Project Manual
Project Number: 19-064

Duneland School Corporation
2020 Door Renovation at: Chesterton Middle School and Bailly Elementary School

For

Board of School Trustees
Duneland School Corporation
601 West Morgan Avenue
Chesterton, Indiana 46304

Issued for Bid and Permit: February 5, 2020

ARCHITECTURE

West Suburban Office: 901 McClintock Drive, Suite 100, Burr Ridge, Illinois 60527
South Suburban Office: 1820 Ridge Road, Suite 209, Homewood, Illinois 60430
Indiana Office: 436 Sand Creek Drive N, Suite 105, Chesterton, Indiana 46304
Company Main: 630.455.4500 Fax: 630.455.4040
www.TriaArchitecture.com

TABLE OF CONTENTS

DIVISION 0 – BIDDING REQUIREMENTS, CONTRACTOR FORMS AND CONDITIONS OF THE CONTRACT

DIVISION 1 – GENERAL REQUIREMENTS

DIVISION 2 – SITEWORK

DIVISION 3 – CONCRETE

TABLE OF CONTENTS

TABLE OF CONTENTS

SECTION 00030

NOTICE TO BIDDERS

ADVERTISEMENT FOR BIDS

1.1 BID INFORMATION

A. Notice is hereby given that sealed bids will be received by the Board of School Trustees of the Duneland School Corporation on February 19, 2020 until 10:30 a.m. CST (local time) for the: 2020 Door Renovations at: Chesterton Middle School and Bailly Elementary School. Bids will be opened and publicly read aloud at the Duneland School Corporation Administration Office, 601 West Morgan Avenue, Chesterton, Indiana 46304.

B. A Non-Mandatory Pre-Bid Conference will be held on February 12, 2020 at 10:30 a.m. CST (local time) at the Duneland School Corporation Administration Office, 601 West Morgan Avenue, Chesterton, Indiana 46304.

C. All Bidders are required to attend and sign in at the meeting, which will also be attended by the Owner and Architect. A walk-through of the school will immediately follow the pre-bid meeting.

D. Anticipated Award of Contract date: March 3, 2020

E. Anticipated Start of Construction: June 1, 2020

F. Anticipated Substantial Completion date: August 7, 2020

G. Lump sum bid proposals will be received for this project at the scheduled time. Bids received after this time shall be returned unopened.

H. Bid security in the form of a bid bond or certified check in an amount equal to 10 percent of the base bid amount shall be submitted with the bid. Should a bid bond be submitted, the bid bond shall be payable to the Duneland School Corporation.

I. Bids shall be submitted on or before the specified closing time in an opaque sealed envelope addressed to: Mr. Greg Lindy, Director of Support Services, 601 W. Morgan Avenue, Chesterton, IN 46304, ATTENTION: 2020 Door Renovations at: Chesterton Middle School and Bailly Elementary School - BID.

J. The Board of School Trustees of the Duneland School Corporation reserves the right to reject any or all bids or parts thereof, or to waive any irregularities or informalities, and to make the award in the best interest of the Duneland School Corporation. No bid shall be withdrawn for a period of sixty (60) days after the scheduled bid opening date.

K. All bidders must comply with all Board of School Trustees local policies as outlined in the bidding documents.

L. The Architect for the above referenced project is Tria Architecture, Inc., (630) 455-4500.

M. Bidding documents will be available starting on February 5, 2020 and may be obtained upon receipt of deposit in the amount of $100 for 1 set of the bidding documents consisting of 2 sets of plans, 2 Project Manuals, 1 Compact Disc containing PDF files of drawings and project manual, and 1 set of bid forms from: GRI Gill Reprographics, Inc. 17W715 Butterfield Road, Suite B, Oakbrook Terrace, IL 60181, (630) 652-0800, www.gillrepro.com , chicagoorders@gillrepro.com. If only digital files of bidding documents are requested, a one time non-refundable fee of $15.00 (payment made out to Gill Reprographics, Inc) can be paid. Login information to obtain files will be provided to download digital files.

Board of School Trustees of the Duneland School Corporation
601 Wes Morgan Avenue
Chesterton, Indiana 46304

END OF SECTION

SECTION 00100

INSTRUCTIONS TO BIDDERS

PART 1 – GENERAL

1.1 **PROPOSAL**

A. The Board of School Trustees of the Duneland School Corporation will receive sealed bids for the 2020 Door Renovations at: Chesterton Middle School and Bailly Elementary School.

B. To receive full consideration bids must contain the following documents properly completed and signed:
   1. Bid Form.
   2. Bid Bond.
   3. Addendum to Contract for Construction.
   4. Certification Regarding Investment Activities in Iran.
   5. Contractor's Bid for Public Work - Form 96.
   6. Responsible Bidder Form.
   7. Fully completed AIA document A305 providing the Contractor's qualifications and references.

1.2 PREPARATION FOR BIDS

A. Proposals to be entitled for consideration must be made in accordance with the following instructions.
   1. Submit one copy of bid on forms provided by the Architect with all blank spaces for bid prices filled in, in ink, or typewritten.
   2. Submit one reproduction of bid forms and associated documents.
   3. Submit bid in an opaque, sealed envelope, addressed to: Mr. Greg Lindy, Director of Support Services, 601 West Morgan Avenue, Chesterton, Indiana 46304.
      a. Mark the envelope ATTENTION: 2020 Door Renovations at: Chesterton Middle School and Bailly Elementary School - BID.
   4. Sealed Bids will be received until 10:30 a.m. CST (local time), on February 19, 2020 for all specified work at Duneland School Corporation Administration Office, 601 West Morgan Avenue, Chesterton Indiana 46304.
   5. Bids received after this time shall be returned unopened.
   6. Erasures or written memorandum on the Bid Form are prohibited. Include additional explanations, statements, or qualifications in a separate sheet attached to the Bid Form.
   7. The Base Bid shall appear only where called for in the Bid Form and shall not appear elsewhere in the proposal. Any Alternate prices (other than those set forth in the Bid Form) shall be listed on the Substitution Sheet.
   8. Fill in all blank spaces for the bid items with prices, or if not applicable, the words "No Bid."

B. The Owner reserves the right to reject any or all bids or parts thereof at its sole discretion.

C. The Owner reserves the right to waive any or all irregularities or informalities.

D. The Owner reserves the right to terminate this request for bids at any time in the bidding process.

E. All costs associated with developing or submitting a bid in response to this request, or to obtain oral or written clarification of its content shall be borne by the respondent. The Owner and Architect, and their agents, assume no responsibility for these costs. This request for bids does not commit the Owner or Architect, or any of their agents, to pay any costs incurred in the preparation or submission of a bid.

F. Do not detach Bid Proposal Forms from the Project Manual for use in submission of bids; use separate forms furnished by the Architect.

G. Telegraphic bids will not be accepted, but modifications by telegram of bids already submitted will be considered if received prior to the scheduled closing time for receiving bids.

1.3 DEFINITIONS

A. All definitions set forth in the General Conditions of the Contract for Construction as printed in AIA Document A201 as modified and included herewith are applicable to these Instructions to Bidders.

B. Bidding Documents include the Advertisement to Bid, Instructions to Bidders, the Bid Proposal Form and required attachments, AIA Document A101 Standard Form of Agreement Between Owner and Contractor where the Basis of Payment is a Stipulated Sum, 2007 edition, including General Conditions as modified for this project, AIA Document A305, and the proposed Contract Documents including any addendum issued prior to receipt of bids.
C. Addenda are written or graphic instruments issued prior to the execution of the Contract which modify or interpret the bidding documents, including Drawings and Specifications, by additions, clarifications, or corrections. Addenda will become part of the Contract Documents when the Construction Contract is executed.
   1. Addenda will be issued by Email, FAX transmittal, direct mail or United Parcel delivery. Bidders are to consider all addenda, regardless of method of transmittal, as a binding modification to the contract documents.
   2. It is the bidder's responsibility to ascertain from the Architect that they have received all addenda issued to the bidding documents prior to submitting their bids.

1.4 DOCUMENTS

A. The Bidding Documents are on file and may be examined at Gill Reprographics, Inc. (GRI), 17W715 Butterfield Road, Suite B, Oak Brook Terrace, IL 60181, (630) 652-0800, www.gillrepro.com.
B. General Contractors may obtain (1) set of the Bidding Documents, consisting of (2) sets of drawings, (2) project manuals, (1) Compact Disc containing PDF files of the drawings and the project manual, and (1) set of bid forms at Gill Reprographics, Inc. (GRI), 17W715 Butterfield Road, Suite B, Oak Brook Terrace, IL 60181, (630) 652-0800, www.gillrepro.com, upon deposit of a check in the amount of $100.00 made payable to the Duneland School Corporation. Deposit is refundable if a bid is submitted and if drawings are returned in good condition by March 13, 2020, as well as to the winning bidder.
C. **If only digital files of bidding documents are requested, a one time non-refundable fee of $15.00 (payment made out to Gill Reprographics, Inc.) can be paid. Login information to obtain files will be provided by Gill Reprographics, Inc. to download digital files**.
D. Contractors may obtain additional sets of plans and specifications directly from the Printer. Contractor shall be responsible for the reproduction costs. Amounts paid for additional sets are not refundable.
E. All documents furnished for bidding purposes (including Compact Disc), obtained by deposit or purchase MUST BE RETURNED to the Printer, transportation prepaid, within ten days after opening of the Bids or deposit checks will not be returned.

1.5 EXAMINATION OF DOCUMENTS AND SITE

A. Bidders are responsible for examining all documents on file at the office of the Printer or Owner and must make a mandatory site visit to examine the site to become familiar with and make allowance for any conditions which may affect the work. Contractors will not be given extra payments for conditions which can be determined by examining the site and documents.
B. A non-mandatory Pre-Bid Conference will be held on February 12, 2020, 10:30 a.m. at the Duneland School Corporation Administration Office, 601 West Morgan Avenue, Chesterton, Indiana 46304.
C. All Bidders are required to attend and sign in at the conference which will also be attended by the Owner, the Architect, and the Engineer. There will be a walk-through immediately following the pre-bid meeting at the school. The Architect will transmit to prospective bidders of record any Addenda the Architect considers necessary in response to questions arising at the conference.

1.6 POST-BID QUALIFICATION

A. Any bidder may be required to submit supporting data to substantiate that such bidder is properly qualified to carry out the obligations of the Contract and to complete the Work contemplated therein.

1.7 BID WITHDRAWAL

A. Any bidder may withdraw their bid prior to the scheduled closing time for receiving bids. All bidders shall hold their Bids open for a period of sixty calendar days from the date of Bid Opening. The Owner and Bidders may agree to extend the period of irrevocability beyond the sixty-day period.

1.8 INTERPRETATION OF BIDDING DOCUMENTS

A. Submit all questions regarding the Bidding Documents to the Architect. Replies will be issued to all bidders of record in the form of an Addendum. Questions received less than five days before the bid opening date cannot be answered.

1.9 NON-SPECIFIED ITEMS

A. Approved Equal Items:
   1. To obtain approval to use non-specified items, submit written request at least five days prior to the opening date; requests received after this time will NOT be considered.
   2. Requests shall clearly describe the items for which approval is asked including all data necessary to demonstrate acceptability.
   3. If an item is acceptable, the Architect will approve same in an Addendum issued to all bidders of record.

B. Substitutions:
   1. Substitutions for the items specified may be made by the Contractor only by submitting proposed substitutions on the Substitution Sheet provided.
   2. Requests received after bid opening will not be considered except for the following conditions:
      a. Product discontinued.
      b. Insufficient quantity. Except the following will not establish cause for substitution:
         1) Failure to award subcontract in sufficient time, or failure to place orders for products so as to ensure delivery without delaying work.
      c. Delays beyond control, such as strikes, lockouts, storms, fires, or acts of God, which may preclude the procurement and delivery of products for purposes of the Project.

C. No consideration will be given to substitutions after the Contractor submits the Schedule of Values.

1.10 METHOD OF AWARD

A. If the Owner should award a Contract, the Owner will award it to the lowest responsible bonafide Bidder with full consideration given to Contractor's Completion Schedule.

B. In determining the lowest responsible bona fide Bidder and in awarding a contract, the Owner may take into consideration skill, facilities, capacity, experience, ability, responsibility, previous work, financial standing of bidder, amount of work being carried on by bidder, quality and efficiency of construction equipment proposed to be furnished, period of time within which proposed equipment is furnished and delivered, and necessity of prompt and efficient completion of work herein described.

1.11 PROPOSAL REQUIREMENTS

A. Bidder's proposals shall be expressly based on the following items:
   1. Instructions to Bidders.
   2. Bid Proposal Form.
   3. General Conditions.
   4. Plans and Specifications.
   5. Addenda

B. Any Contract resulting from the Bidding Documents will incorporate the terms and provisions of said documents. It is intended that these Bidding Documents shall prevail over conflicting terms and conditions of Contractor's proposal. Bidder's printed terms and conditions are NOT considered as exceptions to the Contract.

1.12 BID SECURITY

A. Accompany bids with a Bid Bond, Certified Check or Bank Draft for an amount of Ten Percent of the Base Bid as a guarantee that, if award is made, the bidder will sign the agreement and furnish the required bonds within five days or forfeit his bid security as liquidated damages, but not as a penalty. Execute Bid Bond on A.I.A. Form A-310, current edition or on form furnished by the Architect.
   1. Make Bid Security payable to: Duneland School Corporation.

B. Where a bid bond is given as the bid security, the bid bond must comply with the rating level required for the performance and payment bond as stated in section 11.4 of the AIA document A201 included in specification section 00700.

C. The bid security of all except the three lowest bidders will be returned within five days after the award of the Contract.

D. The bid security of the successful bidder and the two other bidders will be returned promptly after the Owner and the accepted bidder have executed the agreement, and the appropriate bonds and certificates of insurance have been provided by the successful bidder. Bid security of the other Contractor's will be returned promptly after agreement is finalized.

1.13 PERFORMANCE ASSURANCE

A. Accepted Bidder: Provide a Performance and Labor and Material/Payment bond.
   1. Provide a 100 percent Performance Bond on AIA A312.
   2. Provide a 100 percent Payment Bond on AIA 312.
   3. Deliver bonds within 3 days after execution of the Contract.

1.14 OTHER CERTIFICATIONS AND SUBMITTALS

A. All bidders must complete and sign the following certifications and submit them with their bid proposals. FAILURE TO DO SO MAY RESULT IN DISQUALIFICATION OF BIDDER.
   1. Addendum to Contract for Construction.
   2. Certification Regarding Investment Activities in Iran.
   3. Contractor’s Bid for Public Work - Form 96.
   4. Responsible Bidder Form.
   5. Fully completed AIA document A305 providing the Contractor’s qualifications and references.

1.15 POWER OF ATTORNEY

A. Attorneys-in-Fact who sign bonds, Agreements or bids must file with each such document a certified and effectively-dated copy of their Power of Attorney.

