 CONDENSING

- A. Cabinet shall be constructed of heavy gauge galvanized steel with baked-on outdoor enamel. Wire condenser coil guard shall be manufacturer=s standard product.
- B. Hermetic compressor shall be factory dehydrated and sealed against moisture, air and dirt. Compressor controls shall be complete with high pressure switch, low pressure switch, capacitors and relay. Timed-off control shall b e provided to prevent short-cycling of compressor. Crankcase heaters shall be standard.
- C. Condensing coil shall have copper tubes and aluminum fins.
- D. Condenser Fan shall be direct drive with vertical discharge. Fan shall be balanced, permanently lubricated and shall be provided with capacitors, relay and overload protection. Wire fan guard shall be manufacturer=s standard design. Fan motor shall be totally enclosed and provided with shield for protection against moisture.
- E. Suction and liquid line services valves and gauge ports shall be provided in refrigerant system. Hi-capacity drier shall be provided.
- F. Low ambient kit shall be provided for operation of unit down to 0°F. Provide hard starts and short cycle protection.

2.06 REFRIGERANT PIPING

- A. Refrigerant lines shall be cleaned, dried, pressurized and sealed at the factory. Suction line shall be fully insulated.
- B. Refrigerant piping shall be Type L copper.

2.07 CONDENSATE PIPING

- A. Install under Section 15410 - Plumbing Piping Inside Building.
- B. Condensate over flow pans - minimum 22 gauge galvanized steel, or other non-corrosive material.

2.08 THERMOSTAT

- A. Thermostat shall be programmable solid state electronic setback thermostat for heating/cooling systems.
- B. Thermostat shall automatically reduce the temperature at night to a lower setpoint for a specific period of time and repeat the timed cycle every 24 hours. Thermostat shall be programmed by an integral digital keyboard. LCD shall indicate time-of-day and program schedule.
- C. Subbase controls shall include heat-cool-off switch and on-auto switch.
- D. Provide locking plastic cover.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer=s instructions.
- B. Connections to ductwork shall be with flexible duct connections. Provide grounding straps with slotted connections.
- C. Provide mating components as required by manufacturer to attach evaporator unit to furnace.
- D. Furnaces shall be mounted on cross-ribbed neoprene pads equal to AShear-Flex@ as manufactured by Vibration Mountings & controls, Inc.
- E. Ensure filters are in place before operating fan or furnace. Provide two (2) sets of replacement filters.
- F. Provide poured-in-place or precast concrete housekeeping pad, minimum 3@ thick for furnace units.
- G. Provide poured-in-place or precast concrete pad 3@ thick for condensing unit support.
- H. Provide condensate pan overflow pipe with chrome escutcheon for units. Route as directed.

SUBMITTAL CHECK LIST

- 1. Product Literature
- 2. Electrical and Installation Instructions
- 3. Operation and Maintenance Manuals

END OF SECTION 23 54 00.04

SECTION 26 01 00.01 - SUMMARY OF ELECTRICAL WORK

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Furnish and install a complete electrical system, as specified and shown on drawings.
- B. Provide all items, articles, materials, operations or methods listed, mentioned or scheduled on the drawings and/or herein, including all labor, materials, equipment and incidentals necessary and required for their completion.
- C. All work shall be installed as per drawings, specifications and electrical code. Where one contradicts the other the greater shall be used.
- D. Coordination required for submittals of electrical and lighting utility incentives and rebates.

PART 2 - PRODUCTS

2.01 GENERAL

- A. All materials shall be new and bear the manufacturer's name, trade name and UL label in every case where a standard has been established for the particular material. The materials to be furnished under each section of the specifications shall be the manufacturer's latest approved design.
- B. Materials shall be delivered to the site and stored in original containers and be readily accessible for inspection by the Architect/Engineer until installed.
- C. Materials of the same general type shall be of the same make throughout the project to provide a uniform appearance, operation and maintenance.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. All work performed under this section must be done by workmen skilled in their respective trades. All work must present an appearance typical of the best trade practices. Any work not installed in this manner shall be repaired, removed and replaced or otherwise remedied as directed by the Architect/Engineer.
- B. Manufacturer's direction shall be followed completely in the delivery, storage, protection and installation of all equipment and materials. The Contractor shall promptly notify the Architect/Engineer, in writing, of any conflict between any requirement of the Contract Documents and the manufacturer's directions or such written instructions from the Architect/Engineer, before proceeding with the work.
- C. All work and equipment installed under Division 26 work shall be supported, plumbed, rigid and true to line. All Architectural, Structural, Mechanical, Electrical and Fire Protection drawings, shop drawings and catalog data, shall be studied thoroughly, to determine how equipment, fixtures and conduit, etc., are to be supported, mounted or suspended, and shall provide extra steel bolts, inserts, brackets and accessories for proper support whether or not show on the drawings. When directed, drawings shall

be submitted showing supports for approval.

3.02 MISCELLANEOUS STEEL

- A. Provide all necessary miscellaneous steel angles, channels, rods, etc., for hanging, mounting or suspending equipment, fixtures, devices, etc., installed under Division 26 work.
- B. Supports installed under Division 26 work shall be suitably fastened to building structural members in a manner approved by Architect/Engineer

3.03 SPECIAL SEALS

- A. After conduits and tubing are installed, the spaces around conduits shall be sealed.
- B. Sealing of all spaces created for the electrical systems shall be in accordance with the requirements of the fire inspector and governing codes.

3.04 UTILITY INCENTIVES AND REBATES

- A. Coordinate materials to and through the Architect as required by utility companies for submission of incentives and rebates.
- B. Provide all paperwork as requested by the Architect for this purpose on behalf of the Owner.
  - 1. Product submittals and cutsheets of all installed materials and items.
  - 2. Invoices including information such as; make/model, quantities, unit prices, total costs, etc.
  - 3. Contractor shall sign all required forms as necessary for completion of the submission.
  - 4. Submittal will be coordinated through and submitted by the Architect on behalf of the Owner.
- C. Contractor may be required to coordinate timing for ordering of materials and products to correspond to time requirements by the utility granting incentive or rebate. Some products may require granting of the incentive and rebate prior to ordering of materials. This may result in ordering of materials in multiple packages and at differing times for multiple deliveries. Contractor is to coordinate these requirements as communicated by the Architect.
- D. **PAYMENT OF ALL INCENTIVES AND REBATES WILL BE MADE TO THE OWNER, NOT THE CONTRACTOR.**

END OF SECTION 26 01 00.01

SECTION 26 01 00.02 - ELECTRICAL COORDINATION

PART 1 - GENERAL

1.01 COORDINATION

- A. The Contractor is responsible for the proper coordination of the work specified herein.
- B. Any apparatus, appliance, material or work not shown on the drawings, but mentioned in the specifications or vice versa, or any incidental accessories necessary to make the work complete in all respects and ready for operation, even if not particularly specified, shall be furnished, delivered and installed under Division 26 work.
- C. Minor adjustments in location of conduit, boxes, and/or equipment shall be made at no additional charge if so directed prior to their installation. Where offsets in conduits, additional fittings, necessary junction boxes, pull boxes, devices, etc., are required to complete the installation, to clear obstructions or the work of other trades, or for the proper operation of the system, these shall be deemed to be included in the Contract and shall be furnished and installed complete under Division 26 work.
- D. The Contractor shall exchange complete original and revised drawings, details, information, etc., such that all installations are properly coordinated and fit together into a complete and acceptable project.
- E. Where Division 26 work will be installed in proximity to other work or where there is evidence that the Division 26 work will interfere with other work the contractor shall assist in working out space conditions to make a satisfactory adjustment. If so directed by Architect/Engineer, the contractor shall prepare composite working drawings and sections at a suitable scale not less than 1/4 inch - 1'-0", clearly showing how work is to be installed in relation to other work. If Division 26 work is installed before coordinating with other work, or so to cause interferences with other work, the contractor shall make necessary changes in the work to correct the condition.
- F. The contractor shall arrange for all chases in walls, slots in beams, openings in floor or roof, etc., required for the installation of pipes, ducts, conduits, etc., and be held responsible for the proper location of chases required for the work. The contractor shall further be responsible for having work that is required to be built in, on hand in time for proper progress.
- G. The contractor shall make all measurements in the field and shall be responsible for correct fittings. The contractor shall coordinate this work with all other divisions in such a manner as to cause a minimum of conflict or delay. Division 26 work shall be coordinated in advance with other work and report immediately any difficulty which can be anticipated before installing work in question.
- H. The contractor shall coordinate with other work for proper location of roughing-in an connection to equipment.
- I. Refer to Architectural, Structural, Mechanical Drawings and Specifications for construction features, floor and ceiling elevations, finishes, grade elevations, work in other divisions, size and location of pipe chases and head room for same, location of walls, partitions, beams, etc., swing of doors, switches and electrical outlets and the order and time of placement of all work. No work to proceed until all details affecting or affected by these conditions have been completely developed and properly resolved.

1.02 VISIT THE PREMISES

- A. The contractor is directed to visit the premises and become thoroughly familiar with the general layout of the building site and the location of the present utility lines to which connection will be made before



submitting a proposal.

- B. The contractor shall also check present grades, ditches, pavements, sewers and/or any other conditions affecting the installation of electrical ducts and utilities under the Contract.
- C. Offsets which may be required to leave new work clear, etc., will be included in the proposal, and the contractor assumes full responsibility for having made a proper and thorough investigation of these requirements.
- D. The Contract is based upon the assumption that the contractor has investigated, understands and accepts all existing conditions.
- E. While all existing storm sewers, sanitary sewers, water mains, gas mains, power lines, telephone lines and other utility services, and/or installations, both underground and overhead, may not have been indicated on the drawings, the contractor will be held expressly responsible for determining the exact location of all such service lines and/or installations encountered in the performance of the Contract and for the provision of suitable protection, support and maintenance.

1.03 SPACE REQUIREMENT

- A. It shall be the responsibility of the contractor to insure that items to be furnished fit the space available, with proper provisions for access to equipment for maintenance and replacement. The contractor shall make necessary field measurements to ascertain space requirements, including those for connections, and removal of parts, and shall furnish and install such sizes and shapes of equipment that the final installation shall suit the true intent and meaning of the drawings and specifications.
- B. All installations shall be made to maintain maximum headroom and clearance around equipment. When space and/or headroom appear inadequate, Contractor shall notify Architect/Engineer prior to proceeding with the installation.
- C. All equipment which must be serviced, operated or maintained shall be located in fully accessible positions. Minor deviations from the contract drawings may be made to allow for better accessibility, but changes of magnitude or which involve extra cost shall not be made without prior approval.
- D. The contractor is responsible to determine that the equipment and appliances which are furnished can be brought into the building. No extra compensation will be allowed for dismantling of equipment to install in the available space or to obtain entrance into the building.
- E. Where equipment that has been approved requires different arrangement or connections from those shown, it shall be the responsibility of the contractor to install the equipment to operate properly and in harmony with the intent of the drawings and specifications. When directed by the Architect/Engineer, the contractor shall submit drawings showing the proposed installation. If the proposed installation is approved, the contractor shall make all incidental changes in conduits, supports, wiring, heaters, panelboards, etc.
- F. The contractor shall provide any additional devices, fittings, and other additional equipment required for the proper operation of the system resulting from the selection of equipment, including all required changes in affected trades. The contractor shall be responsible for the proper location of roughing in and connections by other trades.