1.16 EMPLOYMENT AND LABOR PROVISIONS

A. The Contractor must comply with all Board of School Trustees local policies as outlined in the bidding documents. See Document 00820 – Duneland School Corporation Responsible Bidder Form.

B. Vendors/Contractors must conform to all federal, state, local and OSHA Regulations now in effect.

C. The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin.

END OF SECTION

SECTION 00300

BID FORM

THE PROJECT AND THE PARTIES

1.1 NAME OF BIDDER: _____

1.2 TO: MR. GREG LINDY, DIRECTOR OF SUPPORT SERVICES
DUNELAND SCHOOL CORPORATION
601 WEST MORGAN AVENUE
CHESTERTON, INDIANA 46304

A. We as contractor having familiarized ourselves with local conditions affecting the work and with the proposed Contract Documents on file at the office of the Owner, hereby propose to perform everything required to be performed and to provide all of the labor, materials, necessary equipment and all utilities and transportation and services necessary to perform and complete in a workmanlike manner all work required to complete the proposed work indicated in the bidding documents for the construction of the 2020 Door Renovations at: Chesterton Middle School and Bailly Elementary School, all in accordance with the Drawings and Specifications prepared by the office of Tria Architecture, Inc. including Addenda No. _____, _____ and _____ issued thereto for the sum of:

1. Base Bid for all Work at Chesterton Middle School:

   _____

   _____

   ($ ___ ___ ___ , ___ ___ ___ , ___ ___ ___ . ___ ___)

2. The base bid consists of all Work specified and required by the proposed Contract Documents.

B. Alternate Bids: The undersigned hereby states the net amount of increase or decrease to the Lump Sum Base Bid for the following Alternates as described in Section 01230.

ALTERNATE NO. 1: **Provide laminated glass (E-2) at Chesterton Middle School**

ADDED from the Lump Sum $_____.

ALTERNATE NO. 2: **All work at Bailly Elementary School**

ADDED from the Lump Sum $_____.

ALTERNATE NO. 3: **Provide Laminated Glass (E-2) at Bailly Elementary School**

ADDED from the Lump Sum $_____.

C. Accompanying this proposal is a Bid Security payable to the Duneland School Corporation, which is agreed will be forfeited to the aforementioned as liquidated damages if the undersigned fails to execute the standard form of Owner/Contractor Agreement (AIA Document A101, 2007 Edition, as modified), which is included herein, and furnish evidence of their ability to become bonded and to provide insurance coverage as specified, within five days after notification of the Intent to Award Contract to the undersigned.

D. In signing and submitting this Bid, the undersigned certifies that all materials and construction to be provided are as indicated in the proposed Contract Documents.

E. Time of Completion: If awarded the Contract, the bidder agrees to complete all Construction Work and achieve Substantial Completion by August 7, 2020, 5:00 p.m. NOTE: Substantial Completion for this project refers to all work being a minimum of 99% complete. Final Completion for this project refers to all scheduled work, punch-list and closeout items being 100% complete.

F. The space below of the desired Substantial Completion Date has been left blank for insertion of Contractor's own desired Substantial Completion Date, if he feels that the desired date as stated in the specifications cannot be met. Insertion of a date by the bidder does not change the specified Substantial Completion Date unless the Owner chooses to accept the bidder's date when awarding the contract.
   1. Specified Substantial Completion Date: August 7, 2020, 5:00 p.m.
   2. Contractor's Desired Substantial Completion Date: _____.

G. Base Bid Breakdown: For the purpose of logical comparison of orders of magnitude in the bids, the Owner requires a global breakdown of the components of the base bid. Contractors are required to provide this breakdown. Failure to do so will subject the bid to rejection. The sum of the following items must equal the Lump Sum Base Bid.

BREAKDOWN:

Division 01:	General Requirements – Allowances:	$ _____
Division 01:	General Requirements – O&P:	$ _____
Division 01:	General Requirements – Remaining Items:	$ _____
Division 02:	Sitework:	$ _____
	Subcontractor (Legal Name, Address):	_____
Division 03:	Concrete:	$ _____
	Subcontractor (Legal Name, Address):	_____
Division 04:	Masonry:	$ _____
	Subcontractor (Legal Name, Address):	_____
Division 06:	Wood and Plastic:	$ _____
	Subcontractor (Legal Name, Address):	_____
Division 07:	Thermal and Moisture Protection:	$ _____
	Subcontractor (Legal Name, Address):	_____
Division 08:	Doors and Windows:	$ _____
	Subcontractor (Legal Name, Address):	_____

SECTION 00300

BID FORM

Division 09: Finishes: $ _____

Subcontractor (Legal Name, Address): _____

_____

Miscellaneous Any items not identified above: $ _____

Subcontractor (Legal Name, Address): _____

_____

TOTAL (Should equal base bid): $ _____

FIRM NAME: _____

OFFICIAL ADDRESS: _____

Telephone Number: _____ Fax Number: _____

Email Address: _____

By: _____ Date: _____
(Signature)

_____
(Printed/Typed Name and Title)

Where the Bidder is a corporation, add Attest

_____ (SEAL)
Secretary (signature) Date

CERTIFIED OR CASHIERS CHECK, BID BOND, OR BANK DRAFT ENCLOSED IN THE FOLLOWING AMOUNT: $_____.

END OF BID FORM

SECTION 00410

BID BOND

1.1 BID BOND INFORMATION

A. KNOW ALL MEN BY THESE PRESENTS, THAT WE _____ as Principal, hereinafter called the Principal, and _____ a corporation duly organized under the laws of the State of Indiana as Surety, are held and firmly bound unto _____ as Obligee, hereinafter called Obligee, in the sum of _____ Dollars ($_____), for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

B. WHEREAS, the Principal has submitted a bid for: 2020 Door Renovations at: Chesterton Middle School and Bailly Elementary School.

C. NOW, THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a Contract with the Obligee in accordance with the terms of such bid, and give such bond or bonds as may be specified in the bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or in the event of the failure of the Principal to enter such Contract and give such bond or bonds, if the Principal shall pay to the Obligee the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the Obligee 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.

D. The bid bond must comply with the rating level required for the performance and payment bond as stated in section 11.4 of AIA document A201.

Signed and sealed this _____ day of _____.

_____
(Principal) (SEAL)

_____ _____
(Witness) (Title)

_____
(Surety) (SEAL)

_____ _____
(Witness) (Title)

SECTION 00440

SUBSTITUTION SHEET

1.1 SUBSTITUTION INFORMATION

A. All bids shall be based upon the provisions of the proposed Contract Documents.

B. Bidders desiring to make substitutions for "proprietary brands" specified shall list such proposed substitutions below, together with the amount to be added or deducted from the amounts of their base bids.

C. The Owner reserves the right to reject all such substitutions, and such substitutions will not be used to determine the low bid.

D. Complete descriptions and technical data shall accompany all proposed substitutions.

E. NOTE: Manufacturer's names and material approved by the Architect during the bidding time, but not shown in Addenda, must be listed below if said material is to be considered.

F.	BRAND/MAKE SPECIFED	PROPOSED	ADD	DEDUCT
1.	_____			
2.	_____			
3.	_____			
4.	_____			
5.	_____			
6.	_____			
7.	_____			
8.	_____			
9.	_____			
10.	_____			
11.	_____			

NAME OF BIDDER: _____

DATE: _____.

END OF SECTION

SECTION 00495

ADDENDUM TO CONTRACT FOR CONSTRUCTION

This following Addendum to THE Contract for Construction is made by _____ ("contractor") and the Duneland School Corporation ("School Corporation") this ___ day of _____, _____..

The contractor is party to a Contract for Construction with the School Corporation ("Agreement").

The contractor states that it is in compliance with the requirements of Indiana Code 22-5-1.7-11 in that it uses the E-Verify program, as such is defined by Ind. Code 22-5-1.7-3, as such may be amended from time to time, or that it is no longer required to verify the work eligibility status of all newly hired employees if the E-Verify program no longer exists.

Attached to this Addendum is an Affidavit signed on behalf of the contractor and executed in accordance with Ind. Code 22-5-1.7-11(b).

This Addendum is intended to supplement the Agreement between the School Corporation and the contractor, whether oral or in writing.

CONTRACTOR

By: _____

Its: _____

SECTION 00495

ADDENDUM TO CONTRACT FOR CONSTRUCTION

STATE OF INDIANA)
)
COUNTY OF _____)

AFFIDAVIT

The undersigned, being duly sworn upon his oath, does state as follows:

1. He/she is _____ (specify position) of _____ ("contractor") and has personal knowledge of the facts set forth in this Affidavit.

2. The contractor provides services to the Duneland School Corporation.

3. The contractor does not knowingly employ any unauthorized aliens, as such term is defined by Indiana Code 22-5-1.7-9.

4. This Affidavit is made for the purpose of complying with the requirements of Indiana Code 22-5-1.7 et seq.

Dated this ___ day of _____, _____.

Further Affiant sayeth not.

_____

I affirm, under the penalties for perjury, that the foregoing representations are true to the best of my knowledge and belief.

_____

SECTION 00496

CERTIFICATION REGARDING INVESTMENT ACTIVITIES IN IRAN

The CONTRACTOR certifies to the Duneland School Corporation ("OWNER"), as a condition of its contract with the School Corporation that CONTRACTOR is not engaged in investment activities in Iran. Pursuant to Ind. Code §5-22-16.5-8, a firm is considered to be engaging in investment activities with Iran if: (1) it has provided goods or services of Twenty Million Dollars ($20,000,000.00) or more in value in the energy section of Iran, including oil or liquefied natural gas; or (2) has extended Twenty Million Dollars ($20,000,000.00) or more in credit to another party, for 45 days or more, if that other party will use the credit to provide goods or services in the energy section in Iran and is, at the time credit is extended, identified on the list developed by the State of Indiana of parties it has determined to be engaged in investment activities in Iran. Be advised that the CONTRACTOR is not listed on the list published and/or endorsed by the State of Indiana pursuant to Ind. Code §5-22-16.5-9 as a company engaged in investment activities with Iran.

Dated this _____ day of _____, 20____.

CONTRACTOR:

By: _____

Its: _____

SECTION 00497

CONTRACTOR'S BID FOR PUBLIC WORK – FORM 96

CONTRACTOR'S BID FOR PUBLIC WORK - FORM 96

State Form 52414 (R2/2-13) / Form 9B (Revised 2013)
Prescribed by State Board of Accounts

PART I
(To be completed for all bids. Please type or print)

Date *(month, day, year):* _____

1. Governmental Unit (Owner): _____

2. County: _____

3. Bidder (Firm):_____

   Address: _____

   City/State/ZIP code: _____

4. Telephone Number: _____

5. 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 _____
(Governmental Unit) in accordance with plans and specifications prepared by _____

_____ and dated _____ for the sum of

_____$_____

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. Any addendums attached will be specifically referenced at the applicable page.

If additional units of material included in the contract are needed, the cost of units must be the same as that shown in the original contract if accepted by the governmental unit. If the bid is to be awarded on a unit basis, the itemization of the units shall be shown on a separate attachment.

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 1he contract.

SECTION 00497

CONTRACTOR'S BID FOR PUBLIC WORK – FORM 96

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. 5-16-6-2). 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.

ACCEPTANCE

The above bid is accepted this _____ day of _____, _____, subject to the following conditions: _____
_____

Contracting Authority Members:

_____ _____

_____ _____

_____ _____

PART II
(For projects of $150,000 or more - IC 36-1-12-4)

Governmental Unit: _____

Bidder (Firm): _____

Date *(month, day, year):* _____

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?

Contract Amount	Class of Work	Completion Date	Name and Address of Owner

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

Contract Amount	Class of Work	Expected Completion Date	Name and Address of Owner

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. (Examples could include a narrative of when you could begin work, complete the project, number of workers, etc. and any other information which you believe would enable the governmental unit to consider your bid.)

_____

_____

_____

_____

_____

2. Please list the names and addresses of all subcontractors (i.e. persons or firms outside your own firm who have performed part of the work) 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.

_____

_____

_____

_____

_____

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.

   _____

   _____

   _____

   _____

   _____

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.

   _____

   _____

   _____

   _____

   _____

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.

   _____

   _____

   _____

   _____

   _____

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 CONTRACTOR'S 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 include 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 00497

CONTRACTOR'S BID FOR PUBLIC WORK – FORM 96

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 _____, _____

_____
(Name of Organization)

By _____

_____
(Title of Person Signing)

ACKNOWLEDGEMENT

STATE OF _____)
) ss
COUNTYOF_____)

Before me, a Notary Public, personally appeared the above-named _____ and swore that the statements contained in the foregoing document are true and correct.

Subscribed and swom to before me this _____day of _____, _____.

_____
Notary Public

My Commission Expires: _____

County of Residence: _____

SECTION 00497

CONTRACTOR'S BID FOR PUBLIC WORK – FORM 96

Part of State Form 52414 (R2/2-13) / Form 96 (Revised 2013)

BID OF

_____

(Contractor)

_____

(Address)

FOR

PUBLIC WORKS PROJECTS

OF

_____

_____

_____

Filed

_____

Action taken

_____

_____

SECTION 00700

GENERAL CONDITIONS

FORM OF GENERAL CONDITIONS

1.1 AIA Document A201, General Conditions of the Contract for Construction, 2017 Edition, attached, is the General Conditions between the Owner and Contractor.

1.2 AIA Document A101-Exhibit A, Insurance and Bonds, 2017 Edition, attached, is the Insurance and Bonds requirements, for the Owner and Contractor, for the project.

1.3 A Letter of Intent to Award a Construction Contract will be issued to the approved contractor upon approval of the Owner. This Letter of Intent shall serve as the Notice to proceed and the Contract for Construction, with all the terms and conditions referenced in the contract documents, until the contract, referenced above, has been fully executed. The awarded contractor shall begin all construction services as specified upon receipt of this Letter of Intent.

END OF SECTION

DRAFT

AIA® Document A201™ – 2017

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)

Duneland School Corporation - General »
« »

THE OWNER:
(Name, legal status and address)

«Duneland School Corporation »« »
«601 West Morgan Avenue
Chesterton, Indiana 46304 »

THE ARCHITECT:
(Name, legal status and address)

« «Tria Architecture, Inc.»« »
«901 McClintock Drive, Suite 100
Burr Ridge, Illinois 60527»

TABLE OF ARTICLES

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

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

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

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INDEX
(Topics and numbers in bold are Section headings.)

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,~~ consist of the Invitation to Bid, Instruction to Bidders, Bid Form, Agreement between Owner and Contractor (hereinafter the Agreement), Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Schedules, 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~~ of the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, ~~or (4)~~ (4) an Architect's Supplemental Instruction, or 5) 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.~~

§ 1.1.2 THE OWNER

The term "Owner" shall refer to the Duneland School Corporation, which shall also be referred to as the "School Corporation."

§ 1.1.3 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.

§ 1.1.4 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.

§ 1.1.5 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.

§ 1.1.6 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. Figured dimensions shall be followed in preference to measurements by scale. All dimensions shall be checked against field measurements of existing conditions to be taken by the Contractor.

§ 1.1.7 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.

§ 1.1.8 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.

§ 1.1.9 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.

§ 1.1.10 The term "Contractor" as used herein shall refer to the Contractor or Construction Manager at Risk.

1.1.10. MISCELLANEOUS DEFINITIONS

1.1.10.1 The term "Fabricated" as used throughout the Contract Documents is hereby defined to mean items specifically assembled or made of selected materials or components to meet individual design requirements.

1.1.10.2 The term "Furnish" as used throughout the Contract Documents is hereby defined to mean materials or items to be furnished.

1.1.10.3 The term "Install" as used throughout the Contract Documents is hereby defined to mean materials or items furnished by other trades shall be installed only. Such materials or items shall be received at the site, unloaded, stored, protected, and installed in place, including connections, auxiliary items, and other work required for a complete and functioning installation, unless any such work is specifically excluded.

1.1.10.4 The term "Provide" as used throughout the Contract Documents is hereby defined to mean "furnish and install."

1.1.10.5 The phrase "Shop Fabricated" or "Shop Made" as used throughout the Contract Documents is hereby defined as items made by a contractor or subcontractor in their own Shop.

1.1.10.6 The words "Contractor shall" are implied and shall be so understood wherever a direction or instruction is stated in the imperative sense.

§ 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.~~ Contractor and items reasonably inferable therefrom. 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.~~all.

§ 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.

§ 1.2.1.1 Where conflicts exist within or between parts of the Contract Documents, or between the Contract Documents and applicable standards, codes and ordinances, the more stringent, or higher quality or greater quantity requirements shall apply. Large-scale drawings take precedence over small-scale drawings, figured dimensions over scaled dimensions and noted materials over graphic representations.

§ 1.2.1.2 The specifications are of the abbreviated type and may include incomplete sentences. Omissions of phrases such as "The Contractor shall" or "conforming to the requirements of" is intentional; omitted words or phrases shall be supplied by inference in the same manner as they are when a "note" occurs on the drawings. Words in singular shall include a plural whenever applicable, or the context so indicates.

§ 1.2.1.3 Large-scale drawings take precedence over small-scale drawings, figured dimensions over scaled dimensions and noted materials over graphic representations.

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

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

§ 1.2.3.1 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 General Conditions of the Contract for Construction, 4) Drawings and Specifications.

§ 1.2.3.2 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.

§ 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. The descriptive headings of this Agreement are inserted for convenience only and shall not control or affect the meaning or construction of any provisions following them.

§ 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~~Information and Services Required of Owner

§ 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.~~All other permits and fees shall be obtained and paid for by the Contractor under the Contract Documents. The Contractor shall be responsible to obtain all temporary permits including, but not limited to, demolition and canopy permits required to execute the Work

§ 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~~ Permits and fees are the responsibility of the Contractor under 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**~~
§ 2.2.2.2 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.

§ 2.2.2.3 If the employment of the Architect terminates, the Owner shall employ a successor whose status under the Contract Documents shall be that of the Architect.

§ 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.~~ **Surveys.** 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.

§ 2.3.2 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.~~ 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.

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

~~§ 2.3.4 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. This right shall be in addition to and not in restriction or derogation of Owner's rights under Article 14 hereof.

§ 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~~ seven-day (7) 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,~~ may immediately, 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~~ In such case, an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor, the cost of correcting such deficiencies, including ~~Owner's expenses and~~ but not limited to, attorney's fees, compensation for the Architect's additional services ~~made necessary by such default, neglect, or failure. If current and future payments~~ and expenses incurred in connection with such default, neglect or failure. Said Change Order shall be deemed signed by the Contract for the purposes stated in Section 7.2.1 even if the Contractor fails to physically sign such Change Order. If payments then or thereafter due the Contractor 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.~~ at the Owner's option, the excess shall be deducted from any payment thereafter due or shall be paid by the Contractor immediately upon demand of the Owner. This right shall be in addition to and not in restriction or derogation of the Owner's rights under Article 14 hereof.

§ 2.6 ADDITIONAL RIGHTS

The rights stated in Article 2 shall be in addition and not in limitation of any other rights of the Owner granted in the Contract Documents or at law or in equity.

ARTICLE 3 CONTRACTOR

§ 3.1 General

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

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

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

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

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

§ 3.2.1.1 It shall be the duty of the Contractor to verify all dimensions given on the Drawings, and to report any error or inconsistency to the Architect before commencing Work.

§ 3.2.1.2 If the Contractor finds any details, construction procedures or materials shown on the Drawings or called for in the Specifications which the Contractor believes may not be satisfactory for the use shown, the Contractor shall so notify the Architect at least five (5) days before bids are due. Signing of the Agreement and starting the Work by the Contractor shall indicate the Contractor agreement with all details, construction procedures, and materials so shown and/or specified and shall indicate the Contractor's willingness to construct the Project in strict accordance with the Contract Documents and to guarantee the Project in full compliance with the warranty provisions of the Contract Documents. By executing this Agreement, the Contractor further acknowledges that it has satisfied itself as to the nature and location of the Work, the general and local conditions under which the Work is to be performed, including those bearing upon transportation, disposal, handling and storage of materials availability of labor, water, electric power, roads and uncertainties of weather, ground water table or similar physical conditions of the ground, the character, quality and quantity of surface and subsurface materials to be encountered, the character of equipment and facilities needed prior to and during the prosecution of the Work, and all other matters which can in any way affect the Work or the cost thereof . Any failure by the Contractor to become acquainted with all the available information concerning these conditions will not relieve the Contractor from any obligations with respect to the Contract Documents.

§ 3.2.1.3 If Work is required in a manner that makes it impossible to produce the quality required by the Contract Documents, or should discrepancies appear among the Contract Documents, the Contractor shall request in writing an interpretation from the Architect before proceeding with the Work. The Contractor shall perform the work at no additional cost to the Owner in accordance with the Architect's determination.

§ 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~~ The Contractor shall promptly report to the Owner and the Architect any 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.~~Documents. The Contractor shall not be liable to the Owner or Architect for damage resulting from errors, inconsistencies, or omissions in the Contract Documents unless the Contractor recognized or should have recognized such error, inconsistency, or omission, and failed to report it to the Architect, in which case the Contractor shall not be entitled to an increase in the Contract Sum or Contract Time and the Contractor shall bear all attributable costs for correction. The Contractor agrees to release and hold harmless the Owner for errors, inconsistencies or omissions in the Contract Document which should have been discovered by the Contractor.

§ 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.~~

§ 3.2.2.1 The exactness of grades, elevations, dimensions, existing conditions, or locations given on any drawings issued by the Architect or the work installed by other contractors, is not guaranteed by the Architect or Owner.

§ 3.2.2.2 The Contractor shall, therefore, satisfy himself as to the accuracy of all grades, elevations, existing conditions, dimensions and locations. In all cases of interconnection of the Contractor's work with existing or other work, the Contractor shall verify at the site all dimensions relating to such existing or other work. Any errors due to the Contractor's failure to so verify all such grades, elevations, existing conditions, locations or dimensions shall be promptly rectified by him without extra cost to the Owner.

§ 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,~~ 3.2.2, 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 obligations in Sections 3.2.2, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, ~~inconsistencies~~ inconsistencies, or omissions in the Contract ~~Documents,~~ Documents or 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.~~ unless the Contractor recognized or should have recognized the error, inconsistency, omission, or difference and failed to report it.

§ 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. The Contractor shall review any construction or installation procedure (including those recommended by any product manufacturer). The Contractor shall provide written notice to the Architect:

(a) If a specified product deviates from good construction practices.
(b) If following the Specifications will affect any warranties.
(c) Any objections which the Contractor may have to the Specifications.

The responsibilities imposed on the Contractor by this Section shall be in addition to, and not be limited by, any and all other provisions of these Contract Documents.

§ 3.3.2 The Contractor shall engage workmen who are skilled in performing the Work and all Work shall be performed with care and skill and in a good workmanlike manner under the full-time supervision of the approved superintendent described in Section 3.9.3. The Contractor shall be liable for all property damage including repairs or replacement of the Work and economic losses which proximately result from the breach of this duty. The Contractor shall be responsible to the Owner for the acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and any other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its ~~Subcontractors.~~
Subcontractors or claiming by, through or under the Contractor, and for any damages, losses, costs, and expenses resulting from such acts or omissions.

§ 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.

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

§ 3.3.5 The Contractor shall coordinate all portions of the work with separate Owner-employed contractors, if any.

§ 3.3.6 The Contractor shall assign a competent, technically-trained office project manager to the Project who shall perform all office functions including checking, approving and coordinating shop drawings and approving purchasing and disbursement pay-out requests and correspondence, and responding to Owner inquiries.

§ 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 written consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive. By making requests for substitutions hereunder, the Contractor:

.1 represents that the Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;

.2 represents that the Contractor will provide the same warranty for the substitution that the Contractor would for that specified;

.3 certifies that the cost data presented is complete and includes all related costs under this Contract except the Architect's redesign costs, and waives all claims for additional costs related to the substitution which subsequently become apparent; and

.4 will coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.

§ 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. The Contractor shall be responsible for any damages to property or injuries to persons, or to any other harm, caused by the Contractor's employees.

§ 3.4.4 After the Agreement has been executed, the Owner and the Architect will consider a formal request for the substitution of products in place of those specified only under the conditions set forth in Section 7.5.

§ 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.~~ new, unless otherwise required or permitted by the Contract Documents and that the Work will be free from faults and defects and in conformance with the Contract Documents. The warranty will not be affected by the specification of any product or procedure, unless the Contractor objects promptly to such product or procedure and advises the Architect of possible substitute products or procedures which will not affect the warranty. This warranty shall not be restricted by the limitations of any manufacturer's warranty. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective in the Owner's sole discretion. Inability or refusal of the Subcontractor or supplier responsible for the defective work to correct such work shall not excuse the Contractor from performing under the warranty. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 Unless an alternative guaranty is specified in a particular division of the Specifications that is longer in duration than one (1) year, the Work shall be guaranteed by the Contractor against defect in material and workmanship for a period of one (1) year from the date of final completion (date of issuance of final payment to the contractor).

§ 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.~~ The Contractor shall secure all permits, licenses and inspections necessary for proper execution and completion of the Work ~~that~~ which are customarily secured after execution of the Contract and ~~legally required at the time bids are received or negotiations concluded.~~ which are legally required when bids are received.

§ 3.7.1.1 All cash deposits, bonds, fees, inspections, licenses, or permit fees shall be paid for by the Contractor.

§ 3.7.1.2 Prior to submission of all applications for permits, licenses or inspections the Contractor shall submit a copy of the application or written notice to the Owner for approval.

§ 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 observes or believes that portions of the Contract Documents are at variance with applicable laws, statutes, ordinances, building codes, and rules and regulations, the Contractor shall promptly notify the Architect and Owner in writing for clarification by the Architect. If the Contractor performs Work knowing it to be contrary to any 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~~ cost, damages, losses and expenses 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.~~ disturbed.. 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. The site conditions contemplated by this Section include, but are not limited to, materials containing asbestos, polychlorinated biphenyl (PCB), or hazardous materials as defined in the Contract Documents.

§ 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~~ competent, English speaking 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. Important communications by the superintendent shall be confirmed in writing. Other communications by the superintendent shall be similarly confirmed on written request in each case. Failure of the superintendent to supervise the job properly shall be deemed as a default by the Contractor under the Contract Documents as determined by the Owner with the advice of the Architect.

~~**§ 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.~~and Architect's written consent..

§ 3.9.4 The Contractor's superintendent must be dedicated solely to the Project and must be at the Project site each day and at all times that Work is being performed at the site, whether the Work is performed by the Contractor's own forces or by any subcontractors. The superintendent must be at the Project site from the first day of on-site activities until a minimum of fourteen (14) days after the date of Substantial Completion. Failure by the Contractor to provide full-time on-site supervision shall constitute grounds for termination of the Contract Documents by the Owner with seven days written notice.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the ~~Contract, shall~~ Project, shall prepare and 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~~ review its Construction Schedule for the Work of the Contractor. Such Construction Schedule shall not exceed the completion dates, delivery dates or time limits required in the Contract Documents. The Construction Schedule

shall be revised by the Contractor at appropriate intervals as required by the conditions of the Work ~~and Project.~~and Project, and shall provide for expeditious execution of the Work.

§ 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.~~Contractor shall prepare and keep current, for the Architect's record only, a schedule of submittals (the "Submittal Schedule") which is coordinated with the Contractor's Construction Schedule and allows the Architect reasonable time, as indicated in the Contract Documents, to review submittals. Neither the Contractor's preparation of the Submittal Schedule nor the Architect's receipt or review shall modify the Contractor's responsibility to make required submittals or to do so in a timely manner to provide for review in accordance with Section 4.2.7 as modified herein.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect. The Owner's or Architect's failure to object to a submitted schedule that exceeds time limits current under the Contract Documents shall not relieve the Contractor of its obligations to meet those limits, nor shall it make the Owner or Architect liable for any of the Contractor's damages incurred as a result of increased construction time or not meeting those time limits. Similarly, the Architect's or Owner's failure to object to a Contractor's schedule showing performance in advance of such time limits shall not create or infer any rights in favor of the Contractor for performance in advance of such time limits.

§ 3.10.4 At the time of each Application for Payment, the Contractor shall provide to the Owner and the Architect an update on the Project schedule and a written status report, which includes a description of the progress of the Work and if progress is behind schedule, the Contractor's plan to recover the Work to meet the approved Construction Schedule. The report shall also include a summary of the Contractor's meetings with subcontractors.

§ 3.10.5 The Contractor shall hold meetings at least weekly (or at such intervals as are otherwise acceptable to the Owner and Architect) at the site. The Contractor shall provide the subcontractors, Architect and the Owner with a meeting schedule. The Contractor shall require subcontractors currently working at the site(s) to have a representative present for such meetings.

§ 3.10.6 Within twenty-one (21) days of the award of the Project, the Contractor shall provide a written report to the Architect and the Owner that includes a list of the Contractor's suppliers, a list of materials and equipment to be purchased from suppliers and fabricators, the time required for fabrication, and the scheduled delivery dates for materials and equipment. Copies of the Contractor's purchase orders shall be delivered to the Architect and the Owner as soon as possible after receipt by the Contractor.

§ 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,~~ maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and ~~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~~ one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These, along with all operating manuals for all equipment, shall be available to the Architect at all times and delivered to the Architect for submittal to the Owner ~~upon completion of the Work as a record of the Work as constructed.~~after completion of the Work but before the final Application for Payment.