1.04 MATERIAL STORAGE

- A. All materials shall be stored in a manner that does not interfere with the progress of work. All items shall be stored in dry spaces.
  
- B. Materials stored within buildings as approved by the Architect/Engineer shall be distributed in such a manner as to avoid overloading of the structural frame, and never shall be concentrated in such a manner as to exceed the equivalent of fifty (50) pounds per square foot uniformly distributed loading.

END OF SECTION 26 01 00.02

SECTION 26 01 00.03 - CODES, FEES AND STANDARDS

PART 1 - GENERAL

1.01 CODES AND FEES

- A. Unless specifically notes to the contrary, the Contractor shall furnish all equipment materials, labor and install and test in accordance with applicable sections of latest revisions published at date of bid of the following:
1. American Concrete Institute (ACI).
  2. American National Standards Institute (ANSI).
  3. American Society for Testing and Materials (ASTM).
  4. American Institute of Steel Construction (AISC).
  5. Aluminum Association (AA).
  6. National Board of Fire Underwriters (NBFU).
  7. Underwriters Laboratories Inc. (UL).
  8. American Iron and Steel Institutes (AISI).
  9. Institute of Electrical and Electronics Engineers (IEEE).
  10. National Electrical Manufacturers Association (NEMA).
  11. Insulated Cable Engineers Association (ICEA).
  12. National Electrical Safety Code (NESC).
  13. Edison Electric Institute (EEI).
  14. National Electric Code (NEC).
  15. Illuminating Engineering Society (IES).
  16. National Bureau of Standards (NBS).
  17. American Welding Society (AWS).
  18. Association of Edison Illumination Companies (AEIC).
  19. Uniform Building Code (UBC).
  20. American Association of State Highway and Transportation Officials (AASHTO).
  21. Environmental Protection Agency (EPA).
  22. Occupational Safety and Health Act (OSHA).
  23. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA).
  24. Lighting Protection Institute (LPI) Standard of Practice.
  25. Life Safety Code (LSC).
  26. Local State Fire Marshall's Office (SFM).
  27. National Fire Protection Association (NFPA).
- B. The provisions, rules, regulations and ordinances listed above are to be considered as much a part of these specifications as if repeated herein or attached hereto. All changes or modifications required to conform to such codes, regulations or requirements must be approved by the Architect/Engineer.
- C. The Contractor shall comply with applicable laws, building and construction codes and applicable regulations of governing local, County, State and other applicable codes, including the Utility company. Obtain permits and inspections from authorities having jurisdiction, and pay required charges. Deliver certificates of inspection to the Architect at time of acceptance inspection.

1.02 STANDARDS

- A. All materials shall be new, free of defects and shall be U.L. listed, bear the U.L. Label or be labeled or listed with and approved, nationally recognized Electrical Testing Agency. Where no labeling or listing service is available for certain types of equipment, test data shall be submitted to prove to the Engineer that equipment meets or exceeds available standards.

1.03 UTILITY COMPANY FEES, CHARGES, COSTS

- A. It is the contractor's responsibility to contact the appropriate Electric and Telephone Utility Companies to determine if any fees, charges or costs will be due to the Utility Company, as required by the Utility Company for temporary power, In/Out installations, hook-ups, surveying of easements, etc. This fee, charge or cost shall be included in the contractor's bid price.

END OF SECTION 26 01 00.03

SECTION 26 01 00.04 - BASIC MATERIALS AND METHODS

PART 1 - GENERAL

1.01 SCOPE

- A. The work shall include the furnishings of systems as defined in Section 26 01 00.01 “Work Included”.
- B. Drawings for the work are diagrammatic, intended to convey the Scope of the Work and to indicate the general arrangement and locations of the work. Because of the scale of the drawings, certain basic items such as conduit fittings, access panels, sleeves, pull and junction boxes may not be shown. Where such items are required by Code or by other sections, such items shall be included.
- C. Equipment Specification may not deal individually with minute items such as components, parts, controls and devices which may be required to produce the equipment performance specified or as required to meet the equipment warranties. Where such items are required, they shall be included by the supplier of the equipment, whether or not specifically indicated.
- D. Coordinate with all trades in submittal of shop drawings. Shop drawings shall detail space conditions to the satisfaction of all concerned trades, subject to review and final acceptance by the Architect. In the event that the Contractor installs work before coordinating with other trades or so as to cause any interference with work of other trades, the necessary changes shall be made in the work to correct the condition, at no additional cost to the Owner.

1.02 TEMPORARY POWER AND LIGHTING

- A. Furnish, install and maintain temporary power with ground fault protection and lighting to be used by all trades during construction. See Section 26 01 00.03 for In/Out fees. The entire system shall be grounded. Payment for monthly current consumption shall be the responsibility of the Contractor. Thermal magnetic breakers or cartridges fuses only shall be used for over current protection.

1.03 SUPERVISION OF THE WORK

- A. Provide field superintendent who has had a minimum of four (4) years previous successful experience on projects of comparable sizes and complexity. Superintendent shall be present at all times that work under this Division is being installed or affected. Superintendent shall be a licensed Journeyman.

1.04 ELECTRICAL CONNECTIONS

- A. All connections shall be tightened to the torque values recommended by that device manufacturers instructions. If these values are not listed, tighten to pound-inch or pound-foot values recommended in UL Standard 486B, a summary of which may be found in the National Electric Code Handbook.

1.05 ACTIVE SERVICES

- A. Existing active services; water, gas, sewer, cable, fiber electric, when encountered, shall be protected against damage. Do not prevent or disturb operation of active services which are to remain. If active services are encountered which require relocation, make request to authorities with jurisdiction or determination of procedures. Where existing services are to be abandoned, they shall be terminated in conformance with requirements of the utility or Municipality having jurisdiction.

1.06 TESTS

- A. Systems shall be tested by the Contractor and placed in proper working order prior to demonstrating systems to Owner.
- B. After work is completed, a load balance test shall be made for each panelboard to demonstrate that with full lighting and mechanical load, the balance between phases is within 10%. Unbalanced beyond this limit shall be corrected, maintaining proper phase relation to neutral at all times. Submit

to Engineer, prior to request for final inspection, a written report of existing and final load information.

1.07 DEMONSTRATIONS

- A. Prior to acceptance of the work, the Contractor shall demonstrate to the Owner, or his designated representative, all features and functions of all systems and shall instruct the Owner in the proper operation of the systems. Each system shall be demonstrated once.
- B. The demonstration shall consist of not less than the following:
  - 1. Point out the actual location of each component of a system and demonstrate its function and its relationship to other components within the system.
  - 2. Demonstrate the electrical system by actual “start-stop” operation showing how to work controls, how to reset protective devices, how to replace fuses, and what to do in an emergency.
  - 3. Demonstrate communication, signal, alarm and detection systems by actual operation of the systems and show how to reset signal, alarm and detection devices.
- C. Systems to be demonstrated shall include but not be limited to the following:
  - 1. Service and power distribution systems.
  - 2. Lighting and lighting control systems.
  - 3. Emergency lighting systems.
  - 4. Motor and equipment control.
  - 5. Fire alarm system.
  - 6. Intercom and paging system.
  - 7. Program bell system.
  - 8. Security system.
  - 9. HVAC time control system.
- D. Contractor shall furnish the necessary trained personnel to perform the demonstrations and instructions, and if necessary shall arrange to have the manufacturer's representatives present to assist with the demonstrations. The Contractor shall allow one (1) day for performing prescribed demonstrations.
- E. The Contractor shall arrange with the Owner the dates and times for performing each demonstrations.

1.08 IDENTIFICATION

- A. The Contractor shall provide identification for wiring systems and equipment.
- B. Lettering for identification of fire alarm, telephone, TV, security, P.A. etc., shall be of sign painters quality or stencil lettering. Paint shall be fast drying sign enamel. All major pull and junction boxes for these systems except fire alarm in service areas, tunnels, above accessible ceilings and in accessible chases shall have one-half inch high black lettering identifying the system. Fire alarm shall have red lettering. Example: Fire Alarm = FA, Security = SCTY, Telephone = TEL.
- C. Power and lighting circuits shall have conductors color banded, per 26 05 19 Wire and Cable in each junction and pull box.
- D. Nameplates:
  - 1. The following, but not limited to, items shall be equipped with nameplates: All motor starters, push-button stations, control panels, time switches, disconnect switches, panel boards, contractors or relays in separate enclosures, power receptacles where the nominal voltage between any pair or contracts is greater than 150V, all switches controlling outlets or equipment where the outlets are not located within sight of the controlling switch, high voltage

boxes and cabinets. Special electrical systems shall be identified at terminal cabinets and equipment racks.

2. Power panels, motor control centers and switchgear without doors, shall have circuit breakers and switches identified by engraved plastic tags affixed to cabinet adjacent to device.
  3. Nameplates shall adequately describe the function of the particular equipment involved. Where nameplates are detailed on the drawings, inscription and size of letters shall be as shown on the shop drawings submitted for approval. Nameplates for panelboards, motor control centers and switchboards shall include the panel designation, voltage and phase of the supply. For example, "Panel PA, 120/208V, 3-phase, 4-wire". The name of the machine on the nameplates for a particular machine shall be the same as the one used on all motor starters, disconnect and P.B. station nameplates for that machine.
  4. Nameplates shall be laminated phenolic plastic, black front and back with white core, with lettering etched through the outer covering. Attach with plated self-tapping screws or small brass screws in un-air conditioned spaces. Nameplates to identify emergency devices shall be red laminate.
- E. Panelboards shall have type-written circuit directories installed inside the doors under transparent plastic covers.

#### 1.09 SUBMITTALS

- A. Method of preparing and procedure for submitting Shop Drawings and submittal data shall be in compliance with the general section of these specifications.
- B. Submittal data for electrical equipment shall consist of Shop Drawings and/or catalog cuts showing technical data necessary to evaluate the material or equipment, to include dimensions, wiring diagrams, performance curves, ratings, control sequence and other descriptive data necessary to describe fully the item proposed and its operating characteristics. Any submittal data in following electrical sections, peculiar to that section, is in addition to submittal requirements of this section.

#### 1.10 EXCAVATING, TRENCHING AND BACKFILLING

- A. The contractor shall do excavating necessary for underground wiring, conduit and shall backfill trenches and excavations with sand after work has been inspected. Care shall be taken in excavating that walls and footings and adjacent load bearing soils are not disturbed in any way, except where lines must cross under a wall footing. Where a line must pass under a footing, the crossing shall be made by the smallest possible trench to accommodate the conduit. Excavation shall be kept free from water by pumping if necessary. No greater length of trench shall be left open, in advance of conduit laying, than that which is required.
- B. Roots shall be removed to a minimum level of eighteen (18) inches below finish grade. No roots shall be allowed to remain under any installed electrical work.
- C. Backfill about the structures shall be placed, when practical, as the work of construction progresses. Backfilling on or against concrete work shall be done only when directed. Backfilling of duct lines shall progress as rapidly as the testing and acceptance of the finished sections of the work will permit and shall be carried to a crown approximately six (6) inches above the existing grades. In backfilling around duct lines, selected material shall be compacted firmly around and to a depth of not less than six (6) inches over the top of the duct. Fill and backfill and rough gradings shall be compacted thoroughly in layers and shall be brought up to within six (6) inches of finished grades. Fill and backfill shall be clean and free from vegetable matter and refuse.