§ 3.11.1 The Contractor shall maintain at the site(s) one set of record drawings for the Owner and Architect of the as built plans and specifications for concealed work, particularly concealed piping and conduit. Any deviations from conditions shown on the Contract Drawings shall be shown and dimensioned on these record drawings. The Contractor shall develop layout drawings for concealed work that is schematically indicated on Contract Drawings in

order to have dimensioned layouts of such concealed work. This requirement does not authorize any deviations without approval of the Architect.

§ 3.11.1.1 The field information in the record drawings to be so marked shall include at a minimum:

(1) Significant deviations of any nature made during construction;

(2) Location of underground mechanical and electrical services, utilities, and appurtenances, referenced to permanent surface improvements.

(3) Location of mechanical and electrical services, utilities, and appurtenances that are concealed in the building, referenced to accessible features of the building.

§ 3.11.2 The Contractor and their Subcontractors shall maintain at the site(s) an accurate record of deviations and changes from the Contract Documents which occur in the work; shall indicate all such deviations and changes on reproducible transparencies of the Contract Documents; and shall turn over to the Architect upon completion of the work all such documents and information, such as final shop drawings and sketches, marked prints and similar data indicating the as-built conditions. Plumbing, HVAC and Electrical Contractors shall record all changes or deviations in their work from what appears on the Contract Documents. The electronic AutoCAD base plan backgrounds shall be furnished by the Architect. The cost of recording and transferring the changes or deviations to the transparencies shall be included in the contract price for the respective work. The as-built transparencies shall be delivered by the Contractor to the Architect prior to the final acceptance of the Project and issuance of final payment.

§ 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.~~

§ 3.12.10.1. When professional certification or performance criteria of materials, systems or equipment is required by the Contract Documents, the Contractor shall provide the person or party providing the certification with full information of the relevant performance requirements and on the conditions under which the materials, systems, or equipment will be expected to operate at the Project site. The certification shall be based on performance under the operating conditions at the Project site. The Architect shall be entitled to rely on the accuracy and completeness of such certifications.

§ 3.12.10.2 ~~If~~ When 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.

§ 3.13.1 Only material and equipment which is to be used directly in the construction of this Project shall be brought to and stored on the job site by the Contractor. After equipment is no longer needed on this Project, it shall be promptly removed from the job site. Protection of all construction materials and equipment stored at the Job Site is the sole responsibility of the Contractor.

§ 3.13.2 The Contractor and its Subcontractors, and their respective employees, agents, and consultants, shall not enter any part or portion of the building work sites when students are present without the Owner's written authorization.

§ 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 prior written consent of the Owner and of the Separate ~~Contractor. Consent~~ Contractor such 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.~~ Contractor's consent shall not be required.

§ 3.14.3 Only tradespersons skilled and experienced in cutting and patching shall perform such 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. The Contractor shall remove and clean up hazardous materials in accordance with these General Conditions.

§ 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.

§ 3.15.3 All exterior and interior Work shall be cleaned using specific materials as recommended for surfaces to be cleaned. Damage to any surfaces due to improper cleaning methods of materials shall be repaired to the satisfaction of the Architect and Owner, by the Contractor, at no cost to the Owner.

§ 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, including, but not limited to, attorney's fees, 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.~~ Architect, except to the extent of Contractor's fault. 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,~~ waives any right of contribution against and shall defend, indemnify and hold harmless Owner, any Owner's Representative, the Architect and each of their officers, directors, board members, officials, agents, consultants and employees from and against all claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from or in connection with the 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~~ any such claim, damage, loss or expense (these are collectively referred to as "claims") is caused by or alleged to be caused by an act or omission of Contractor, any 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~~ any of them or anyone for whose acts any of them may be liable in the performance of the Agreement, regardless of whether or not it 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~~ otherwise reduce any other right or obligation of indemnity or contribution which would otherwise exist as to any party or person described in this ~~Section 3.18.~~ Contract. The obligations of the Contractor under this Section 3.18.1 shall be construed to include, but not be limited to, injury or damage consequent upon failure to use or misuse by the Contractor, his agents, Sub-Contractors, and employees of any scaffold, hoist, crane, stay, ladder, support, or other mechanical contrivance erected or constructed by any person, or any or all other kinds of equipment, whether or not owned or furnished by the Owner.

§ 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.~~ The Contractor shall, and hereby covenants and agrees to indemnify, defend, save and hold harmless the following indemnitees: The Owner, its Architects, Board Members, Officers, Agents, and Employees, individually and collectively, from all claims, demands, actions and the like, of every nature and description, made or instituted, by Third Parties, arising or alleged to arise out of the work under this contract, as a result of any act or omission of either the Contractor or any Subcontractor, or any of their employees or agents. Contractor and Subcontractor shall name the Owner, its Architects, Board Members, Officers, Agents and Employees, individually and collectively, as additional insured as primary coverage without limitation on their general liability policies. Contractor and Subcontractor/s shall furnish Owner with copies of such policies prior to beginning any work.

§ 3.18.3 "Claims, damages, loses and expenses" as these words are used in this Contract shall be construed to include, but not be limited to (1) injury or damage consequent upon the failure of or use or misuse by Contractor, its Subcontractors, agents, servants or employees, of any hoist, rigging, blocking, scaffolding, or any and all other kinds of items of equipment, whether or not the same be owned, furnished or loaned by Owner; (2) all attorneys' fees and costs incurred in defense of the claim or in bringing an action to enforce the provision of this Indemnity or any other indemnity contained in the Contract Documents; and (3) all costs, expenses, lost time, opportunity costs, etc. incurred by the party being indemnified or its employees, agents or consultants.

§ 3.18.4 In the event that any party is requested but refuses to honor the indemnity obligations hereunder, then the party indemnifying shall, in addition to all other obligations, pay the cost of bringing any such action, including attorneys' fees, time expended by the party being indemnified and their employees in the defense of any litigation covered by this indemnity provision at their usual rates plus cost of travel, long distance telephone calls and reproduction of documents to the party requesting indemnity.

§ 3.18.5 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. The Contractor hereby knowingly and intentionally waives the right to assert that Contractor's liability may be limited to the amount of its statutory liability under the Workers' Compensation Act, and agrees that Contractor's liability to indemnify and defend the Owner and Architect is not so limited. The Contractor shall include this provision in each of its Subcontract agreements and shall require its Subcontractors to be so bound.

§ 3.18.6 Contractor shall include in each and every contract with any and all subcontractors and/or material suppliers performing Work and require each and every subcontractor and/or material supplier performing Work to agree to be bound by all of the provisions 3.18.1 through 3.18.9 under the Contract Documents.

§ 3.18.7 Contractor's indemnity obligations hereunder shall, but not by way of limitation, specifically include all claims and judgments which may be made against the indemnitees under federal or state law or the law of the other

governmental bodies having jurisdiction, and further, against claims and judgments arising from violation of public ordinances and requirements of governing authorities due to Contractor's or Contractor's employees method of execution of the Work.

§ 3.18.9 The Contractor shall indemnify and hold harmless the Owner in the event of labor or trade union conflicts or disputes between the Contractor and subcontractors and their respective employees. The Contractor shall endeavor to adjust and resolve such conflicts and disputes which affect the timely completion of the Work. Such conflicts or disputes shall not be a basis or excuse for the violation of the Contract Documents by the Contractor or its subcontractors, and shall not provide the Contractor with relief from meeting all time limits for Substantial Completion or Final Completion. Labor or trade union disputes that effect production or delivery of materials or equipment, or their installation, shall be at no cost to the Owner. The Contractor shall notify the Architect and the Owner in writing as soon as possible as to any labor or trade disputes which may affect the Work and its timely completion. In such event, the Contractor shall provide a written proposal to the Architect and the Owner which includes any comparable substitution(s) necessary to complete the Work.

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

§ 3.19 If the work is to be performed by trade unions, the Contractor shall make all necessary arrangements to reconcile, without delay, damage, or cost to the Owner, the Architect or the Owner, any conflict between the Contract Documents and any agreements or regulations of any kind at any time in force among members or councils which regulate or distinguish what activities shall not be included in the work of any particular trade. In case the progress of the work is affected by any undue delay in furnishing or installing any items or materials or equipment required under the Contract Documents because of the conflict involving any such agreement or regulation, the Architect may require that other material or equipment of equal kind and quality be provided at no additional cost to the Owner.

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.

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect whose status under the Contract Documents shall be that of the Architect.

§ 4.1.4 The Architect's and its consultants' services will terminate sixty (60) days after (1) the date of Substantial Completion of the Work or (2) the anticipated date of Substantial Completion identified in the Contract Documents, whichever is earlier. Any services required of the Architect and its consultants after this date will be back-charged to the Contractor by the Owner.

§ 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,~~ as agreed to by Owner and Architect 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~~ Work to endeavor to determine that the Work, when completed, will be in accordance with the Contract ~~Documents.~~ Documents, and to endeavor to guard the Owner against defects and deficiencies in the Work. However, the Architect will not be required to make exhaustive or continuous on-site

inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the ~~portion of the~~ Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols. However, this Section shall not be deemed to prohibit direct communication between the Owner and the Architect.

§ 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. The Contractor shall provide to the Architect (1) mechanics lien waivers, (2) certified payroll statements and documentation as may be requested and (3) sworn statements listing subcontractors and materialmen before issuing Payment Certificates, and if such sworn statement or waivers are not provided, the Architect's Certificates shall be conditioned upon and subject to the receipt of such waivers.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Any Work rejected by the Architect shall be reported promptly to the Owner in writing 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. The Contractor shall give submittals to the Architect in a manner to allow for the Architect's reasonable prompt review and to allow for timely ordering of components of the Work to affect no delay in the Work.

§ 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~~ Section 9.10; however, the issuance of such final Certificate of Payment shall not bind the Owner to any payment unless it accepts such final Certificate for Payment. The Owner's acceptance shall not be unreasonably withheld. Additionally, the Architect shall review all warranties and related documents and provide a recommendation to the Owner as to whether the warranties comply with the Contract Documents.

§ 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 initially 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. If the Contractor submits such written request to the Architect, the Contractor will simultaneously provide a copy of such request to the Owner. The Architect will consult with the Owner regarding any request by the Contractor before responding to the Contractor.

§ 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. The Architect will provide the Owner with a copy of any response provided pursuant to this Section.

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~~ Prior to executing the Contract, the Contractor shall furnish in writing to notify the Owner through the Architect the names 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.~~

§ 5.2.1.1 In addition to the information which may be required prior to the award of the Project, not later than twenty-one (21) days after Notice of Award of the Project, the Contractor shall furnish to the Owner through the

Architect the names of persons or entities proposed as manufacturers for each of the products identified in the General Requirements and, where applicable, the name of the installing Subcontractor.

§ 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~~ an objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection. All contracts between the Contractor and subcontractors shall be made in writing, shall be assignable to the Owner, and shall contain the following sentence, 'The Owner is an intended third-party beneficiary of this Subcontract.'

§ 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.~~objection No additional costs shall be allowed for a change required due to an objection by the Owner, Contractor, or Architect

§ 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.~~without written approval of the Owner. The Contractor further acknowledges and agrees that after award of the Project to the Contractor, any savings on changes to contracts with subcontractors or substitute subcontractors will be for the benefit of the Owner and will not be used for the benefit of the Contractor or to increase the Contractor's profit on the Project. The foregoing benefit to the Owner shall include any adjustment in the amount of the price of a contract to less than the quoted price of the subcontractor upon which the Contractor's fixed bid price or Contract Sum was based. Further, if a manufacturer or supplier of any machinery or equipment, including, but not limited to, heating and air conditioning units or systems, changes specifications or offers incentives, discounts or lower prices after award of the Contract to the Contractor, those savings will inure to the benefit of the Owner and not the Contractor, subcontractor, manufacturer or supplier.

§ 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.

§ 5.3.1 The Contractor shall be responsible for any and all Subcontractors working under him and shall carry insurance for all Subcontractors or ensure that they are carrying it for themselves so as to relieve the Owner, Architect and Architect's Consultants of any and all liability.

§ 5.3.2 The Owner and Architect assume no responsibility for overlapping or omission of parts of the Work by various Subcontractors in their Contracts with the Contractor.

§ 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.~~Intentionally Deleted.

§ 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.~~
subrogation, without altering the Owner's Agreement with the Contractor.

§ 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.

§ 7.1.4 For any changes in the Work requested by the Contractor involving more than a three (3) calendar day extension of time, the Contractor shall submit critical path schedule showing the original schedule and impact of the proposed change justifying the requested extension of time. The Owner may at its option refuse the extension of time and have the Contractor perform the Work within the original schedule provided all reasonable costs for completing the Work including overtime and acceleration costs are included in the Change Order.

§ 7.1.5 If a proposal for additional work is requested by the Owner from the Contractor which involves additional time, at the Owner's option, the Owner may extend the completion date for that portion of the Work included in the change, without extending the Contract Time for the remainder of the Work.

§ 7.1.6 Changes which involve credits to the Contract Sum shall include overhead, profit, general conditions, and bond and insurance costs.

§ 7.1.7 For any adjustments to the Contract Sum based on other than the unit price method, overhead, profit, and General Conditions combined shall be calculated at the following percentages of the cost attributable to the change in the Work:

.1 For the Contractor for Work performed by the Contractor's own forces, ten percent of the Cost .

.2 For the Contractor, for Work performed by the Contractor's Subcontractors five percent of the amount due the Subcontractor.

.3 For each Subcontractor or Sub-subcontractor involved, for Work performed by that Subcontractor's or Sub-subcontractor's own forces, ten percent of the Cost.

.4 For each Subcontractor, for Work performed by the Subcontractor's Sub-subcontractors, five percent of the amount due the Sub-subcontractor.

.5 Costs to which overhead, profit, and general conditions is to be applied shall be determined in accordance with Sub-Sections 7.3.7.1 through 7.3.7.5.

.6 When both additions and credits are involved in any one change, the allowance for overhead and profit shall be figured on the basis of the net increase, if any;

§ 7.1.8 In order to facilitate checking of quotations for extras or credits, all proposals shall be accompanied by:

.1 A complete itemization of costs including labor, material.

.2 Subcontractor's, Sub-subcontractor's and material suppliers for their portions of the work itemized to include labor, material.

.3 Labor costs shall be indicated hourly wage and fringe benefits. Labor hours shall be provided for each phase of the work.

.4 Material costs shall include unit costs and units required where applicable.

§ 7.1.9 The Contractor understands that Change Orders to the Contract which increase or decrease the Cost by $10,000 or more, or the time of completion by 30 days or more, will require written documentation by the Owner that the changes:

.1 were not reasonably foreseeable at the time the Contract was signed;

.2 were not within the contemplation of the Contract as signed; and

.3 are in the best interest of the Owner or region and authorized by law.