#### 1.11 CUTTING AND PATCHING

- A. Cut existing walls, floors, ceilings, roofs, etc. necessary for the proper installation of new materials,

equipment and related electrical items. Provide all necessary framing, lintels, hangers, etc. to maintain the structural integrity of the building system after cutting.

- B. Contractor is responsible for cost to restore or patch adjacent surfaces to original condition. Employ proper professional trade for patching and finishing exposed surfaces.

END OF SECTION 26 01 00.04



SECTION 26 05 19 - WIRE AND CABLE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. The other Contract Documents complement the requirements of this Section. The General Conditions apply to the work of this Section.

1.02 SCOPE

- A. Furnish materials, tools, labor and supervision necessary to install wiring systems.

1.03 STANDARDS AND CODES

- A. Methods of installation shall comply with the provisions of applicable Sections of NEC, Article 300.
- B. Materials shall be in accordance with NEC, Article 310 and shall be UL listed for application intended.

1.04 DESCRIPTION

- A. This Section describes the basic materials and methods of installation for general wiring systems of 600 volts and less. Wiring for a higher voltage rating, if required, shall be specified in another Section or as required.
- B. Minimum size conductors shall be No. 12 AWG for power circuits, No. 14 AWG for control wiring and 20 AWG shielded for communication and sensor wiring.

1.05 QUALIFICATIONS

- A. The material used for the wiring systems shall be the products of a manufacturer regularly engaged in the manufacturing of the specified material. Where a manufacturer is named for a particular material, the materials of other manufacturers will be acceptable provided the material meets requirement of the specifications.

PART 2 - PRODUCTS

2.01 WIRE AND CABLE

- A. Wire and cable for power, control and signal circuits shall have copper conductors of not less than 98% conductivity and shall be insulated to 600V except as noted below. Power conductor sizes No. 10 and 12 AWG shall be solid or stranded. Aluminum wire is not permitted.
- B. Type of wire and cable for the various application shall be as follows:
1. Type THW, THWN or XHHW (75°C): Use for branch circuits, and equipment power feeders in wet and dry locations, No. 12 AWG minimum.
  2. Type RHH, THHN or XHHW (90°C): Use for branch circuits, and equipment power feeders in dry locations only, No. 12 AWG minimum.

2.02 CONDUCTOR COLOR CODING

- A. Wiring systems shall be color coded. Conductor insulation shall be colored in sizes up through No. 8 AWG, conductors No. 6 AWG and larger shall have black insulation and shall be phase color coded with one-half inch band of colored tape at all junctions and terminations. Colors shall be assigned to each conductor as described below and carried throughout all main and branch circuit distribution.

<u>CONDUCTOR</u>	<u>120/208 Volt</u>	<u>277/480 Volt</u>
1. Phase 'A' conductor	Black	Brown
2. Phase 'B' conductor	Red	Orange
3. Phase 'C' conductor	Blue	Yellow
4. Neutral conductor	White	Grey
5. Grounding conductor	Green	Green

2.03 CONNECTORS - POWER WIRING

- A. In-line splices and taps for conductor sizes No. 8 AWG and smaller; use 3M Co. Scotchloc vinyl insulated spring connectors, or equivalent.
- B. Insulate splices and taps to thickness of conductor insulation with half-lapped of 3M Scotch brand No. 33 vinyl electrical tape. Connectors having irregular surfaces; fill voids and smooth contours with 3M Scotchfil electrical putty prior to tapping.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Wire shall not be installed in the conduit system until the building is enclosed and wet work completed.
- B. Conduit shall be swabbed free of moisture and debris prior to pulling in wire.

3.02 INSTALLATION

- A. Splices in branch circuit wires shall be made only in accessible junction boxes.
- B. Power cable shall be pulled with the use of approved pulling compound for long runs.

END OF SECTION 26 05 19

SECTION 26 05 26 - GROUNDING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. The other Contract Document complement the requirements of this Section. The General Conditions apply to the work of this Section.

1.02 SCOPE

- A. This section deals with the grounding of service equipment, transformers, non-current carrying conductive surfaces of equipment, metal buildings, structures and other equipment.

1.03 STANDARDS AND CODES

- A. All grounding connections shall be installed in accordance with the National Electrical Code and applicable local code requirements. Such codes shall be considered minimum requirements and the installation of the grounding system shall insure freedom from dangerous shock exposure and shall provide a low impedance ground fault path to permit operation of overcurrent and ground fault protective devices.
1. NEC Article 250
  2. National Electrical Safety Code.

1.04 QUALIFICATIONS

- A. Use Thomas and Betts compression ground system, exothermic welds or an approved listed compression type system.

PART 2 - PRODUCTS

2.01 CONDUCTORS

- A. All grounding conductors whether insulated or not shall be copper.

2.02 GROUND RODS

- A. All ground rods shall be copper clad steel, 3/4 inch by 10 feet solid type.

2.03 GROUND CONNECTIONS

- A. The connection of a grounding conductor to ground rods or ground conductor to ground conductor shall be by means of Thomas & Betts compression ground system, or exothermic weld.
- B. Ground connections to building steel or equipment shall be bolted using T & B compression type lugs.
- C. Slab penetrations of ground conductors shall terminate on T & B compression type flush plate connectors installed flush in slab. Interior connections of flush plate connectors shall be made using compression lugs.
- D. Grounding conductor connections at conduit terminations shall be made by approved listed grounding bushings.

PART 3 - EXECUTION

3.01 MAIN SERVICE GROUND

- A. In accordance with NEC Article 250-81, each of the following shall be bonded together to form the grounding electrode system:

1. Metal underground water pipe in direct contact with the earth for 10 feet or more (provide jumpers around water meter).
  2. Metal frame of the building where effectively grounded.
  3. Concrete-encased electrode consisting of a minimum of 20 feet of No. 3/0 AWG bare copper in the footing.
  4. Counterpoise (Ground Ring) for lightning protection system (if lightning protection is installed).
- B. This grounding system shall be supplemented by three copper clad steel ground rods 3/4 inches in diameter by 10 feet long. The ground rods shall be driven a distance of 10 feet apart.
- C. The grounding electrode system shall be connected to the grounded circuit conductor (neutral) on the supply side of the service disconnecting means by a grounding electrode conductor. The grounding electrode conductor will be sized as shown in Table 250-94 of the National Electrical Code.

3.02 FEEDER AND BRANCH CIRCUITS

- A. All feeders and branch circuits shall have installed in the same raceway as the circuit conductors, an insulated copper grounding conductor sized in accordance with Table 250-95 of the National Electrical Code unless such a grounding conductor is shown to be larger on the plans or specified to be larger elsewhere in the specifications.

3.03 EXPOSED NON-CURRENT CARRYING CONDUCTIVE SURFACES

- A. All exposed non-current carrying conductive surfaces of electrical equipment shall be grounded to the equipment conductor run with the circuit conductors or a separate ground as shown on the drawings.

END OF SECTION 26 05 26

SECTION 26 05 33.13 - CONDUIT SYSTEMS

PART 1 - GENERAL

1.01 SCOPE

- A. Furnish materials, tools, labor and supervision necessary to fabricate and install a complete electrical conduit system.
- B. Conduit systems shall be provided for all wiring systems, except where the Drawings or other Sections of the Specifications indicate that certain wiring may be installed without conduit.

1.02 STANDARDS AND CODES

- A. Methods of fabrication and installation shall copy with the provisions of all applicable Sections of the NEC.
- B. Materials shall be UL and NEC approved for the application intended.

1.03 DESCRIPTION

- A. This section describes the basic materials and methods of installation for conduit systems.

1.04 QUALIFICATIONS

- A. The materials used in the fabrication of the conduit system shall be products of a manufacturer regularly engaged in the manufacturing of the specified material. Where a manufacturer is named for a particular material, the material of other manufacturers shall be acceptable provided the materials meets requirements of the Specification.

PART 2 - PRODUCTS

2.01 CONDUIT

- A. Rigid Conduit: Full weight, threaded, rigid steel conduit, galvanized inside and out by hot dip or electrogalvanizing process. Additional protection by electrostatically applied baked coating. Thread protective caps and couplings shall remain in place prior to use. Rigid conduit to be used for exposed exterior installations, where subject to physical abuse and required by Code.
- B. Electrical Metallic Tubing (EMT): Thinwall, electrically welded cold rolled steel conduit, galvanized inside and out by electrogalvanized process. Use for conduit installed in stud walls, masonry walls, above suspended ceilings and were exposed in interior spaces not subject to physical abuse.
- C. Flexible Metal Conduit: Formed at one continuous length of spirally wound electrogalvanized steel strip. Use for final connections to any equipment subject to movement or vibration. Connections to fixtures shall be limited to 6 feet in length. All other connections shall be a maximum of 1'-6" in length.
- D. Liquidtight Flexible Metal Conduit: Formed of one continuous length of spirally wound steel strip, with water and oil tight neoprene jacket. Use for final connections to equipment listed in paragraph C above when located in wet or damp areas.

- E. PVC Conduit:  
Conduit shall be sunlight resistant, schedule 40, 90°C. Conduit shall be composed of polyvinyl chloride and shall conform to NEMA Standards. Conduit, fittings and cement shall be produced by the same manufacturer. May be used where buried outside building, encased in concrete, or below slabs on grade. Electrical non-metallic tubing and rigid non-metallic conduit shall not be used below grade within the building. PVC conduit shall be installed in concealed location only.
- F. Type MC cable:
1. May be used as approved by Code.
  2. Factory assembly of one or more insulated conductors enclosed in a metallic of interlocking tape.
  3. Install all MC cable in a neat fashion. All unacceptable MC cable installation shall be removed and replaced at the Architect's discretion. MC cable shall run with buildings member and strapped as per NEC330.
  4. Do not install MC cable in or on masonry walls.
  5. All MC cable shall be concealed.
- G. Electrical non-metallic tubing and rigid non-metallic conduit shall not be used within the building.

## 2.02 CONDUIT FITTINGS

- A. Rigid Conduit Fittings:  
Threaded, galvanized malleable iron or heavy steel, water and concrete tight.  
Grounding type nylon insulated bushings for connectors at cabinets, boxes and gutters.
- B. Metallic Tubing Fittings:  
Set screw type steel, except in wet or concrete tight applications. For wet or concrete tight applications, use compression type galvanized steel. Use connectors with nylon insulated throats at cabinets, boxes and gutters. Indenter type and malleable iron fittings will not be allowed.
- C. Flexible Metal Conduit Fittings:  
Squeeze or screw type galvanized steel with nylon insulated throats.
- D. Liquidtight Flexible Conduit Fittings:  
Galvanized steel, with watertight gaskets, O-ring and retainer, and nylon insulated throats.
- E. Conduit Fittings:  
Exposed conduit fittings shall be Condulet type for sharp turns, tees, etc.

## 2.03 OUTLET BOXES

- A. Material, size and installation for outlet boxes shall comply with NEC. Article 370.
- B. Boxes shall be Raco, Steel City, Appleton or equivalent.  
In general, the type of boxes shall be as follows:
1. In stud walls; For single outlet use 4 inches square by 2-1/8 inches deep box. For ganged outlets use 4-1/2 inches high by 1-5/8 inches deep multiple gang boxes. Boxes to be provide with raised covers of depth as required for thickness of wall materials.
  2. In masonry and poured concrete walls; For single outlets requiring two conduit connections in top and/or bottom of box use 4 inches square by 2-1/8 inches deep box with raised square cut cover. For ganged outlets use 3-3/4 inches high by 2-1/2 inches deep multiple gang masonry box.

3. Surface-mounted wall outlets; For single outlet use 2-1/8 inches deep handy box, for double outlets use 4 inches square by 2-1/8 inches deep box. For more than two ganged outlets use 3-3/4 inches x 2-1/2 inches deep multiple gang masonry boxes. Boxes to be provided with 1/2 inch raised cover as required for device.
4. In suspended ceilings; Use 3-1/2 inches deep octagon box with fixture studs and steel mounting bars.
5. Surface outlets installed outdoors or in wet locations; Use Type FS or FD box with weatherproof cover plates for receptacles and switches.

2.04 PULL AND JUNCTION BOXES

- A. Construction, sizes and installation of pull and junction boxes shall comply with NEC, Article 370 and tables 270-6 (a) and (b).
- B. Pull and junction boxes not specifically described in NEC, Article 370, shall be fabricated of heavy gauge galvanized steel with screw covers and enamel finish.
- C. Pull and junction boxes for installation in poured concrete floors shall be flush type, cast iron, with watertight gasketed covers. Boxes for installation in floors with tile or carpet floor covering shall have recessed brass covers and brass carpet flanges to accommodate the floor covering.
- D. Pull and junction boxes for outdoor installations shall be raintight.

2.05 AUXILIARY GUTTERS

- A. Construction, sizes and installation of auxiliary gutters shall comply with NEC, Article 374.

2.06 HANGERS AND SUPPORTS

- A. Provide conduit hanger and support devices of approved type for method of supporting required, to include: structural steel members, suspension rods, conduit clamps, concrete inserts, expansion shields, beam clamps and welding pins. All devices shall have galvanized finish or other approved corrosion resistance finish. All supporting devices shall be manufactured for the purpose. Hangar wire and similar supports shall not be used. In general, hangers and supports shall be as follows:
  1. Where single or multiple run of conduit is routed on surface of structure; use conduit clamps mounted on Unistrut channel so as to maintain not less than 1 inch clearance between conduit and structure.
  2. Where single run of conduit is suspended from overhead; use split ring conduit clamp suspended by steel drop rod not less than 3/8 inch diameter.
  3. Where multiple parallel runs of conduit are suspended from overhead; use split ring conduit clamps uniformly spaced and supported on trapeze hangers fabricated of Unistrut channels, suspended by not less than 1/2 inch steel drop rod.
  4. Where conduit is routed in steel stud partitions, use metal stud clips, style as appropriate for application, equivalent to "Caddy" brand.
  5. Maximum hanger and support spacing shall be in accordance with NEC. Regardless of listed spacing, provide additional hangers or supports at not more than 2'-0" from each change of direction and at each side of any box or fitting.
- B. Hangers and supports shall be anchored to structure as follows:
  1. Hangers and supports anchored to poured concrete; use malleable iron or steel concrete inserts attached to concrete forms.
  2. Hangers or supports anchored to structural steel; use beam clamps and/or steel channels as required by structural system.
  3. Hangers or supports anchored to metal deck; use spring clips or approved welding pins. Maximum permissible load on each hanger shall not exceed 50 pound.

4. The use of explosive force hammer actuated, booster assist or similar anchoring device will not be permitted.

2.07 SURFACE RACEWAYS (DUAL SERVICE - POWER AND DATA):

- A. Basis of Specification: “Legrand”; Wiremold 5400 Series.
- B. Description:
  1. Large capacity, 5-1/4” x 1-11/16” overall dimension.
  2. 2-compartment to separate power from data/low voltage cabling.
  3. Non-metallic, PVC surface raceway.
  4. Overlap raceway base to accept a variety of snap fittings for all components and devices.
  5. Corners to have a 2” bend radius in compliance with TIA/EIA 569-A.
  6. Provide type of devices, jacks and faceplates as appropriate for all services required.
  7. Provide all horizontals, verticals, corners, trims, covers, clips, brackets, caps, plates, fittings, etc. as required for a complete and finished installation.
- C. Finish: White.

2.08 SURFACE RACEWAYS (DUAL SERVICE - POWER AND DATA):

- A. Basis of Specification: “Legrand”; Wiremold 2300D Series.
- B. Description:
  1. Small capacity, 2-1/4” x 11/16” overall dimension.
  2. 2-compartment to separate power from data/low voltage cabling.
  3. Non-metallic, PVC surface raceway.
  4. Over-the-raceway mount boxes for all components and devices.
  5. Corners to have a 2” bend radius in compliance with TIA/EIA 569-A.
  6. Provide type of devices, jacks and faceplates as appropriate for all services required.
  7. Provide all horizontals, verticals, corners, trims, covers, clips, brackets, caps, plates, fittings, etc. as required for a complete and finished installation.
- C. Finish: White.

2.09 SURFACE RACEWAYS (SINGLE SERVICE - POWER OR DATA):

- A. Basis of Specification: “Legrand”; Wiremold 2300 Series.
- B. Description:
  1. Small capacity, 2-1/4” x 11/16” overall dimension.
  2. 1-compartment for single type service cabling.
  3. Non-metallic, PVC surface raceway.
  4. Over-the-raceway mount boxes for all components and devices.
  5. Corners to have a 2” bend radius in compliance with TIA/EIA 569-A.
  6. Provide type of devices, jacks and faceplates as appropriate for all services required.
  7. Provide all horizontals, verticals, corners, trims, covers, clips, brackets, caps, plates, fittings, etc. as required for a complete and finished installation.
- C. Finish: White.



PART 3 - EXECUTION

3.01 CONDUIT INSTALLATION

- A. In general, horizontal runs of conduit shall be installed in ceiling spaces. Conduit for convenience outlets, wall-mounted fixtures and other wall outlets shall be routed overhead and dropped through block cells or stud walls to the outlet. Conduit shall not be installed in or below concrete floor slabs except where noted on drawings or required to serve open floor area outlets or equipment.
- B. Generally, conduit shall be concealed, except in shafts, mechanical equipment rooms, and at connections to surface boxes and free standing equipment, and as otherwise noted.
- C. All conduit shall be routed in lines parallel to building lines.
- D. No conduit shall be installed closer than 6 inches to piping installed by other trades.
- E. Minimum size conduit shall be 1/2 inch trade size. Where specific size is not called for on Drawings or in specification, Contractor shall select size required from Chapter 9 of NEC. Where specific sizes required by Drawings or Specifications are larger than Code requires, the larger size shall be installed.
- F. Install the conduit system mechanically and electrically, continuous from outlet and to cabinets, junction or pull boxes, Conduit shall enter and be secured to cabinets and boxes in such a manner that all parts of the system will have electrical continuity.
- G. Install insulated ground wire in all raceways. Size per NEC 250.

3.02 OUTLET BOX INSTALLATION

- A. Outlet boxes shall be installed for, but not limited to, fixtures, switches, receptacles and other devices.
- B. Approximate location of outlets are shown on the plans, but each location as shown shall be checked by the Contractor before installing the outlet box.
- C. Wall boxes installed flush in common wall shall generally not be back-to-back or through-wall types. Where it is necessary to install boxes back-to-back, install sound absorption material between boxes and plug nipple connection with duct seal.
- D. Boxes located on opposite sides of a common wall that are closely connected by conduit shall have the conduit openings plugged with duct seal.
- E. Outlet boxes shall be installed plumb and square with wall face and with front of box or cover located within 1/8 inch of face of finish wall. Boxes in masonry shall be set with bottom or top of box tight to the masonry unit, unless otherwise specified.

3.03 PULL AND JUNCTION BOX AND GUTTER INSTALLATION

- A. Install pull boxes, junction boxes and auxiliary wiring gutters where required by Code and where required to facilitate installation of the wiring. In longer conduit runs, install a pull box for at least each 100 feet of conduit.
- B. For concealed conduit, install boxes flush with ceiling or wall, with covers accessible and easily removable. Where flush boxes are installed in finished ceilings or walls, provide cover which shall exceed the box face dimensions by a sufficient amount to allow no gap between box and finished material.

- C. Boxes shall not be located in finished, occupied rooms, without prior approval of Architect/Engineer.

3.04 HANGER SUPPORT INSTALLATION

- A. Hangers and supports shall be installed for all conduit and boxes.  
Supports shall be manufactured for the purpose.
- B. Conduit and boxes shall not be attached to or supported from mechanical pipes, plumbing pipes or sheet metal ducts.
- C. Tie wire shall not be used.
- D. Work includes support frames for conduit runs to equipment.

END OF SECTION 26 05 33.13

SECTION 26 05 36 - CABLE TRAY –WIRE MESH

PART 1 – GENERAL

1.01 GENERAL

- A. Provide all required cable tray, splices, connectors, fittings, horizontal bends, hanger rods and clips, channels, miscellaneous supports material and general hardware as required for a complete tray system as shown on the drawings.

1.02 SUBMITTALS

- A. Submit the following:
  - 1. Manufacturer's Literature.
  - 2. Samples, 12" long section.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

- A. Provide products, as approved by the Architect, from one of the following acceptable manufacturers:
  - 1. Cablofil.
  - 2. Bee-line.
  - 3. Chalfant.
  - 4. PW.
  - 5. T.J. Cope.
  - 6. MP Husky.
  - 7. Wiremold.
  - 8. Cooper.

2.02 MATERIALS

- A. Carbon Steel Wire, ASTM A510, Grade 1008, Wire welded, bent and surface treated after manufacturer.
- B. Finish for carbon steel wire after welding and bending of mesh: Zinc plating: ASTM B633, Type III, SC-1.
- C. Cable tray will consist of continuous, rigid, welded steel wire mesh cable management system, to allow continuous ventilation of cables and maximum dissipation of heat, with UL classified splices where tray acts as Equipment Grounding Conductor (EGC). Wire mesh cable tray will have continuous welded top side wire to protect cable insulation and installers.
- D. Provide splices, supports and other fittings necessary for a complete continuously grounded system.
- E. Mesh: 2 x 4 inches (50 x 100 mm).
- F. Straight Section lengths: 10 feet.
- G. Wire Diameter: Patented design includes varying wire sizes to meet application load requirements; to optimize tray strength and allow tray to remain lightweight.
- H. Protective safety edge on side wire to protect cable insulation and installers' hands.
- I. Fittings: Wire mesh cable tray fittings are field-fabricated from straights tray sections, in accordance with manufacturer's instructions and Item C.