§ 7.1.10 The Contractor shall provide written notice to the Architect and the Owner if overtime labor rates are included in the computation of the cost of a proposed Change Order or Construction Change Directive.

§ 7.1.11 In the event that the Contractor and the Owner do not reach agreement on a Change Order or a Construction Change Directive, the Owner may, in its discretion, delete the labor, materials and equipment that are the subject of the Change Order or the Construction Change Directive from the Work to be performed under the Contract Documents. The Owner shall receive credit from the Contractor for the labor, materials, and equipment, including Contractor overhead and profit attributable to the deleted work. The Owner may complete the deleted work through another contractor or subcontractor.

§ 7.2 Change Orders

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

.1 The change in the Work;

.2 The amount of the adjustment, if any, in the Contract Sum; and

.3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Construction Change Directives

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

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

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

.1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;

.2 Unit prices stated in the Contract Documents or subsequently agreed upon;

.3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or

.4 As provided in Section 7.3.4.

§ 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~~ Actual 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~~ Actual costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;

.3 ~~Rental~~ Actual rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;

.4 ~~Costs~~ Actual costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and

.5 ~~Costs~~ Actual costs of supervision and field office personnel directly attributable to the change. Cost of supervision, unless directly attributable to change, will not be allowable as an itemized cost for any additions (or credited for deletions) unless a change in the Contract Time is made.

Overtime when specifically authorized by the Owner shall be paid for by the Owner on the basis of a premium payment only, plus the cost of insurance and taxes based on the premium payment. Overhead and profit will not be paid by the Owner for overtime. Field tickets must be signed by the Owner or Architect for verification of overtime hours.

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§ 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.~~ Upon resolution of exact scope, Contract Sum change, and Contract Time change, a Change Order shall be prepared incorporating the Construction Change Directive.

§ 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 computed in accordance with Section 7.3.4 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,~~ increase or decrease, if any, with respect to that change. Also, if the amount of either the credit or the addition is in dispute, the amount of the other, non-disputed item may not be included in Applications for Payment. Overhead and profit will be included in credits to the same extent they are included in additive Change Orders.

§ 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.

§ 7.3.11 Change Orders that result in a net decrease in or credit to the Contract Sum must include a credit to the Owner for the Contractor's overhead and profit as described in Section 7.1.7.

§ 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 promptly 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.

§ 7.5 SUBSTITUTIONS

After the award of the Project, a request by the Contractor for a substitution of materials or equipment in place of those specified in the Contract Documents will be considered only under one or more of the following conditions:

(a) Required for compliance with interpretation of code requirements or insurance regulations then existing.
(b) Unavailability of specified products, through no fault of the Contractor.
(c) Subsequent information discloses inability of specified products to perform properly or to fit in designated space.
(d) Manufacturer/fabricator refuses to certify or guarantee performance of specified product as required.
(e) When it is clearly seen, in the judgment of the Architect and with the Owner's approval, that a substitution would be substantially to the Owner's best interests, in terms of cost, time, or other considerations.

Substitution requests shall be written, timely, and accompanied by adequate technical and cost data. Requests shall include a complete description of the proposed substitution, name of the material or equipment for which it is to be substituted, drawings, cuts, performance and test data, and any other data or information necessary for a complete evaluation by the Architect.

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.~~working day, excluding weekends and legal holidays.

§ 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. The Contractor shall bear all additional costs incurred to meet the Contract Time, which may require working overtime without additional compensation.

§ 8.2.4 The Contractor shall reimburse the Owner for all fees or expenses, including without limitation, the Architect, engineers and legal expenses, for additional services necessitated by Contractor's failure to obtain Substantial Completion within the time established in the agreement, for more than two (2) inspections for Substantial Completion, or final inspection.

§ 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 by other causes which the Architect and Owner determine, in their sole discretion, or (5) by other causes that the Contractor asserts, and the Owner Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect and Owner may determine.

§ 8.3.2 ~~Claims relating to time shall be made in accordance with applicable provisions of Article 15.~~The Contractor shall not be entitled to recover from the Owner, and hereby waives all rights that it or its Subcontractors or any other person may otherwise have to recovery, any costs, expenses and damages of any nature that it or its Subcontractors or any other person may suffer by reason of delay in the performance of the Work or any portion thereof, the extension of Contract Time granted herein being the Contractor's sole and exclusive remedy.

§ 8.3.3 ~~This Section 8.3~~ The Contractor shall not be entitled to any increase in the Contract Sum as a result of any delays in the progress of the Work. The Contractor's sole remedy for delay shall be an extension of time. This Section 8.3 does not preclude recovery of damages ~~for~~ or delay by ~~either party~~ the Owner under other provisions of the Contract Documents.

§ 8.3.4 Notwithstanding other provisions in this Contract, Contractor shall not be entitled to any recovery of damages arising out of any event or delay caused within Contractor's control and/or for "Acts of God", including without limitation adverse weather conditions (which shall include typical rain events that can be reasonably predicted through historical data) which prevents such early completion of the Work.

§ 8.3.5 Where a delay occurs that is beyond the Contractor's control and when the delay is not reasonably unacceptable, the Contractor has an affirmative duty to mitigate the effect of that delay on the progress of the Work. An extension of the Substantial Completion date will not be granted to the extent that the Contractor breaches said duty to mitigate.

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~~ At the pre-construction meeting, the Contractor shall submit to the Owner and the Architect a detailed schedule of values allocated 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~~ twenty (20) days before the Owner's submission date for the School Board's review and approval of such payment at the next School Board meeting or, if the Owner's School Board approves otherwise, 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. The form of Application for Payment shall be a notarized AIA Document G702, Application and Certification for Payment, supported by AIA Document G703, Continuation Sheet.

§ 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. However, this Section will not apply to routine retainage the Contractor intends to withhold from the Subcontractor pursuant to the Subcontract.

§ 9.3.1.3 No interest will be paid upon retainage.

§ 9.3.1.4 Contractor shall submit all payment requests to the Architect for all work completed during the previous time period. Requests submitted late will not be processed until the following month. Contractor shall include the Contractor's waiver of lien for the full amount and partial subcontractor waivers of lien in the amounts of the previous payment request.

§ 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. The Contractor shall submit requisitions from suppliers and Subcontractors to substantiate the amounts requested on the Application for Payment for materials or equipment stored on or off site. The Owner shall have no responsibility or liability to the Contractor for the safekeeping of materials and equipment stored at the site or 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.

§ 9.3.4 The Contractor shall submit his application for payment as outlined in Section 9.3 on the first of the month, and the Owner will make payment accordingly promptly after receipt of the Architect's Certificate. Each partial payment request shall be made monthly and Contractor shall request payment of ninety percent (90%) of the portion of the Contract Sum properly allocable to labor, materials and equipment incorporated in the work less the aggregate of previous payments in each case. The Owner reserves the right to reduce retainage prior to substantial completion. Retainage shall not be reduced below 5% until all closeout documents as required in the Instruments of Service have been received and reviewed by the Architect.

§ 9.3.5 Before each certificate for payment is issued, the Contractor shall furnish to the Architect a complete statement of the amounts due to Subcontractors, parties supplying material, and for his own materials and labor, on AIA Document G702 and G702A "Application and Certificate for Payment."

§ 9.3.6 A Sworn "Contractor's Affidavit" shall be submitted with each payment request in sufficient form for the Owner to determine Contractor's right to payment. Each payment request shall include executed waivers of lien in conformity with information set forth on a properly completed Contractor's Affidavit. In the event that the Owner is satisfied with Contractor's payment procedures, the Owner may accept partial waivers of lien of Subcontractors and suppliers who were included in the immediate preceding payment. The Contractor shall submit waivers on a current basis, but the Owner may allow Subcontractors and suppliers to be not more than one payment late with their partial waivers.

§ 9.3.7 Upon giving ten (10) days' notice in writing to the Contractor, the full contract retainage may be reinstated, and the retention restored to the basis established in Section 9.3.4 if the manner of completion of the work and its progress do not remain satisfactory to the Owner, or if any surety of Contractor withholds its consent.

§ 9.3.8 All material necessary for the construction of this Project, delivered upon the premises, shall not be removed from the premises without written consent of the Architect.

§ 9.3.9 The Contractor's request for final payment shall include: (1) the Contractor's Final Lien Waiver in the full amount of the contract; and (2) final lien waivers in the full amount of their contracts from all subcontractors and suppliers for which final lien waivers have not previously been submitted.

§ 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.

§ 9.5.5 The Owner shall not be required to make payment unless in its own independent judgment it accepts the Architect's Certificate.

§ 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. In the event that the Owner elects to utilize an escrow agent, the Owner and the escrow agent may elect to make payments due the Contractor to the Contractor and its subcontractors.

§ 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.~~ Intentionally Deleted.

§ 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.~~Intentionally Deleted.

§ 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. With respect to Work enumerated on the list accompanying the Certificate of Substantial Completion, the guarantee or warranty period shall start at the time of subsequent acceptance of this Work in writing by Owner.

§ 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. The payment shall be sufficient to increase the total payments to 95 percent of the contract sum, less such amounts as the Architect shall determine for incomplete work and unsettled claims.

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

§ 9.11 LIQUIDATED DAMAGES

The Contractor is solely responsible for substantially completing the Work by the scheduled Substantial Completion Date for each Phase of the Work. This responsibility includes all work of the Contractor and that of its Subcontractors and suppliers. The Contractor acknowledges that the Owner will suffer significant financial loss, and there will be disruption to the School Corporation community, if the Project is not complete on or before the Substantial Completion Date for the work set forth in the Contract Documents. The Contractor further acknowledges that the measure of such loss and the disruption to the School Corporation community would not be susceptible to precise calculation. To protect the Owner against said loss and disruption to the School Corporation community and not as a penalty, the Owner and the Contractor hereby agree that the Contractor and the Contractor's Surety, if any, shall be liable for and shall pay to the Owner, Liquidated Damages as per the Liquidated Damages Sliding Scale below for each calendar day of delay, per each School campus, per Phase in Substantial Completion. Substantial Completion for the Project refers to all scheduled work being a minimum 99% complete.

LIQUIDATED DAMAGES SLIDING SCALE

Original Awarded Bid Cost	Liquidated Damages per Calendar Day
$0 - $499,999.99	$500
$500,000.00 - $999,999.99	$600
$1,000,000.00 - $3,999,999.99	$700
$4,000,000.00 - $7,999,999.99	$800
$8,000,000.00 - $11,999,999.99	$900
$12,000,000.00 - $19,999,999.99	$1,000
$20,000,000.00 - Above	$1,500

§ 9.11.2 Payments of Liquidated Damages are in addition to other direct damages that may be incurred by the Owner and not a penalty. All such Liquidated Damages may be set-off against any monies that may be due the Contractor. The Owner's approval or making of progress payments or final payment, with or without knowledge that the Work was untimely, shall not constitute or be deemed a waiver of the Owner's rights or claims, or of the Owner's ability to receive Liquidated Damages under the Contract or common law.

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~~ shall. at its sole cost and expense, 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~~ twenty-one (21) days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.2.9 The Contractor, prior to commencing the work, shall submit to the Architect, in writing, a statement certifying that he is familiar with the Manual of Accident Prevention in Construction by the Associated General Contractors of America, current edition, and further that the Contractor will maintain at the project a copy of said publication and will strictly enforce the applicable requirements of same. Contractor will also state the name of the Contractor's Safety Engineer who will be responsible for enforcing all safety requirements.

§ 10.2.10 All Construction documents pertaining to this Work, and the joint and several phases of construction hereby contemplated, are to be governed, at all times, by applicable provisions of the Federal Law, including but not limited to the latest amendments of the following:

.1 Williams Steiger Occupational Safety & Health Act of 1970 Public Law 91 596;

.2 Part 1910 — Occupational Safety & Health Standards, Chapter XVII of Title 29, Code of Federal Regulations;

.3 Part 1518 — Safety & Health Regulations for Construction, Chapter XIII of Title 29, Code of Federal Regulations.

§ 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.

§ 10.3.1.1 The Contractor shall not cause or permit any "Hazardous Materials" (as defined herein) to be brought upon, kept or used in or about the Projects site(s) except to the extent such Hazardous Materials: (1) are necessary for the prosecution of the Work; and (2) have been approved in writing by the Owner. Any Hazardous Materials allowed to be used on the Project site(s) shall be used, stored, and disposed of in writing as directed in writing by the Owner. Any Hazardous Materials allowed to be used in the Project site(s) shall be used, stored, and disposed of in compliance with all applicable laws relating to such Hazardous Materials. Any unused or surplus hazardous Materials, as well as, any other Hazardous Materials that have been placed, released, or discharged on the Project site(s) by the Contractor or any of its employees, agents, suppliers, or subcontractors, shall be removed from the Project site(s) at the earlier of (1) completion of the Work requiring the use of such Hazardous Materials; (2) the completion of the Work as a whole; or (3) within twenty-four (24) hours following the Owner's demand for such removal. Such removal shall be undertaken by the Contractor at its sole cost and expense and shall be performed in accordance with all applicable laws. The Contractor shall immediately notify the Owner of any release or discharge of any Hazardous Materials on the Project site(s). The Contractor shall provide the Owner with copies of all warning labels on products that the Contractor or any of its subcontractors will be using in connection with the Work, and the Contractor shall be responsible for making any and all disclosures required under applicable "Community Right to Know" or similar laws. The Contractor shall not clean or service any tools, equipment, vehicles, materials, or other items in such a manner as to cause a violation of any laws or regulations relating to Hazardous Materials. All residue and waste materials resulting from any such cleaning or servicing shall be collected and removed from the Project site(s) in accordance with all applicable laws and regulations. The Contractor shall immediately notify the Owner of any citations, orders, or warnings issued to or received by the Contractor, or of which the Contractor otherwise becomes aware, that relate to any Hazardous Materials on the Project site(s). Without limiting any other indemnification provisions pursuant to law or specified in this Agreement, the Contractor shall indemnify, defend (at the Contractor's sole cost, and with legal counsel approved by the Owner), and hold the Owner and Architect harmless from any and all claims, demands, losses, damages, disbursements, liabilities, obligations, fines, penalties, costs, and expenses for removing and remedying the effect of any Hazardous Materials on, under, from, or about the Project site(s), arising out of or relating to, directly or indirectly, the Contractor's or its subcontractor's failures to comply with any of the requirements herein. As used herein, the term "Hazardous Materials" means any hazardous or toxic substances, materials, and wastes listed in the United States Department of transportation Materials Table, or listed by the Environmental Protection Agency as hazardous substances, and all substances, materials, or wastes that are or become regulated under federal, state, or local law.

§ 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.~~ Intentionally Deleted.

§ 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.~~ site. 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~~ liability policies as required 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.~~

§ 11.1.2 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.~~

§ 11.2.1. The Contractor shall purchase and maintain insurance covering the Owner's contingent liability for claims which may arise from operations under the contract and that will protect the Owner and the Architect and their agents and employees from and against all claims, damages, losses and expenses including attorney's fees and all other defense costs whether in legal or administrative actions.