- J. Cable Tray Size:
  - 1. Depth: Cable tray depth to be as indicated on the drawings. If not indicated, provide as 4".
  - 2. Width: Cable tray width to be as indicated on the drawings. If not indicated, provide as 12".
  
- K. Cable Tray Supports and Accessories.
  - 1. Ceiling-mounted supports mount to ceiling structure directly or with 1/4", 3/8" or 1/2" threaded rod.
  - 2. Wall-mounted supports.
  - 3. Splices, including those approved for electrical continuity (bonding), as recommended by cable tray manufacturer.
  - 4. Accessories: As required to protect, support, and install a cable tray system.

### PART 3 - EXECUTION

#### 3.01 INSTALLATION

- A. Provide supports at 10' on center maximum.
  
- B. Anchor supports rods to building structural steel using appropriate beam clamps to provide secure mounting.
  
- C. Supports are not to be more than three feet from any tray splice.
  
- D. Brace the tray to prevent swaying.
  
- E. Provide a #6 bare Cu ground conductor full length of tray and bonded to each section of tray. Ground conductor to bond to nearest Cu water pipe.
  
- F. Bolt all sections together using heavy-duty splice plates at least 7" long with a minimum of 6 bolts per splice. Torque all bolts tight per manufacturer's recommendation.
  
- G. All conduits terminating at cable tray shall be securely fastened to cable tray using factory approved clamps.
  
- H. Erect complete system in accordance with manufacturer's instructions.

#### SUBMITTAL CHECK LIST

- 1. Product Data
- 2. Sample

END OF SECTION 26 05 36

SECTION 26 05 83 - WIRING FOR EQUIPMENT

PART 1 - GENERAL

1.01 SCOPE

- A. Provide materials, labor and supervision necessary to install electric services for all equipment.
- B. In general, the equipment to be wired shall include but not limit to the following:
  - 1. Mechanical Equipment
  - 2. Equipment furnished by Owner.
  - 3. Other equipment as required.

PART 2 - PRODUCTS  
NOT USED

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Provide services and make final connections for motors and equipment. Make final connections except where notes on drawings state "rough-in only". Where final connections are not to be made, install outlet box, pull in conductors and leave an 8 inch pigtail for each conductor. Conductors shall be taped and appropriate cover plate installed over box.
- B. Furnish safety disconnects for motors and equipment as needed, so as to make service complete to each item of equipment.
- C. Prior to roughing-in conduit, the Contractor shall consult with Equipment suppliers, and shall verify with them the exact locations for rough-ins, and the exact size and characteristics of the services required, and shall obtain from the Equipment Suppliers a schedule of electrical loads for the equipment furnished by them. These schedules shall be used for verifying services, motor starters, disconnects, fuses and overload protection.
- D. Changes required in the work, due to the Contractor's failure to comply with these requirements, shall be made by the Contractor at no additional cost to the Owner.

END OF SECTION 26 05 83

SECTION 26 09 23 – LIGHTING SENSORS

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment, special tools, supervision and services required to provide and complete all lighting sensor work on this Project as indicated, noted, detailed and scheduled on the drawings and specified herein.
- B. Generally includes the following:
  - 1. Ceiling Sensors.
  - 2. Wall Switch Sensors.
  - 3. Wall Sensors.
  - 4. Power Packs.

1.02 QUALITY ASSURANCE

- A. All components shall be U.L Listed.
- B. All components shall meet all applicable requirements of the NEC and State and local Codes.
- C. All components shall be supplied by a single manufacturer that has been continuously involved in manufacture of lighting sensors for a minimum of (5) years.
- D. All components shall offer a minimum (5) year warranty.

1.03 SUBMITTALS

- A. Product Data:
  - 1. Manufacturer's published catalog data, cutsheets, literature, specifications and installation instructions.
  - 2. Indicate any load restrictions when used with electronic ballasts.
- B. Shop Drawings:
  - 1. Submit lighting plans indicating all sensor locations, types, orientations, etc.
  - 2. Submit any interconnection diagrams per major subsystem showing proper wiring required.

PART 2 - PRODUCTS

2.01 CEILING SENSORS (DUAL TECHNOLOGY-STANDARD RANGE)

- A. Provide one of the following approved products:
  - 1. "Acuity Brands"; Sensorswitch #CM PDT 10.
  - 2. "Watt Stopper"; #DT-300 Series, Standard Extended Range.
  - 3. "Eaton/Greengate"; #OAC-DT-2000.
- B. Description:
  - 1. Generally intended for use in rooms and areas 1,000 s.f. and larger.
  - 2. Shall provide line-of-sight passive infrared (PIR) detection of small motion in a 360 degree circular pattern for detection of mobile occupants within the space and combine overlapping ultrasonic microphonics coverage for detection of occupants within the space either idle or located behind obstructions.
  - 3. Low voltage.
  - 4. Surface mounted to ceiling.

5. Shall not react to noise or ambient sound.

C. Options:

1. Provide "R" Low Voltage Relay. Only one relay required per zone.
2. Provide "D" Occupancy Controlled Dimming for all circuits requiring dimming fixtures. Only one sensor per zone required to have dimming output.

D. Color of device to be White.

2.02 CEILING SENSORS (DUAL TECHNOLOGY-REDUCED RANGE)

A. Provide one of the following approved products:

1. "Acuity Brands"; Sensorswitch #CM PDT 9.
2. "Watt Stopper"; #DT-300 Series, Optional High Density Lens.
3. "Eaton/Greengate"; #OAC-DT-1000.

B. Description:

1. Generally intended for use in rooms and areas less than 1,000 s.f.
2. Shall provide line-of-sight passive infrared (PIR) detection of small motion in a 360 degree circular pattern for detection of mobile occupants within the space and combine overlapping ultrasonic microphonics coverage for detection of occupants within the space either idle or located behind obstructions.
3. Low voltage.
4. Surface mounted to ceiling.
5. Shall not react to noise or ambient sound.

C. Options:

1. Provide "R" Low Voltage Relay. Only one relay required per zone.
2. Provide "D" Occupancy Controlled Dimming for all circuits requiring dimming fixtures. Only one sensor per zone required to have dimming output.

D. Color of device to be White.

2.03 WALL SWITCH SENSORS (DUAL TECHNOLOGY)

A. Provide one of the following approved products:

1. "Acuity Brands"; Sensorswitch #WSX PDT Series.
2. "Acuity Brands"; Sensorswitch #WSD PDT Series.
3. "Watt Stopper"; #DW-100 Series.
4. "Eaton/Greengate"; #ONW-D Series.

B. Description:

1. Shall provide line-of-sight passive infrared (PIR) detection of small motion in a 180 degree semi-circular pattern for detection of mobile occupants within the space and combine overlapping ultrasonic microphonics coverage for detection of occupants within the space either idle or located behind obstructions.
2. Capable for either 120 volt or 277 volt power.
3. Wall mounted within standard single-gang electrical box.
4. Shall not react to noise or ambient sound.
5. Field-selectable operation set per Owner's requirements.
6. Manual override buttons for field selectable option to change sensor operation from automatic sensor ON to manual ON.
7. Audible alert for impending shutoff.
8. Shall be capable of either Wiring To Neutral or Wiring To Ground (No Neutral).

9. Shall be capable of detection at a level 30" a.f.f. up to 300 s.f. and gross motion up to 1,000 s.f.

C. Color of device and wallplate to be selected from manufacturer's entire selection.

2.04 WALL SENSORS (DUAL TECHNOLOGY)

A. Provide one of the following approved products:

1. "Acuity Brands"; Sensorswitch #WVR PDT Series.
2. "Watt Stopper"; #DT-200 Series.

B. Description:

1. Shall provide line-of-sight passive infrared (PIR) detection of small motion in a 120 degree semi-circular pattern for detection of mobile occupants within the space and combine overlapping ultrasonic microphonics coverage for detection of occupants within the space either idle or located behind obstructions.
2. Capable for either 120 volt or 277 volt power.
3. Wall mounted flush to wall, typical.  
If indicated away from wall surface, or requires an angular install, provide swivel mounting bracket.
4. Shall not react to noise or ambient sound.
5. Field-selectable operation set per Owner's requirements.
6. Audible alert for impending shutoff.

C. Color of device to be selected from manufacturer's entire selection.

2.05 SENSORS

A. General:

1. Shall be capable of operating normally with electronic ballasts, PL lamp systems, LED driver systems, and rated motor loads.
2. Shall provide an LED as a visual means of indication at all times to verify that motion is being detected during both testing and normal operation.
3. Shall have UL rated plastic enclosures.

B. Operation:

1. Coverage shall remain constant after sensitivity control has been set. No automatic reduction shall occur in coverage due to the cycling of air conditioning or heating fans.
2. Shall have readily accessible and user adjustable settings for time delay and sensitivity. Settings shall be located on the sensor (not the control unit) and shall be recessed to limit tampering.
3. In the event of failure, a bypass manual override shall be provided on each sensor. When bypass is utilized, lighting shall remain on constantly or control shall divert to a wall switch until sensor is replaced. This control shall be recessed to prevent tampering.
4. Where indicated or where operation is required as intended, sensor shall have an internal additional isolated relay with Normally Open, Normally Closed, and Common outputs for use with HVAC control, Data Logging, BAS connectivity, Daylight Sensor connectivity, and other control options. Sensors utilizing separate components or specially modified units to achieve this function are not acceptable.

2.06 POWER PACKS

A. Description:

1. Self-contained unit consisting internally of an isolated load switching control relay and a transformer to provide low-voltage power.
2. Universal voltage type.
3. Shall be rated for installation within ceiling plenums.
4. Provide units for low temperature or high humidity conditions where applicable.



5. Relay contacts shall be rated as follows:
  - a. 13A or 15A Tungsten @120 VAC.
  - b. 20A Ballast @120 VAC.
  - c. 20A Ballast @277 VAC.
  - d. 1HP Motor @120 VAC.
  - e. 2HP Motor @250 VAC.
  - f. Shall be available for 120, 220, 240, 277, and 347 VAC operation.
- B. Manufacturer:
  1. Manufacturer shall determine the appropriate power pack required for sensor or group of sensors, unless specific packs are selected. In that case, the manufacturer shall verify that the selected packs are applicable and most appropriate for intended installation.
  2. Power packs shall be by the same manufacturer as the sensors, compatible with the sensors selected and provided as a complete and integral system.
- C. Installation:
  1. Provide power pack to serve each sensor or group of sensors as required.
  2. Install concealed above ceiling or in adjacent room or space.
  3. Control wiring between sensors and control units shall be Class II, 18-24 AWG, stranded UL Classified, PVC insulated or Teflon jacketed cable and plenum rated, where applicable.
  4. Minimum acceptable wire gauge from the circuit control hardware relays shall be #14 AWG.