§ 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.~~ In any and all claims against the Owner or the Architect or any of their agents or employees by any employee of the contractor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the insurance obligation under this Section shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the contractor or any subcontractor under Workmen's Compensation Acts, disability benefit acts or other employee benefit acts.

§ 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.~~ The Contractor shall give the Owner the original policy and shall furnish the Architect memorandum copies of said policy. The Owner and Architect shall be the named insureds in this Protective Liability Policy. The Contractor shall protect the Owner and the Architect and their agents and employees from expenses, including attorney's fees, arising out of or resulting from the performance sickness, disease, or death, or injury to, or destruction of any tangible property (other than the Work itself) including the loss of use therefrom that is caused in whole or in part by any negligent act or omission of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, regardless of whether it is caused in whole or in part by a party to whom insurance is afforded pursuant to this Section.

§ 11.3 PROPERTY INSURANCE

§ 11.3.1 Builder's Risk Insurance is required and shall be purchased and maintained by the Owner until Substantial Completion.

§ 11.3.1.1 The policy required by this Section shall be a Completed Value All Risk Builder's Risk policy and shall cover all work (including that of all contractors) in the course of construction excluding temporary structures and materials used in the construction process stored on or within one hundred feet of the construction site and while awaiting installation. The policy shall be written in an amount equal to 100% of the total sum of all contracts. However, the policy is based on a $5,000 deductible, applicable to all loses for each occurrence. Therefore, the Contractor shall be solely responsible for any and all losses up to $5,000. Losses are adjustable with and payable to the Owner for his own account.

§ 11.3.1.2 Coverage under the policy required by this Section shall include, but not be limited to:

A. All Risk of Direct Physical Loss, including Fire and Extended Coverage (Lightning, wind storm, hail, explosion, riot, civil commotion, aircraft, vehicle and smoke).

B. Vandalism and Malicious Mischief.

§ 11.3.1.3 Coverage under the policy required by this Section shall not extend to:

A. The Contractors', Subcontractors', or the Architect's/Engineer's Tools, apparatus, machinery, scaffolding, hoists, forms, staging, shoring and other similar items commonly referred to as construction equipment, which may be on the site and the capital value of which is not included in the Work.
B. Property owned by employees of any of the foregoing.
C. Vehicles of any kind.
D. Trees and shrubs.
E. Drawings and specifications.

§ 11.3.1.5 The policy required by this Section by its terms or endorsement shall specifically permit and allow for beneficial or partial occupancy prior to completion or acceptance of the project by the Owner.

§ 11.3.1.6 The prompt repair or reconstruction of the Work as a result of any insured loss or damage shall be the Contractor's responsibility and shall be accomplished at no additional cost to the Owner or Architect. The contractor shall furnish the proper assistance in the adjustment and settlement of any loss. Loss will be adjustable with and payable to the party purchasing the Builder's Risk Insurance who shall be responsible for apportioning the loss proceeds to each and every entity involved in the loss to the extent of his interest. The policy shall contain a provision that the policy will not be canceled, changed or altered until at least 30 calendar days prior written notice has been given to the named insured.

§ 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 Owner's 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~~ Contractor shall pay the Subcontractors, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-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.~~ The Owner as fiduciary shall have the power to adjust and settle a loss with insurers.

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~~ Final 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~~ Final 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~~ shall, at Contractor's sole cost and expense, 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~~ Final Completion by the period of time between ~~Substantial~~ Final 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.~~ In the case of any Work performed in correcting defects pursuant to guarantees or warranties provided or referred to by this Article 12, the warranty or guarantee period shall begin anew from the date of the completion or correction of such Work.

§ 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.~~Documents and pay all attorney's fees and expenses related thereto immediately upon demand.

§ 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.~~
State of Indiana.

§ 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.

§ 13.3.3 The Owner and the Architect reserve the right to accept or reject any substitutions bid upon. If substitutions are not specifically accepted in writing, materials specified as "standard" shall be used in construction of this project.

§ 13.3.4 Any material specified by reference to the number, symbol or title of specific standards, such as Commercial Standards, Federal Specifications, trade association standards, or similar standards, shall comply with requirements in the latest revision thereof and any amendment of supplement thereto in effect on the date of the Instruments of Service, except as limited to type, class or grade, or modified in such reference by a given date. The standards related to, except as modified in the Specifications, shall have full force and effect as though printed in the Specifications.

§ 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~~ Contractor'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. Notwithstanding any other term or provision in this Article 13 to the contrary, in the event that any testing or inspection of the Work or any part thereof reveals defects in materials or workmanship, then the Contractor shall remedy such defects and shall bear all costs and expenses associated with such testing which is related to determining whether such defects have been properly remedied.

§ 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.~~Any references in this Agreement to interest being assessed against the Owner are hereby deleted.

§ 13.7 REGULATIONS

§ 13.7.1 The Contractor and/or Subcontractor warrant/s that s/he is familiar with and s/he shall comply with Federal, State and local laws, statutes, ordinances, rules and regulations, School Board Rules and Policies, and the orders and decrees of any courts or administrative bodies or tribunals in any manner affecting the performance of the contract including without limitation Workmen's Compensation Laws, minimum salary and wage statutes and regulations, laws with respect to permits and licenses and fees in connection therewith, laws regarding maximum working hours, and, without limitation, such other laws and regulations as are specifically described below. Additionally, Contractor and subcontractor warrant that s/he shall comply with any amendments to such Federal, State and local laws, statutes, ordinances, rules and regulations that are enacted thereafter during the performance of the Work and under this Contract. To the extent that there are any violations of any of the applicable laws, rules, regulations and/or court orders/decrees mentioned herein, Contractor and Subcontractor shall be responsible for indemnifying and holding both the Owner and Architect free and harmless from all costs, fees and expenses incurred, directly or indirectly and including without limitation attorneys' fees, by the Owner or the Architect in responding to and complying with demands made by any of the governmental departments/agencies and/or the courts, or an aggrieved employee or person and such amounts may be withheld from the payments to be made on the project. It is the intention that the Owner and Architect shall suffer no time loss or other additional expenses in complying with any inquiry made with

regard to any compliance with the applicable laws, rules and regulations referenced herein. No plea of misunderstanding or ignorance thereof will be considered.

§ 13.7.1.1 Whenever required or upon the request of the Architect or Owner, the Contractor or subcontractor shall furnish the Architect and the Owner with satisfactory proof of compliance with said Federal, State and local laws, statutes, ordinances, rules, regulations, orders, and decrees.

§ 13.7.2 The Contractor and Subcontractors shall carefully examine the Occupational Safety and Health Act of 1970, published in May 1971, as issued by the Federal Register (OSHA), and the specific regulations governing procedures, techniques, safety precautions, equipment design, and the configuration of the same as required under this Act and the Contractor agrees as evidenced by his submission of a bid to comply with all terms of the Act and to perform and complete in a workmanlike manner all work required in full compliance with said Act. The Contractor is responsible to comply with OSHA and its regulations as amended in performing any work under the Contract Documents.

§ 13.7.3 The Contractor shall comply with all federal, state and local non-discrimination laws:

§ 13.7.3.2.1 Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, creed, sex, marital status, national origin or ancestry, age, citizenship, physical or mental handicap or disability, military status, unfavorable discharge from military service or arrest record status: and further that it will examine all job classifications to determine if minority persons or women are underutilized and will take appropriate affirmative action to rectify any such underutilization.

§ 13.7.3.2.2 Contractor, in all solicitations or advertisements for employees placed by it or on its behalf, it will state that all applicants will be afforded equal opportunity without discrimination because of race, color, religion, sex, marital status, national origin or ancestry, age, physical or mental handicap unrelated to ability, or an unfavorable discharge from military service.

§ 13.7.15 No Smoking. In accordance with the Owner's Policy, smoking is prohibited on all School Corporation property.

7§ 13.7.17 The Contractor understands and acknowledges that its work, in whole or in part, will be performed on public school property where there may be direct, daily contact with school students. The Contractor further understands and acknowledges that the State of Indiana requires that all employees of vendors, licensees, contractors or others having direct, daily contact with students are subject to a criminal background check and may not be listed on the State Sex Offender Registry. Prior to allowing any of its employees who will be performing the scope of work access to school property, the Contractor agrees to provide the Owner, at the sole cost of the Contractor with the following:

(1) Evidence that each employee, agent, contractor or other person performing work on school property under this Agreement was subjected to a criminal background check in conformity with I.C. 20-26-5-10; that said persons are not listed on said Registry; and said persons have no criminal convictions for the offenses listed under I.C. 20-26-5-11(6);

(2) The Contractor will provide the Owner, upon request, a copy of the criminal background check conducted on each such person.

In the event the Contractor plans to subcontract with or use the services of another person or firm that may have direct, daily contact with students on school property, in order to fulfill its obligations under its Agreement with the Owner then in that event the Contractor will require all such persons or firms to comply with the provisions of this paragraph and I.C. 20-26-5-10.

In the event the Contractor fails to comply with the provisions of this paragraph and I.C. 20-26-5-10, and as a result a suit or claim is instituted by a student for harm caused by an employee of the Contractor, or caused by an employee of a subcontractor to the Contractor, then in that event the Contractor agrees to fully defend and indemnify, including reimbursement of attorney's fees and costs, the Owner against any such claims.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

Intentionally Deleted. .3.

~~**§ 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.~~ If the Contractor shall institute proceedings or consent to proceedings requesting relief or arrangement under the Federal Bankruptcy Act or any similar or applicable federal or state law, or if a petition under any federal or state bankruptcy or insolvency law is filed against the Contractor and such petition is not dismissed within sixty (60) days after the date of said filing, or if the Contractor admits in writing his inability to pay his debts generally as they become due, or if he makes a general assignment for the benefit of his creditors, or if a receiver, liquidator, trustee or assignee is appointed on account of his bankruptcy or insolvency; or if a receiver of all or any substantial portion of the Contractor's properties is appointed; or if the Contractor abandons the Work; or if he fails, except in cases for which extension of time is provided, to prosecute promptly and diligently the Work or to supply enough properly skilled workmen or proper materials for the Work; or if he submits an Application for Payment, sworn statement, waiver of lien, affidavit or document of any nature whatsoever which is intentionally falsified; or if he fails to make prompt payment to Subcontractors or for materials or labor or otherwise breaches his obligations under any subcontract with a Subcontractor; or if a mechanic's or material man's lien or notice of lien is filed against any part of the Work or the site of the Project and not promptly bonded or insured over by the Contractor in a manner satisfactory to the Owner; or if the Contractor disregards any laws, statutes, ordinances, rules, regulations or orders of any governmental body or public or quasi-public authority having jurisdiction of the Work or the site of the Project; or if he otherwise violates any provision of the Contract Documents; then the Owner, without prejudice to any right or remedy available to the Owner under the Contract Documents or at law or in equity, the Owner may, after giving the Contractor and the surety under the Performance

Bond and under the Labor and Material Payment Bond described in Section 11.5, seven (7) days' written notice, terminate the employment of the Contractor. If requested by the Owner, the Contractor shall remove any part or all of his equipment, machinery and supplies from the site of the Project within seven (7) days after the date of such request, and in the event of the Contractor's failure to do so, the Owner shall have the right to remove or store such equipment, machinery and supplies at the Contractor's expense. In case of such termination, the Contractor shall not be entitled to receive any further payment for Work performed by the Contractor through the date of termination. The Owner's right to terminate the Owner-Contractor Agreement pursuant to this Section 14.2.1 shall be in addition to and not in limitation of any rights or remedies existing hereunder or pursuant hereto or at law or in equity.

§ 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~~ all costs to the Owner of completing the Work, then the Contractor shall be paid for all Work performed by the Contractor to the date of termination. If such costs to the Owner of completing the Work exceed such unpaid balance, the Contractor shall pay the difference to the ~~Owner. The amount~~ Owner immediately upon the Owner's demand. The costs to the Owner of completing the Work shall include, but not be limited to, the cost of any additional architectural, managerial and administrative services required thereby, any costs incurred in retaining another contractor or other subcontracts, any additional interest or fees which the Owner must pay by reason of a delay in the completion of the Work, attorneys' fees and expenses, and any other damages, costs, and expenses the Owner may incur by reason of completing the Work or any delay thereof. . The amount, if any, to be paid to the Contractor ~~or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application,~~ shall be certified by the Architect, upon application, in the manner provided in Section 9.4, and this obligation for payment shall survive termination of the Contract.

§ 14.2.5 The Owner may, upon seven (7) days written notice to the Contractor, terminate the Agreement between the Owner and Contractor without cause. Upon written request and submittal of the appropriate documentation as required by the Owner, the Owner shall pay the Contractor for all work performed by the Contractor to the date of termination that has been approved by the Owner. The Owner may, upon the Contractor executing such a confirmatory assignments as the Owner shall request, accept and assume all of the Contractor's obligations under all subcontracts executed in accordance with the terms of the Contract Documents that may accrue after the date of such termination and that the Contractor has incurred in good faith in connection with the Work. Upon receipt of notice of termination, the Contractor shall cease all operations on the date specified by the Owner, terminate subcontracts not assumed by the Owner, make no further orders of materials or equipment, complete work not terminated (if any), and provide such reports as may be requested by the Owner and the Architect as to the status of the Work and the Work remaining to be completed. The Owner's right to terminate the Contract under this Section shall be in addition to, and not in limitation of, its rights to stop the Work without terminating 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 to the Contract 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~~ herein shall be given within seven (7) calendar days after the event giving rise to the claim. The Contractor's claim shall include an estimate of cost and of probable effect of the delay on the progress of the Work. In the case of a continuing delay, only one ~~Claim~~ 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~~ waives Claims against the Owner and Architect 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.~~subject to litigation.

§ 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.~~ **Intentionally Deleted.**

~~**§ 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.~~

ARTICLE 16 LIMIT TO AVOID INCORPORATION OF RESPONSIBILITY BY REFERENCE

§ 16.1 Where any specification which is incorporated herein by reference, through the words "and/or as directed by the Architect," or phrases having a similar effect appear to give the Architect the right to direct something other than that specified, the Architect has in fact no such right to except as it may be established in specific instances in portions of this Instruments of Service other than in said specifications.

ARTICLE 17 INCORPORATION OF CONTRACT TERMS WITH SUBCONTRACTORS

§ 17.1 Contractor agrees that s/he will be responsible to incorporate all of the terms and conditions herein, including all amendments to this Contract, with any and all of the Subcontractors as well as any Subcontractors retained by Subcontractors. Contractor acknowledges that it is the Owner's intent that all of the terms and conditions herein, including all amendments to this Contract, will be adhered to by the Contractor and all Subcontractors performing any Work in this project.

~~§ 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.~~

DRAFT AIA® Document A101™ – 2017 Exhibit A

Insurance and Bonds

This Insurance and Bonds Exhibit is part of the Agreement, between the Owner and the Contractor, dated the « » day of « » in the year « »
(In words, indicate day, month and year.)

for the following PROJECT:
(Name and location or address)

« Duneland School Corporation - General »
« »

THE OWNER:
(Name, legal status and address)

« Duneland School Corporation »« »
«601 West Morgan Avenue
Chesterton, Indiana 46304 »

THE CONTRACTOR:
(Name, legal status and address)

« »« »
« »

TABLE OF ARTICLES

ARTICLE A.1 GENERAL

The ~~Owner and~~ Contractor shall purchase and maintain insurance, and provide bonds, as set forth in this ~~Exhibit.~~ Exhibit from companies lawfully authorized to do business in the jurisdiction in which the Project is located. As used in this Exhibit, the term General Conditions refers to AIA Document A201™–2017, General Conditions of the Contract for Construction.

ARTICLE A.2 OWNER'S INSURANCE

§ A.2.1 General

Prior to commencement of the Work, the Owner shall secure the insurance, and provide evidence of the coverage, required under this Article A.2 and, upon the Contractor's request, provide a copy of the property insurance policy or policies required by Section A.2.3. The copy of the policy or policies provided shall contain all applicable conditions, definitions, exclusions, and endorsements.

§ A.2.2 Liability Insurance

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

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

This document is intended to be used in conjunction with AIA Document A201™-2017, General Conditions of the Contract for Construction. Article 11 of A201™-2017 contains additional insurance provisions.

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

§ A.2.3 Required Property Insurance

§ A.2.3.1 Unless this obligation is placed on the Contractor pursuant to Section A.3.3.2.1, the Owner shall purchase and maintain, from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located, property insurance written on a builder's risk "all-risks" completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis. The Owner's property insurance coverage shall be no less than the amount of the initial Contract Sum, plus the value of subsequent Modifications and labor performed and materials or equipment supplied by others. The property insurance shall be maintained until Substantial Completion and thereafter as provided in Section A.2.3.1.3, unless otherwise provided in the Contract Documents or otherwise agreed in writing by the parties to this Agreement. This insurance shall include the interests of the Owner, Contractor, Subcontractors, and Sub-subcontractors in the Project as insureds. ~~This insurance shall include the interests of mortgagees as loss payees.~~The policy shall be based on a $5,000 deductible, applicable to all losses for each occurrence. The Contractor shall be solely response for any and all losses up to $5,000 per loss. Losses are payable to the Owner for Owner's own account.

§ A.2.3.1.1 Causes of Loss. The insurance required by this Section A.2.3.1 shall provide coverage for direct physical loss or damage, and shall not exclude the risks of fire, explosion, theft, vandalism, malicious mischief, collapse, earthquake, flood, ~~or windstorm.~~ and debris removal including demolition occasioned by enforcement of any legal requirements, or windstorm and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of an insured loss. The insurance shall also provide coverage for ensuing loss or resulting damage from error, omission, or deficiency in construction methods, design, specifications, workmanship, or materials. Sub-limits, if any, are as follows:
(Indicate below the cause of loss and any applicable sub-limit.)

Causes of Loss	Sub-Limit

§ A.2.3.1.2 Specific Required Coverages. The insurance required by this Section A.2.3.1 shall provide coverage for loss or damage to falsework and other temporary structures, and to building systems from testing and startup. The insurance shall also cover debris removal, including demolition occasioned by enforcement of any applicable legal requirements, and reasonable compensation for the Architect's and Contractor's services and expenses required as a result of such insured loss, including claim preparation expenses. Sub-limits, if any, are as follows:
(Indicate below type of coverage and any applicable sub-limit for specific required coverages.)

Coverage	Sub-Limit

§ A2.3.1.2.1 Coverage shall not extend to:

A. The Contractors', Subcontractors', or the Architect's/Engineer's Tools, apparatus, machinery, scaffolding, hoists, forms, staging, shoring and other similar items commonly referred to as construction equipment, which may be on the site and the capital value of which is not included in the Work.
B. Property owned by employees of any of the foregoing.
C. Vehicles of any kind.
D. Trees and shrubs.
E. Drawings and specifications.

§ A2.3.1.2.2 The policy by its terms or endorsement shall specifically permit and allow for beneficial or partial occupancy prior to completion or acceptance of the project by the Owner.

§ A2.3.1.2.3 The prompt repair or reconstruction of the Work as a result of any insured loss or damage shall be the Contractor's responsibility and shall be accomplished at no additional cost to the Owner or Architect. The contractor shall furnish the proper assistance in the adjustment and settlement of any loss. Loss will be adjustable with and payable to the party purchasing the Builder's Risk Insurance who shall be responsible for apportioning the loss proceeds to each and every entity involved in the loss to the extent of his interest. The policy shall contain a provision

that the policy will not be canceled, changed or altered until at least 30 calendar days prior written notice has been given to the named insured.

§ A.2.3.1.3 Unless the parties agree otherwise, upon Substantial Completion, the Owner shall continue the insurance required by Section A.2.3.1 or, if necessary, replace the insurance policy required under Section A.2.3.1 with property insurance written for the total value of the Project that shall remain in effect until expiration of the period for correction of the Work set forth in Section 12.2.2 of the General Conditions.

§ A.2.3.1.4 Deductibles and Self-Insured ~~Retentions. If the insurance required by this Section A.2.3 is subject to deductibles or self-insured retentions, the Owner shall be responsible for all loss not covered because of such deductibles or retentions.~~Retentions.. The policy shall be based on a $5,000 deductible, applicable to all losses for each occurrence. The Contractor shall be solely response for any and all losses up to $5,000 per loss. Losses are payable to the Owner for Owner's own account.

§ A.2.3.2 Occupancy or Use Prior to Substantial Completion. The ~~Owner's occupancy or use of any completed or partially completed portion of the Work prior to Substantial Completion shall not commence until the insurance company or companies providing the insurance under Section A.2.3.1 have consented in writing to the continuance of coverage. The Owner and the Contractor shall take no action with respect to partial occupancy or use that would cause cancellation, lapse, or reduction of insurance, unless they agree otherwise in writing.~~policy by its terms or endorsement shall specifically permit and allow for beneficial or partial occupancy prior to completion or acceptance of the Project by the Owner.

§ A.2.3.3 Insurance for Existing Structures

If the Work involves remodeling an existing structure or constructing an addition to an existing structure, the Owner shall purchase and maintain, until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, "all-risks" property insurance, on a replacement cost basis, protecting the existing structure against direct physical loss or damage from the causes of loss identified in Section A.2.3.1, notwithstanding the undertaking of the Work. The Owner shall be responsible for all co-insurance penalties.

§ A.2.4 Optional Extended Property Insurance.

The Owner shall purchase and maintain the insurance selected and described below.

(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. For each type of insurance selected, indicate applicable limits of coverage or other conditions in the fill point below the selected item.)

[« »] § A.2.4.1 Loss of Use, Business Interruption, and Delay in Completion Insurance, to reimburse the Owner for loss of use of the Owner's property, or the inability to conduct normal operations due to a covered cause of loss.

« »

[« »] § A.2.4.2 Ordinance or Law Insurance, for the reasonable and necessary costs to satisfy the minimum requirements of the enforcement of any law or ordinance regulating the demolition, construction, repair, replacement or use of the Project.

« »

[« »] § A.2.4.3 Expediting Cost Insurance, for the reasonable and necessary costs for the temporary repair of damage to insured property, and to expedite the permanent repair or replacement of the damaged property.

« »

[« »] § A.2.4.4 Extra Expense Insurance, to provide reimbursement of the reasonable and necessary excess costs incurred during the period of restoration or repair of the damaged property that are over and above the total costs that would normally have been incurred during the same period of time had no loss or damage occurred.

« »

[« »] § A.2.4.5 Civil Authority Insurance, for losses or costs arising from an order of a civil authority prohibiting access to the Project, provided such order is the direct result of physical damage covered under the required property insurance.

« »

[« »] § A.2.4.6 Ingress/Egress Insurance, for loss due to the necessary interruption of the insured's business due to physical prevention of ingress to, or egress from, the Project as a direct result of physical damage.

« »

[« »] § A.2.4.7 Soft Costs Insurance, to reimburse the Owner for costs due to the delay of completion of the Work, arising out of physical loss or damage covered by the required property insurance: including construction loan fees; leasing and marketing expenses; additional fees, including those of architects, engineers, consultants, attorneys and accountants, needed for the completion of the construction, repairs, or reconstruction; and carrying costs such as property taxes, building permits, additional interest on loans, realty taxes, and insurance premiums over and above normal expenses.

« »

§ A.2.5 Other Optional Insurance.

The Owner shall purchase and maintain the insurance selected below.

(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance.)

[« »] § A.2.5.1 Cyber Security Insurance for loss to the Owner due to data security and privacy breach, including costs of investigating a potential or actual breach of confidential or private information. *(Indicate applicable limits of coverage or other conditions in the fill point below.)*

« »

[« »] § A.2.5.2 Other Insurance

(List below any other insurance coverage to be provided by the Owner and any applicable limits.)

Coverage	Limits

ARTICLE A.3 CONTRACTOR'S INSURANCE AND BONDS

§ A.3.1 General

§ A.3.1.1 Certificates of Insurance. The Contractor shall provide certificates of insurance acceptable to the Owner evidencing compliance with the requirements in this Article A.3 at the following times: (1) prior to commencement of the Work; (2) upon renewal or replacement of each required policy of insurance; and (3) upon the Owner's written request. An additional certificate evidencing continuation of commercial liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the periods required by Section A.3.2.1 and Section A.3.3.1. The certificates will show the Owner as an additional insured on the Contractor's Commercial General Liability and excess or umbrella liability policy or policies.

§ A.3.1.2 Deductibles and Self-Insured Retentions. The Contractor shall disclose to the Owner any deductible or self-insured retentions applicable to any insurance required to be provided by the Contractor.

§ A.3.1.3 Additional Insured Obligations. To the fullest extent permitted by law, the Contractor shall cause the commercial general liability coverage to include (1) the Owner, the Architect, and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 04, and, with respect to the Architect and the Architect's consultants, CG 20 32 07 04. The Contractor shall also cause the automobile liability policy to include the Owner, the Architect and the Architect's consultants as additional insureds.

§ A.3.2 Contractor's Required Insurance Coverage

§ A.3.2.1 The Contractor shall purchase and maintain the following types and limits of insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:
(If the Contractor is required to maintain insurance for a duration other than the expiration of the period for correction of Work, state the duration.)

«Coverages shall be maintained without interruption from date of commencement of the Work until 60 days after the date of Final Completion or for such other period for maintenance of completed operations coverage as specified in the Contract Documents. With respect to the Contractor's completed operations coverage, until expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents »

§ A.3.2.2 Commercial General Liability

§ A.3.2.2.1 Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than «One Million Dollars » ($ «1,000,000 ») each occurrence, «Two Million Dollars » ($ «2,000,000 ») general aggregate, and «One Million Dollars » ($ «1,000,000 ») aggregate for products-completed operations hazard, providing coverage for claims including

.1 damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;

.2 personal injury and advertising injury;

.3 damages because of physical damage to or destruction of tangible property, including the loss of use of such property;

.4 bodily injury or property damage arising out of completed operations; and

.5 the Contractor's indemnity obligations under Section 3.18 of the General Conditions.

.6 Liability insurance should be written on the comprehensive general liability basis, and shall include, but not be limited to the following sub-lines:

A. Premises and Operations including X, C, U coverages (explosion, collapse, underground).

B. Products and Completed Operations to be maintained for two (2) years after Final Completion.

C. Independent Contractor's Protective.

D. Broad Form Comprehensive General Liability Endorsement:

1. Contractual Liability, including contractors' obligation under Section 3.18.
2. Personal Injury & Advertising Injury Liability
3. Premises Medical Payments
4. Fire Legal Liability - Real Property
5. Broad Form Property Damage Liability (including Completed Operations)
6. Incidental Medical Malpractice Liability

7. Additional Persons Insured, including employees for personal and advertising injury.
8. Extended Bodily Injury Liability

.10 If liability insurance is written under the new simplified form - Commercial General Liability, the above listed coverages should be included.

.11 If the General Liability coverages are provided by a Commercial General Liability Policy on a claims-made basis, the policy date or retroactive date shall predate the contract; the termination date of the policy shall be no earlier than the termination date of coverages required to be maintained after final payment, certified in accordance with Section 9.10.2, and an extended period endorsement "Supplemental Tail," must be purchased.

.12 In any and all claims against the Owner or the Architect, or any of their officers, directors, board members, officials, agents or employees, by any employee or Contractor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the insurance obligation under this Section shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the Contractor or subcontractor under the Worker's Compensation Act, disability benefit acts or other employees benefits acts.

§ A.3.2.2.2 The Contractor's Commercial General Liability policy under this Section A.3.2.2 shall not contain an exclusion or restriction of coverage for the following:

.1 Claims by one insured against another insured, if the exclusion or restriction is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim.

.2 Claims for property damage to the Contractor's Work arising out of the products-completed operations hazard where the damaged Work or the Work out of which the damage arises was performed by a Subcontractor.

.3 Claims for bodily injury other than to employees of the insured.

.4 Claims for indemnity under Section 3.18 of the General Conditions arising out of injury to employees of the insured.

.5 Claims or loss excluded under a prior work endorsement or other similar exclusionary language.

.6 Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language.

.7 Claims related to residential, multi-family, or other habitational projects, if the Work is to be performed on such a project.

.8 Claims related to roofing, if the Work involves roofing.

.9 Claims related to exterior insulation finish systems (EIFS), synthetic stucco or similar exterior coatings or surfaces, if the Work involves such coatings or surfaces.

.10 Claims related to earth subsidence or movement, where the Work involves such hazards.

.11 Claims related to explosion, collapse and underground hazards, where the Work involves such hazards.

§ A.3.2.3 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Contractor, with policy limits of not less than «One Million Dollars » ($ «1,000,000 ») per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles along with any other statutorily required automobile coverage.

§ A.3.2.4 ~~The Contractor may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as the coverages required under Section A.3.2.2 and A.3.2.3, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers.~~Umbrella Excess Liability insurance in the amount of Two Million Dollars ($2,000,000) over commercial general liability insurance, automobile liability insurance and Employer's Liability insurance.

§ A.3.2.5 Workers' Compensation at statutory limits.

§ A.3.2.6 Employers' Liability with policy limits not less than «One Million Dollars » ($ «1,000,000 ») ~~each accident,~~ «One Million Dollars » ($ «1,000,000 ») each employee, and «One Million Dollars » ($ «1,000,000 ») policy limit.