### PART 3 - EXECUTION

#### 3.01 INSTALLATION

- A. It shall be the contractor's responsibility to locate and aim sensors in the correct location required for complete and proper volumetric coverage within the range of coverage(s) of controlled areas per the manufacturer's recommendations.
- B. Rooms shall have ninety (90) to one hundred (100) percent coverage to completely cover the controlled area to accommodate all occupancy habits of single or multiple occupants at any location within the room(s) for the intended use and occupancy.
- C. The locations and quantities of sensors shown on the drawings are diagrammatic and indicate only the rooms which are to be provided with sensors. The contractor shall provide additional sensors if required to properly and completely cover the respective room.
- D. It is the contractor's responsibility to arrange a pre-installation meeting with manufacturer's factory authorized representative, at owner's facility, to verify placement of sensors and installation criteria.
- E. The time delay settings for certain applications or rooms may need to be field adjusted up to the 30 minute time delay. Coordinate this work with the Owner, temperature controls contractor, mechanical contractor, electrical contractor or technology contractor where needed (i.e. restroom exhaust fans etc.).
- F. Proper judgment must be exercised in executing the installation so as to ensure the best possible installation in the available space and to overcome local difficulties due to space limitations or interference of structural components.
- G. The contractor shall also provide, at the Owner's facility, the training necessary to familiarize the Owner's personnel with the operation, use, adjustment, and problem solving diagnosis of the occupancy sensing devices and systems.

SUBMITTAL CHECKLIST

1. Product Data.
2. Shop Drawings.

END OF SECTION 26 09 23

SECTION 26 27 26 - WIRING DEVICES AND PLATES

PART 1 - GENERAL

1.01 SCOPE

- A. Provide materials, equipment, labor and supervision necessary to install Wiring Devices.

1.02 STANDARDS AND CODES

- A. Except where otherwise required by this Section, the following Standards and Codes shall govern:
1. Receptacles; NEC Article 410K
  2. Wall Switches; NEC Article 380
  3. UL listed
  4. NEMA Standards

1.03 QUALIFICATIONS

- A. Provide products, as approved by the Architect, from one of the following manufacturers:
1. "Hubbell".
  2. "General Electric".
  3. "Legrand/Pass & Seymour".
  4. "Lutron".
  5. "Leviton".
  6. "Arrow Hart".

PART 2 - PRODUCTS

2.01 GENERAL

- A. All wiring devices shall be "Specification Grade" except where higher grade is called for.

2.02 SWITCHES

- A. Switches shall be:
1. Single Pole Toggle Light Switch - 20 amp, 120-277 volt, "Hubbell" No. 1221, "Hubbell" No. 1221-L for lock type.
  2. Double Pole Toggle Light Switch - 20 amp, 120-277 volt, "Hubbell" No. 1222, "Hubbell" No. 1222- L for lock type.
  3. Three-Way Toggle Light Switch - 20 amp, 120-277 volt, "Hubbell" No. 1223, "Hubbell" No. 1223- L for lock type.
  4. Four-Way Toggle Light Switch - 20 amp, 120-277 volt, "Hubbell" No. 1224, "Hubbell" No. 1224-L for lock type.
  5. Single pole-double-throw center off light switch - 15 amp, 120-277 volt, "Hubbell" No. 1381.
  6. Momentary Contact Switch - 15 amp, 120-277 volt, "Hubbell" No. 1556, "Hubbell" No. 1556-L for lock type.
  7. Pilot Light Press Switch - 20 amp, 120-277 volt, Single Pole "Hubbell" No. 1297-I, Double Pole "Hubbell" No. NY 1514-I, Three-Way "Hubbell" No. 1298-I.
  8. Color: White

2.03 DIMMER SWITCHES

- A. Dimmer switches shall be:
1. Dimmer switch and ballast controller appropriate for specific lamping type being controlled;

- fluorescent, LED, incandescent, etc.
- 2. Slide type dimming control. No rotary or toggle type controls permitted.
- 3. Separate On/Off preset push or rocker switch permits turning lights on and off without disturbing the dimming light level setting. Switch shall return light to preset dimming level.
- 4. Device to fit standard single gang or multi-gang switch boxes.
- 5. Dual rated for 120/277 volt.
- 6. Shall be approved by the lighting manufacturer for use in conjunction with specified lighting fixtures and dimming ballasts.
- 7. Color: White

2.04 RECEPTACLES

- A. Receptacles shall be:
  - 1. Duplex Receptacle - 2 pole, 3 wire grounding type, back and side wired, 20 amp, 125 volt, "Hubbell" No. 5362.
  - 2. Receptacles for power and special purpose outlets shall have characteristics and NEMA configurations as per Electrical Symbols list. Supply as needed.
  - 3. Color: White

2.05 COVER PLATES

- A. High impact resistant smooth thermal plastic, White
- B. Provide plates for all switches, receptacles, and outlets throughout the entire project. Provide blank plates for all unused outlets.
- C. Plates for outlets in unfinished spaces shall be of the handy box type.

2.06 EXTERIOR RECEPTACLE COVERS

- A. Provide weatherproof "While-In-Use" covers for all exterior receptacles per NEC, Section 406.8(B)(1) for Outdoor Wet Location covers, equal to "Legrand/Pass&Seymour" WIU Series.
- B. Color to be selected from manufacturer's entire selection.

2.07 GROUND FAULT INTERRUPTING RECEPTACLES (GFI)

- A. Ground fault interrupting receptacles shall be duplex feed through type with test and reset buttons, equal to "Legrand/Pass&Seymour" No. 1591F.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Wiring devices shall be installed and located as follows, unless noted otherwise on the Drawings:
  - 1. Switches: 44 inches above finished floors.
  - 2. Receptacles: 16 inches above finished floors typically; 44 inches above finished floors or 8 inches above countertops; 48 inches above finished floors in shops, mechanical rooms, utility rooms, service spaces, and similar areas where required by the NEC.
  - 3. Dimensions are to bottom of outlet box.
- B. In masonry walls, switches and receptacle heights shall be adjusted as required so outlets are at nearest mortar joint to specified height.
- C. Where light switches are located adjacent to doors, they shall be installed on knob side of door, unless indicated otherwise.

- D. Where walls have wainscot finish, switch height shall be adjusted as required, so switch is either all in wainscot or all in wall above wainscot.
- E. Prior to roughing-in outlet boxes, Contractor shall verify from general construction drawings; door swings, type of wall finishes and locations for counters and work benches.

END OF SECTION 26 27 26

SECTION 26 28 16 - DISCONNECT SWITCHES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. The other Contract Documents complement the requirement of this Section. The General Requirements apply to the work of this Section.

1.02 SCOPE

- A. In general, disconnect switches are indicated on the Drawings, and it shall be the Contractor's responsibility to furnish and install all disconnect switches, whether indicated or not, for equipment and motors furnished.
- B. Disconnect switches shall be fused unless otherwise noted. Fuse per nameplate.

1.03 STANDARDS AND CODES

- A. Except where otherwise required by this Section, the following Standards and Codes shall govern:
  - 1. NEC Article 380
  - 2. UL listed
  - 3. NEMA KSI - 1969

1.04 QUALIFICATIONS

- A. Disconnect switches by Square D, Siemens/ITE, General Electric or Cutler-Hammer.

PART 2 - PRODUCTS

2.01 EQUIPMENT

- A. Disconnects for fractional horsepower motors, 1/2-horsepower and smaller, and less than 125 volts, and for equipment of similar capacity and voltage shall be supplied integral with the equipment or shall be a standard snap switch horsepower rated.
- B. Disconnects for fractional horsepower motors larger than 1/2-horsepower and for integral horsepower motors, and for equipment of similar capacity shall be general duty industrial type, with solid neutrals when required.

END OF SECTION 26 28 16

SECTION 26 32 13 – INTERNAL COMBUSTION GENERATORS

PART 1 – GENERAL

- 1.01 Standby generator set shall be installed by Contractor at locations shown on plans and drawings, and as specified herein; with all accessories as required.
- 1.02 All equipment shall be new and of current productions of national firm, who manufactures generator, control panel, transfer panel and assembles standby generator set as a match unit, having service and parts organization within a reasonable distance of this project, backed up by a national sales and service organization.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Kohler
- B. Generac

2.02 ENGINE

- A. Equal to: Generac G007043-2
- B. Operate on natural gas.
- C. Engine shall be air cooled.
- D. Electronic governer
- E. Voltage & Phase: 120/240v, 1-Phase, 3 wire
- F. Size: 22kw

2.03 GENERATOR

- A. Voltage & Phase: 120/240v, 1-Phase, 3 wire
- B. Size: 22kw

2.04 AUTOMATIC TRANSFER SWITCHE

- A. Automatic transfer switches, 1 phase, 60 Hz, 2 pole, with solid neutral for voltage specified herein shall be provided.

PART 3 – EXECUTION

3.01 TESTING

- A. Before shipment, generator set shall be completely tested as follows:
  - 1. 100% load tested for 1 hour (min.) at rated KW continuous.
  - 2. Four repetitive 5 minute cycles of single step application and removal of 100% load.

END OF SECTION 26 32 13

SECTION 26 51 00.01 - LIGHTING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. The other Contract Documents complement the requirements of this Section. The General Requirements apply to the work of this Section.

1.02 SCOPE

- A. Provide lighting fixtures, accessories, labor, and supervision necessary to install a complete Lighting System.

1.03 STANDARDS AND CODES

- A. Except where otherwise required by this Section, the following Standards and Codes shall govern:
  - 1. NEC Article 410.
  - 2. UL listed.

1.04 SUBMITTALS

- A. Submit catalog cuts giving complete description of fixtures to include photometric curves and method of installation.

1.05 QUALIFICATION

- A. The lighting fixtures listed in the fixture schedule are the basis for design. Includes both aesthetic and performance requirements.
- B. Requests for approval for substitutions must be submitted per Section 01630, complete with all supporting data and product information.
- C. Final review for fixtures will be when shop drawings are submitted. The Architect reserves the right to reject and fixtures which, in his opinion, do not meet the overall lighting system design. Upon request, the fixture supplier shall submit sample fixtures.

PART 2 - PRODUCTS

2.01 FIXTURES

- A. Provide fixtures as indicated on drawings.
- B. Recessed fixtures in soffits and solid surface ceilings shall be furnished with trim kits and supports compatible with construction.
- C. See Electrical Drawings and Lighting Fixture Schedule for additional requirements of all fixtures.

2.02 LED FIXTURES

- A. LED Lamps shall have system life rated to retain a minimum of 70% light output at 50,000 hours of use (L70 at 50,000 hours).
- B. LED lamp color temperatures shall be rated at CRI > 80.
- C. If lumens are indicated on fixture schedule, it is the minimum delivered lumens of output required.
- D. If fixture watts are indicated on fixture schedule, it is the maximum nominal input wattage permitted.



- E. Provide adapters as required for depths of construction at each location and condition. Provide correct trim and mounting as required for each location and condition.
- F. Provide lenses in recessed fixtures, as required by code, whether scheduled or not.

### PART 3 - EXECUTION

#### 3.01 INSTALLATION

- A. Install fixtures; coordinate exact location with Architect's Drawings.
- B. Fixtures shall be grounded.  
Lamp sockets shall be wired so that the outer shell is connected to the neutral grounded conductor.
- C. Recessed fixtures in removable ceilings shall be connected to the branch circuit with flexible conduit and branch circuit wire from an accessible junction box. Fluorescent fixtures shall not be used for branch circuits feed-through.
- D. Fixtures recessed in furred ceiling shall be installed so that they can be removed from below the ceiling.
- E. Fixtures installed in plastered or solid ceilings shall not be supported directly from the ceiling. Support fixtures from metal bar hangers, stud framing, or Unistrut channels attached to the structure.
- F. Fixtures installed in acoustical lay-in ceilings shall not be supported directly from ceiling or grid. Support fixtures from metal bar hangers, rods, or cables attached to the structure. Install supports per requirements of the NEC, IBC, and local authorities, but never less than two opposing corners.
- G. Provide unswitched "hot" conductor from same circuit serving lighting in that area to provide continuous power to nightlight emergency lighting and exit lighting, whether shown or not.
- H. Make final connections between fixtures and wiring system.
- I. Replace any lamps which do not operate properly, or which have been used for temporary lighting.

END OF SECTION 26 51 00.01

SECTION 28 31 00 - FIRE DETECTION AND ALARM SYSTEM

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. This specification describes a fire detection and alarm system. The control panel, to be intelligent device addressable, analog detecting, low voltage and modular, with digital communication techniques, in full compliance with all applicable codes and standards.
- B. The Contractor shall furnish a complete system that meets or exceeds the minimum requirements, features and capacities as indicated on the Drawings and specified herein.
- C. The system shall be in full compliance with National and Local Codes and requirements.
- D. The system shall include all required hardware, piping, raceways, interconnecting wiring and software to accomplish the requirements of this specification and the contract drawings, whether or not specifically indicated.
- E. All equipment furnished shall be new and the latest state of the art products of a single manufacturer, engaged in the manufacturing and sale of analog fire detection devices for over ten years.
- F. The system as specified shall be supplied, installed, tested and approved by the local Authority Having Jurisdiction, and turned over to the Owner in a functional and operational condition.
- G. In the interest of job coordination and responsibilities, the Contractor shall contract with a single supplier for fire alarm equipment, engineering, programming, inspection and tests, and shall be capable of providing a "UL Listing Certificate" for the complete system.
- H. Furnish all labor, materials, equipment, special tools, supervision and services required.
- I. All products supplied shall be non-proprietary. Any items that are supplied or installed that are proprietary to a specific system shall be removed and replaced with non-proprietary materials at no additional costs to the Owner.

1.02 DESCRIPTION OF SYSTEM

- A. System shall be fully addressable.
- B. This section includes providing a complete and operative fire alarm system in the project as indicated on the drawings, specified herein and elsewhere required.
- C. System shall consist of control panel, remote annunciator panel, manual stations, fire alarm signals, automatic smoke and heat detectors, fan shutdown relays, conduits, boxes, wire, etc. All electrical work shall conform to applicable sections of these specifications except where specified otherwise.
- D. System shall be actuated by any automatic or manual initiating device, or the kitchen hood system, which shall immediately sound all alarm devices continuously until actuating device is restored to normal and control panel is reset. System shall automatically shut down all air supply and exhaust fans and automatically restart this equipment when the system is returned to normal. Operation of any alarm initiating device shall be indicated on its associated alarm zone and any trouble with the wiring or device shall be indicated as its associated trouble zone.

- E. System shall include an automatic dialer to send a fire alarm signal to an approved alarm receiving facility who shall notify the designated parties of the alarm condition.
- F. System shall be designed for direct-current (DC) and shall be supplied with standby battery supply and automatic battery charging system. System shall be designed for connection to a 120 volt dedicated (AC) circuit.

1.03 APPROVALS

- A. The publications listed below form a part of this publication to the extent referenced. The publications are referenced in the text by the basic destination only. The latest version of each listed publication shall be used as a guide unless the authority having jurisdiction has adopted an earlier version.
  - 1. National Fire Protection Association (NFPA)
    - a. Maintenance of Sprinkler Systems.
    - b. NFPA 70 National Electrical Code.
    - c. NFPA 72, Standard for Installation, Maintenance and use of protective signaling systems.
  - 2. American with Disabilities Act.
  - 3. Underwriters' Laboratories, Inc. (UL)
    - a. UL FPED
    - b. A.D.A. Federal Guidelines
  - 4. State and local building codes as adopted by the Authority having jurisdiction.

1.04 QUALIFICATION OF INSTALLER

- A. Before commencing work, submit data showing that the manufacturer has successfully installed fire alarm systems of the same scope, type and design as specified. The contractor shall include the names and locations of at least two installations where the manufacturer has installed such systems.
  - 1. The Contractor shall submit copies of all required licenses and bond as required in the state having jurisdiction.
  - 2. The installing contractor shall employ on staff a minimum of one NICET level 3 technician or a professional engineer, registered in the State of the project location.

1.05 QUALIFICATION OF MANUFACTURER

- A. Provide the services of a factory trained and certified representative or technician, experienced in the installation and operation of the type of system provided. The representative shall be licensed in the State if required by law. The technician shall supervise installation, software documentation, adjustment, preliminary testing, final testing and certification of the system. The technician shall provide the required instruction to the owner's personnel in the system operation and maintenance.
- B. Contractor shall maintain a factory trained service department with service personnel available on a 24 hour, 7-day per week basis. Provide a 24-hour emergency service number with a maximum telephone response time of 1 hour.
- C. Contractor shall maintain a spare parts inventory of critical function components.
- D. Contractor's personnel shall have a minimum of 2 year's experience in service and maintenance of fire detection, and alarm systems.

1.06 SUBMITTALS

- A. The Contractor shall include, at a minimum, the following information:
  - 1. Power calculations. Battery capacity calculations. Battery size shall be minimum of 125% of the calculated requirement.
  - 2. Supervisory power requirements for all equipment.

3. Alarm power requirements for all equipment.
4. Power supply rating justification showing power requirements for each of the system power supplies. Power supplies shall be sized to furnish the total connected load in a worst-case condition plus 25% spare capacity.
5. Voltage drop calculations for wiring runs demonstrating worst-case condition.
6. Complete manufacturers catalog data including supervisory power usage, alarm power usage, physical dimensions, and finish and mounting requirements.
7. Complete drawings covering the following shall be submitted by the contractor for the proposed system:
  - a) The submittals shall include drawings (in CAD compatible format) showing a schematic arrangement of the system including the main control unit and all peripherals. The drawing shall show the type, quantity and arrangement of all modular components within the control unit and shall indicate overall cabinet dimensions. The drawings shall show explicit details regarding the positioning and placement of all detection system components. The drawing shall also include building floor plans drawn to a minimum scale of 1/8" = 1'-0".
  - b) Floor plans shall show all equipment and raceways, marked for size, conductor count with type and size, showing the percentage of allowable National Electric Code fill used.
  - c) Provide a fire alarm system function matrix as referenced by NFPA 72. Matrix shall illustrate alarm input/out events in association with initiation devices. Matrix summary shall include system supervisory and trouble output functions. Include any and all departures, exceptions, variances or substitutions from these specifications and/or drawings at time of bid.
8. Installation drawings shop drawings, and as-built drawings shall be prepared by an individual who is experienced with the work specified herein.
9. Incomplete submittals shall be returned without review, unless with prior approval of the Engineer.

#### 1.07 INSTALLATION SUPERVISION

##### A. Supervision:

Shall include services of factory trained technicians to supervise installation of systems during construction, to assist in the system start-up and to inspect systems during guarantee period. Make a complete inspection at the end of the guarantee period, and forward signed statement of inspection after all corrections and maintenance items have been completed, to Architect/Engineer. This report will be filed with the project records.

##### B. Testing:

Submit on completed of work, verification of a point-by-point check test indicating the date and time of each item inspected. Issue a certificate conforming that the inspection has been completed and the system is installed and functioning in accordance with the specifications. This report will be filed with project records and in the bound "Maintenance and Operations Manual".

#### 1.08 SERVICE GUARANTEE

- A. Submit satisfactory evidence that there is a fully equipped, local service organization within Seventy-Five (75) miles of the project that is capable of rendering adequate inspection and service to equipment within three (3) hours after notification including standard part replacement. This organization shall be an authorized dealer for the equipment furnished on this project and prepared to offer service contract for maintenance of equipment after guarantee period.

#### 1.09 OPERATION AND MAINTENANCE INSTRUCTIONS

- A. Give complete oral and printed instructions to operating personnel, who will verify to Architect/Engineer that they are fully aware of operation and maintenance of equipment.
- B. Furnish bound copies of "Operation and Maintenance Manual".

- C. Include operation instructions, wiring and schematic diagrams of equipment, one-line diagram of system, complete servicing data, part numbers and voltage charts, and internal wiring diagrams of component equipment.
- D. The fire alarm system contractor or manufacturer shall offer for the owner's consideration and evaluation at the time of system submittal, a priced inspection, maintenance, testing and repair contract in full compliance with the requirements of NFPA 72H.

## PART 2 - PRODUCTS

### 2.01 ACCEPTABLE MANUFACTURERS

- A. Provide a complete system by one of the following manufacturers, or an approved equivalent:
  - 1. "Siemens"
  - 2. "Tyco/Simplex Grinnell"
  - 3. "Edwards/GE Security"
  - 4. "Notifier"

### 2.02 FIRE ALARM CONTROL PANEL (FACP)

- A. Equal to: "Tyco/Simplex Grinnell" #4008-9121.
- B. Control unit shall be semi-recessed in the wall, modular design, dead front construction using solid state electronic components. Alarm initiating shall meet all requirements of NFPA 72A for limited energy applications and function with up to 1500 ohms resistance through alarm initiating devices, contacts and associated wiring. Control panel with annunciator shall be recessed, flush with the finished wall. Enclosing cabinet shall be red in color.
- C. Auto Dialer shall be digital type, dual-telephone line capability, capable of monitoring and reporting up to eight supervised circuits. Unit shall include battery, transformers, enclosure, etc., for a complete functional unit.
- D. Include LCD annunciated circuit-specific character custom labels with LED indicator points visible in front face of cabinet.
- E. Control panel shall contain internal trouble signals with silencing switches, system reset switch, system test switch and shall be supervised so that trouble signal shall indicate in event of loss of either operating or standby power.
- F. Annunciators shall be provided in face of control unit and shall indicate when both operating and standby power circuits are energized.
- G. Trouble signal silencing switches shall be provided one each zone with associated pilot lights so that faults initiating and alarm circuits can indicate trouble and be silenced independently. Trouble signals shall automatically restore to normal condition. Separate pilot lights shall be provided for each signal circuit. Relays used for sounding alarm and trouble signals shall have coils electrically supervised and sound trouble signal in event of open coil.
- H. Alarm Verification:  
System shall include alarm verification for all smoke detectors, that is after a 30 second delay the system automatically resets itself and only sounds an alarm if the same detector initiates an alarm with 60 seconds. This feature shall have no effect on other initiating devices including other smoke detectors.

- I. Control panel shall be furnished with minimum point capacity of 200 initiating devices. Initiating devices shall be any combination of smokes, pull stations, heat detectors, duct detectors, control modules or monitor modules.
- J. Maintenance Alert:  
Control panel shall continuously monitor the sensitivity of each smoke and heat detector and be capable of reporting maintenance conditions when dirty, dusty, faulty or in need of attention.  
Control panel shall make notification via remote dialer.
- K. All pilot and indicating lamps shall be light-emitting diodes (LED) or (LCD) for long life.
- L. Control panel shall be fully addressable.

2.03 FIRE ALARM ANNUNCIATOR PANEL (FAAP)

- A. Equal to: "Tyco/Simplex Grinnell" #4603-9111.
- B. Annunciator shall be remote from the control panel in location as directed by the Architect. Annunciators shall be LCD remote annunciator with the same control functions as the main control panel operator interface. Trim shall be either stainless steel or aluminum, brushed, clear finish.
- C. All pilot and indicating lamps shall be light-emitting diodes (LED) or (LCD) for long life.
- D. Zone alarm signal shall be illuminated whenever associated alarm initiating device is activated and zone trouble signal shall be illuminated whenever associated zone circuit is open or shorted out.
- E. Test switch test all circuit components including lamps.
- F. Reset Switch:  
Shall be necessary to restore alarm initiating device to normal and manually activate system reset switch to extinguish annunciator alarm signal.
- G. Silencing of a trouble signal when fault occurs on any alarm zones shall not prevent resounding of trouble signal in event of subsequent fault condition of other zones, alarm signal circuits, or loss of either source of power.
- H. Wiring Supervision:  
All field wiring connected to alarm initiating devices shall be electrically supervised and single opening or ground shall not cause illumination of any alarm signal.

2.04 STANDBY BATTERY AND CHARGER

- A. Standby battery and charger shall be incorporated in Control Panel and shall be furnished to sound alarms in the event of loss of normal power. Batteries shall have sufficient capacity to sound alarms for five (5) minutes after 24 hour power interruption.
- B. Charger shall use solid-state circuitry and shall be capable of recharging battery fully within 12 hours. Under normal charging, charger shall charge battery at high rate and automatically switch to low maintenance rate charge when battery is fully charged. Charger shall contain both voltmeter and ammeter of 5% accuracy.
- C. Pilot light shall be provided and remain on to indicate 120 volt AC power source. In event of loss of 120 volt AC power, a trouble signal shall sound. An amber signal indicator shall be used to show that trouble signal has been silenced.

- D. Battery charger circuit shall be current limited to prevent damage in event of a short circuit on battery leads.

2.05 MANUAL ALARM STATIONS

- A. Equal to: "Tyco/Simplex Grinnell" #4099-9001.
- B. Manual Alarm Boxes shall be single acting, non-coded, semi-flush mounted, break rod feature, mechanically latched when actuated, and key reset to normal position. Rod shall not be required to maintain normal position. Construction shall be molded modern design, red finish, with instructions in raised white letters.
- C. Provide twenty-five (25) spare glass rods at control panel location.

2.06 VISUAL ALARM DEVICES

- A. Equal to:
  - 1. "Tyco/Simplex Grinnell" True Alert #4906-9204 (Ceiling Type)
  - 2. "Tyco/Simplex Grinnell" True Alert #4906-9201 (Wall Type)
- B. Description:
  - 1. Shall be furnished per the drawings.
  - 2. Multi-candela strobe.
  - 3. Ceiling-mounted or wall-mounted unit as and where indicated.
  - 4. Housing color White, "Fire" lettering Red (Ceiling Type).  
Housing color Red, "Fire" lettering White (Wall Type).
  - 5. Provide candela ratings in compliance with the Code, ADAAG and NFPA 72, 2002.
  - 6. Xenon strobe with a minimum repetition rate of 1 HZ, not exceeding 3 HZ and a maximum duty cycle of 40% with a pulse duration of .2 seconds.
  - 7. Unfiltered or clear filtered white light.
  - 8. Devices shall be synchronized in each line of sight per ADA.
- C. Installation and Requirements:
  - 1. Devices shall be mounted at a height of 80 inches above the highest level of the finish floor or 6 inches below the ceiling, whichever is lower.
  - 2. Devices shall be located no further than 15'-0" from the end of any corridor.
  - 3. Installation heights and locations shall comply with the ADA.

2.07 AUDIBLE/VISIBLE ALARM DEVICES

- A. Equal to:
  - 1. "Tyco/Simplex Grinnell" True Alert #4906-9230 (Ceiling Type)
  - 2. "Tyco/Simplex Grinnell" True Alert #4906-9227 (Wall Type)
- B. Description:
  - 1. Shall be furnished per the drawings.
  - 2. Horn with multi-candela strobe.
  - 3. Ceiling-mounted or wall-mounted unit as and where indicated.
  - 4. Housing color White, "Fire" lettering Red (Ceiling Type).  
Housing color Red, "Fire" lettering White (Wall Type).
  - 5. Provide candela ratings in compliance with the Code, ADAAG and NFPA 72, 2002.
  - 6. Xenon strobe with a minimum repetition rate of 1 HZ, not exceeding 3 HZ and a maximum duty cycle of 40% with a pulse duration of .2 seconds.
  - 7. Unfiltered or clear filtered white light.

8. Devices shall be synchronized in each line of sight per ADA.
9. Provide a minimum of 15 db above ambient sound levels.

C. Installation and Requirements:

1. Devices shall be mounted at a height of 80 inches above the highest level of the finish floor or 6 inches below the ceiling, whichever is lower.
2. Devices shall be located no further than 15'-0" from the end of any corridor.
3. Installation heights and locations shall comply with the ADA.

2.08 SMOKE DETECTORS

- A. Smoke detectors shall be photo-electric type completely solid state with light emitting diode and shall not use any ware filament vacuum tubes.
- B. Duct type smoke detectors shall be provided in all air handling units above 2,000 CFM in the return side and both on the return and supply side in units above 15,000 CFM. Duct type detectors shall be provided with remote indicating pilot lights and test switches, mounted 4'-0" above the floor. Verify exact location with Architect/Engineer.
- C. Ceiling type smoke detectors shall be combination heat and smoke sensing type, provided with indicating pilot light and test switches.
- D. Smoke Detectors which operate electromagnetic door holders, air handling units, roll-down screens, etc. shall be provided with two sets of contacts. One set shall release the door or screen, shut down the air handling unit; the other set shall sound a general fire alarm.
- E. Provide one smoke detector on each side of every door held by electromagnetic door holders, wherever holders are indicated. Provide smoke detectors whether or not they are indicated on the Drawings.
- F. Provide one smoke detector on each side of every smoke damper, wherever smoke dampers are indicated. Provide smoke detectors whether or not they are indicated on the Drawings.
- G. Smoke detectors indicated with audible base shall have capability of two distinct alarm conditions. Upon activation of the smoke detector chamber a supervisory signal shall be annunciated at the fire alarm panel. Upon thermistor and smoke detector activation a general alarm condition shall be sounded.
- H. Smoke detector audible bases shall contain a mini horn capable of 85 dB at 10 feet.

2.09 HEAT DETECTORS

- A. Heat detectors shall be ceiling mounted employing two independent methods of detection.
- B. All units shall be combination units detecting a fixed temperature rating of 135 degrees F (57 degrees C) and a rate-of-rise of 15 degrees F (8.3 degrees C) per minute spaced a maximum of 50 ft. on center.
- C. Fixed temperature units shall detect a fixed temperature rating of 190 degrees F (88 degrees C) spaced a maximum of 15 ft on center. Install in mechanical rooms, kitchens and cooking spaces.

2.10 PROTECTIVE GUARDS AND COVERS

- A. Shall be clear, tamperproof, UV stabilized polycarbonate shield and frame specially designed to custom fit the specific fire alarm devices they protect. Shields to be slotted for all types of audible devices.
- B. If allowed by the Architect, chrome plated heavy wire guards may be used in lieu of polycarbonate shields.



- C. In areas where to be installed, install on all manual alarm stations, alarm signals, smoke detectors, heat detectors, etc.
- D. Areas of installation to include all spaces prone to impact on a regular basis such as gymnasiums, mechanical rooms, custodial rooms, storage rooms and similar spaces.

### PART 3 - EXECUTION

#### 3.01 DESIGN AND INSTALLATION DRAWINGS

- A. Show a general layout of the complete system including equipment arrangement. It shall be the responsibility of the fire alarm contractor to verify dimensions and assure compatibility all other systems interfacing with the fire alarm system.
  - 1. Identify on the drawings, conduit and conductor sizes and types with number of conductors in each conduit. Provide each conduit and device with a unique identification for addressable alarm initiation devices, the system identifier shall be the system address for that device.
  - 2. Indicate on the point to point wiring diagrams, interconnecting wiring within the panel between modules and connecting wiring to the field device terminals.

#### 3.02 DEMOLITION

- A. Contractor shall remove all the existing system components. All components, devices and wiring installed shall be new.
- B. Contractor shall coordinate the work so that the Fire Alarm System, either new or existing, is in full operation while building is occupied by the public.
- C. Should it become necessary to make the existing Fire Alarm Systems inoperative, ample notification shall be given to the Owner, and the Architect/Engineer. Architect/Engineer will issue additional written instructions that are to be provided at this Contractor's expense.
- D. All existing fire alarm equipment shall remain the property of the Owner and shall be stored off-site by the Contractor at a central location where directed by the Owner.

#### 3.03 WIRING

- A. Fire alarm system wiring shall be installed with open plenum fire coded cable. Install wire neatly with bridal rings along walls. Maximum spacing 5'-0". Wire shall be of the size and type as recommended by system manufacturer but not smaller than #14 AWG. Wire shall be color coded throughout and tagged at each box and in the equipment cabinet for identification.

#### 3.04 IDENTIFICATION

- A. Fire alarm wiring in equipment cabinets shall be terminated on marked terminal strips. Tag wiring at both ends to correspond with wiring diagram. Arrange wire neatly in cabinets and lace with nylon cable straps. Cable terminations shall be arranged so that sections of the system may be isolated for servicing.

#### 3.05 END OF LINE RESISTORS

- A. End of Line Resistors shall be in separate outlet box in mechanical, electrical or storage space or above the corridor ceiling. Mark and locate on system drawings.

#### 3.06 CONNECTIONS

In addition to the alarm devices specified here, other connections to the fire alarm system shall include but not limited to, the following:

- A. From the fire alarm control panel, provide a connection to each manual alarm station, to each audio and visual alarm device and to each automatic detection device.
- B. From the fire alarm control panel, provide connection to each fan motor controller.
- C. From the fire alarm control panel, provide a connection to each kitchen hood system.
- D. From the fire alarm control panel, provide a connection to the automatic dialer to the telephone terminal board.
- E. From the fire alarm control panel, provide a connection to each electromagnetic door holder and access control power supplies and connection equipment.
- F. From the fire alarm control panel, provide connection to each automatic fire sprinkler system device; Including but not limited to: riser flow, riser tamper, PIV, pit valves, zone valves, etc.

3.07 INSTALLATION

- A. Perform work in accordance with the requirements of NEC, NFPA 70 and NFPA 72.
- B. New devices can be surface mounted on existing walls.

3.08 CERTIFICATE OF COMPLIANCE

- A. Complete and submit to the Project Architect in accordance with NFPA 72, paragraph 2.2.2.

3.09 CLEANING

- A. Vacuum clean inside of all boxes, cabinets and equipment when work is complete.

SUBMITTAL CHECKLIST

- 1. Manufacturer's catalog data cut sheets.
- 2. Complete full size installation drawings.
- 3. Power calculations.

END OF SECTION 28 31 00