§ A.3.2.7 Jones Act, and the Longshore & Harbor Workers' Compensation Act, as required, if the Work involves hazards arising from work on or near navigable waterways, including vessels and docks

§ A.3.2.8 If the Contractor is required to furnish professional services as part of the Work, the Contractor shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than «One Million Dollars » ($ «1,000,000 ») per claim and «One Million Dollars » ($ «1,000,000 ») in the aggregate.

§ A.3.2.9 If the Work involves the transport, dissemination, use, or release of pollutants, the Contractor shall procure Pollution Liability insurance, with policy limits of not less than «One Million Dollars » ($ «1,000,000 ») per claim and «One Million Dollars » ($ «1,000,000 ») in the aggregate.

~~§ A.3.2.10 Coverage under Sections A.3.2.8 and A.3.2.9 may be procured through a Combined Professional Liability and Pollution Liability insurance policy, with combined policy limits of not less than ($) per claim and ($) in the aggregate.~~

~~§ A.3.2.11 Insurance for maritime liability risks associated with the operation of a vessel, if the Work requires such activities, with policy limits of not less than ($) per claim and ($) in the aggregate.~~

~~§ A.3.2.12 Insurance for the use or operation of manned or unmanned aircraft, if the Work requires such activities, with policy limits of not less than ($) per claim and ($) in the aggregate.~~

§ A.3.3 Contractor's Other Insurance Coverage

§ A.3.3.1 Insurance selected and described in this Section A.3.3 shall be purchased from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:
(If the Contractor is required to maintain any of the types of insurance selected below for a duration other than the expiration of the period for correction of Work, state the duration.)

« The Contractor shall purchase and maintain insurance covering the Owner's contingent liability for claims which may arise from operations under the Agreement and that will protect the Owner and the Architect and their respective officers, directors, board members, its agents and employees from and against all claims, damages, losses and expenses including attorney's fees and all other defense costs whether in legal or administrative actions arising (a) out of or resulting from the performance of the work provided that any such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury or to destruction of tangible property (other than the work itself) including the loss of use resulting therefrom and (b) out of any claim made by any employee of the contractor or any subcontractor or by the Illinois Department of Labor for the amount of any wages or salaries which should have been paid to such employees and interest thereon, fines or other assessments relating to such violation, pursuant to provisions of the Prevailing Wage Act, 820 ILCS 130/0.01 et seq., regardless of whether or not it is caused in part by a party to whom insurance is afforded pursuant to this department. »

§ A.3.3.2 The Contractor shall purchase and maintain the following types and limits of insurance in accordance with Section A.3.3.1.
(Select the types of insurance the Contractor is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. Where policy limits are provided, include the policy limit in the appropriate fill point.)

[« »] § A.3.3.2.1 Property insurance of the same type and scope satisfying the requirements identified in Section A.2.3, which, if selected in this section A.3.3.2.1, relieves the Owner of the responsibility to purchase and maintain such insurance except insurance required by Section A.2.3.1.3 and Section A.2.3.3. The Contractor shall comply with all obligations of the Owner under Section A.2.3 except to the extent provided below. The Contractor shall disclose to the Owner the amount of any deductible, and the Owner shall be responsible for losses within the deductible. Upon request, the Contractor shall provide the Owner with a copy of the property insurance policy or policies required. The Owner shall

adjust and settle the loss with the insurer and be the trustee of the proceeds of the property insurance in accordance with Article 11 of the General Conditions unless otherwise set forth below:
(Where the Contractor's obligation to provide property insurance differs from the Owner's obligations as described under Section A.2.3, indicate such differences in the space below. Additionally, if a party other than the Owner will be responsible for adjusting and settling a loss with the insurer and acting as the trustee of the proceeds of property insurance in accordance with Article 11 of the General Conditions, indicate the responsible party below.)

« »

[« »] § A.3.3.2.2 Railroad Protective Liability Insurance, with policy limits of not less than « » ($ « ») per claim and « » ($ « ») in the aggregate, for Work within fifty (50) feet of railroad property.

[« »] § A.3.3.2.3 Asbestos Abatement Liability Insurance, with policy limits of not less than « » ($ « ») per claim and « » ($ « ») in the aggregate, for liability arising from the encapsulation, removal, handling, storage, transportation, and disposal of asbestos-containing materials.

[« »] § A.3.3.2.4 Insurance for physical damage to property while it is in storage and in transit to the construction site on an "all-risks" completed value form.

[« »] § A.3.3.2.5 Property insurance on an "all-risks" completed value form, covering property owned by the Contractor and used on the Project, including scaffolding and other equipment.

[« »] § A.3.3.2.6 Other Insurance
(List below any other insurance coverage to be provided by the Contractor and any applicable limits.)

Coverage	Limits

§ A.3.3.3 Other Insurance Requirements

§ A3.3.3.1 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required of the Contractor by this Exhibit A shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by this Exhibit A. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness. On the Certificate of Insurance, delete in the cancellation provision the following words, 'Endeavor to' and 'but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representatives.

§ A3.3.3.2 The insurance company issuing the comprehensive general liability insurance coverage required for the performance of this contract shall be licensed to do business in Illinois with Best's Insurance Guide (current edition) rating of "A" or better and satisfactory to the Owner.

§ A3.3.3.3 The Contractor shall name the Owner and the Architect and each of their respective officers, directors, officials, board members, agents and employees as additional insureds on the Contractor's general liability policy for claims arising from the Contractor's operations, the automobile liability policy and the excess/ umbrella liability policy. The foregoing policies shall be endorsed to be primary over any other insurance which the additional insureds may have and shall contain a severability of interests clause. The Contractor shall require each of its subcontractors to comply with the requirements of this Section A3.3.3.3.

§ A.3.4 Performance Bond and Payment Bond

The Contractor shall provide surety bonds, from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is ~~located,~~ located with a A.M. Best rating of "A" and with a surety company for which the Owner has no objection. The Contractor's performance bond and labor and materials payment bond shall be in the amount of one hundred percent (100%) of the Contract Sum, as follows:

(Specify type and penal sum of bonds.)

Type	Penal Sum ($0.00)
Payment Bond	See above.
Performance Bond	See above.

Payment and Performance Bonds shall be AIA Document A312™, Payment Bond and Performance Bond, or contain provisions identical to AIA Document A312™, current as of the date of this Agreement.

§ A3.4.1 The Contractor shall deliver the required bonds to the Owner not later than ten days following the date of notification of the Award of Contract or if the Work is to be commenced prior thereto in response to a letter of intent, the Contractor shall, prior to the commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished.

§ A3.4.2 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 the power of attorney. Such bonds shall be in the form of American Institute of Architect's Document A-311 or a similar form worded exactly the same as Doc. A-311 and shall bear the same date as, or a date subsequent to, the date of the Contract. The bonds shall be issued by a bonding company licensed to operate in the State of Illinois and approved by the Owner.

§ A3.4.3 The failure of the Contractor to supply the required bonds within 10 days after the prescribed Agreement forms are presented for signature, or if the bonding company finds that the Contractor is NOT bondable, shall constitute a default, and the Owner may award the Contract to the next responsible low bidder.

§ 3.4.5 If at any time the Owner becomes dissatisfied with any Surety or Sureties then upon the Bonds, or for any other reason such Bonds shall cease to be adequate security for the Owner, the Contractor shall, within five (5) days after notice to do so, substitute acceptable Bonds in such forms and sum and signed by such other Sureties as may be satisfactory to the Owner. No further payments shall be deemed due nor shall be made until the new Sureties shall have qualified.

§ A3.4.6 Whenever the Contractor shall be and is declared by the Owner to be in default under the Contract, the Surety and Contractor are each responsible to make full payment to the Owner for any and all additional services of the Architect as which are required as a result of the Contractor's default and in protecting the Owner's right under the Agreement with the Contractor.

§ A3.4.7 The Contractor must within ten (10) days after the execution of this Agreement furnish a Performance Bond agreeing to pay not less than the prevailing wage for work to be performed in accordance with the Contract and the laws of the State of Illinois, and agreeing to pay all sums of money due for labor, materials, apparatus, fixtures or machinery and transportation with respect thereto, as in said Payment Bond provided, each dated the same day as the Agreement, in the forms prescribed by the Owner and each in an amount equal to the Contract Sum with a corporate Surety or Sureties acceptable to the Owner authorized to do business in the State of Illinois. These Bonds shall be maintained by the Contractor and shall remain in full force and effect until final acceptance of the work by the Owner or sixty (60) days following the date of Final Payment, whichever occurs later. The Contractor shall agree and shall cause the Surety to agree to be bound by each and every provision of the Contract Documents.

§ A3.4.8 In the event the Surety will make any assignment for the benefit of creditors or commit any act of bankruptcy, or if it shall be declared bankrupt or if it shall file a voluntary petition in bankruptcy or shall in the opinion of the Owner be insolvent, the Contractor shall agree forthwith upon request of the Owner to furnish and maintain other corporate Surety with respect to such bonds satisfactory to the Owner.

ARTICLE A.4 SPECIAL TERMS AND CONDITIONS

Special terms and conditions that modify this Insurance and Bonds Exhibit, if any, are as follows:

§ A.4.1 The Contractor is responsible for determining that subcontractors are adequately insured against claims arising out of or relating to the Work. The premium cost and charges for such insurance shall be paid by ~~each Subcontractor.~~

»

SECTION 00820

RESPONSIBLE BIDDER FORM

Duneland School Corporation

Responsible Bidding Practices Submission Form

**Refer to the Duneland School Corporation "Policy to establish Responsible Bidding Practices"*

Project: Duneland School Corporation – 2020 Door Renovations at: Chesterton Middle School and Bailly Elementary School.

Bid Opening Date: February 19, 2020

Name of Contractor:

_____

Address:

_____

Telephone:

_____

Name of Primary Contact:

_____

Category of Work:

_____

Contractors proposing to submit bids on any Duneland School Corporation ("School") project estimated to be at least one hundred fifty thousand dollars ($150,000) or more must, prior to the opening of bids, submit a statement made under oath and subject to perjury laws, the following:

1. Attach to this Form a Certificate of Good Standing from the Indiana Secretary of State dated within the last 60 days. (This requirement shall not apply if the bidder is an individual, sole proprietor or partnership.)

2. List all names previously used by the bidder within the last five (5) years:
   _____
   _____
   _____
   _____

3. Within the last five (5) years, has the bidder been determined by a court or governmental agency to be in violation of any federal, state, or local laws, including violations of contracting or anti-trust laws, tax or licensing laws, the Occupational Safety and Health Act (OSHA) violations, federal Davis-Bacon Act violations or violations of the Indiana Common Construction Wage Act? If so, identify the date of the violation and identify the court or agency issuing the determination.
   _____
   _____
   _____
   _____

4. State whether the bidder intends to employ its own employees or whether the bidder intends to utilize subcontractors to be utilized by the bidder for the project. If the bidder intends to use subcontractors for the project, identify all subcontractors the bidder intends to utilize.

   _____
   _____
   _____
   _____

5. Provide evidence of the bidder's participation in apprenticeship and training programs applicable to the work to be performed on the project which are approved by and registered with the United States Department of Labor's Office of Apprenticeship or any similar organization. Include copies of all applicable certificates or standards for such training programs.

6. Provide a copy of the bidder's workplace drug-testing policy that covers all employees of the bidder and meets or exceeds the requirements of Indiana Code 4-13-18.

7. Identify, by name and description of experience, each of the bidder's project managers and superintendents that bidder intends to assign to work on the project.

   _____
   _____
   _____
   _____

8. If applicable, identify all professional or trade licenses required by law to be held, for any trade or specialty area for which the bidder seeks a contract award.

   _____
   _____
   _____
   _____

9. If applicable, state whether any professional or trade license held by the bidder, or any directors, officer, or manager employed by the bidder, has been suspended or revoked within the last five (5) years.

   _____
   _____
   _____
   _____

10. Provide evidence that the surety company utilized by the bidder is on the United States Department of Treasury's Listing of Approved Securities.

11. Identify any federal, state, or local tax liens or delinquencies owed by the bidder to any federal, state, or local taxing body within the last five (5) years.

    _____
    _____
    _____
    _____

SECTION 00820

RESPONSIBLE BIDDER FORM

VERIFICATION

I swear or affirm, under the penalties for perjury, that the foregoing information is true and that I am duly authorized by the bidder to make the representations herein. I understand and acknowledge that any material changes to the bidder's status or as to any of the information provided on this Form must be reported to the School Corporation within ten (10) days from the date of the occurrence or the change of status and that the School Corporation reserves the right to request additional information and verification of any of the information submitted pursuant to this Form.

Bidder: _____

By: _____

Its: _____

Date: _____

A Policy to Establish Responsible Bidding Practices and Submission Requirements for Submitting Bids to Perform Construction Work

WHEREAS, the Duneland School Corporation is required by law to award capital improvement contracts to the "lowest responsive and responsible" bidder; and,

WHEREAS, the Duneland School Corporation, based upon its experience, has determined that quality workmanship, efficient operation, safety, and timely completion of projects requires all bidders meet certain minimum requirements in order to be a "responsive and responsible" bidder; and,

WHEREAS, applicable state law also requires that bidders meet certain minimum requirements in order to be a "responsive and responsible" bidder; and,

WHEREAS, the Duneland School Corporation seeks to enhance its ability to identify "responsive and responsible" bidders on all School construction projects by institution of more comprehensive submission requirements which are in compliance with Indiana State law; and,

WHEREAS, the "Responsible Bidding Practices and Submission Requirements" policy will preserve administrative resources by insuring that only qualified contractors and subcontractors are awarded contracts on public works construction projects; and,

WHEREAS, the "Responsible Bidding Practices and Submission Requirements" policy will assure efficient use of taxpayer dollars, will promote public safety and is in the public interest.

THEREFORE, this Policy, which is entitled "Responsible Bidding Practices and Submission Requirements for Submitting Bids to Perform Construction Work," is hereby adopted and reads as follows:

I. Bid Submission Requirements

Contractors proposing to submit bids on any Duneland School Corporation ("School") project estimated to be at least one-hundred fifty thousand dollars ($150,000.00) or more must, prior to the opening of bids, submit a statement made under oath and subject to perjury laws, on a form designated by the School and must include:

(A) A copy of a print-out of the Indiana Secretary of State's on-line records for the bidder dated within sixty (60) days of the submission of said document showing that the bidder is in existence, current with the Indiana Secretary of State's Business Entity Reports, and eligible for a certificate of good standing. If the bidder is an individual, sole proprietor or partnership, this subsection shall not apply;

(B) A list identifying all previous names used by the bidder;

(C) A list of all determinations by a court or governmental agency for violations of federal, state, or local laws including, but not limited to violations of contracting or antitrust laws, tax or licensing laws, environmental laws, the Occupational Safety and Health Act (OSHA), or federal Davis-Bacon and related Acts;

(D) A statement on staffing capabilities, including labor sources;

(E) Evidence of participation in apprenticeship and training programs, applicable to the work to be performed on the project, which are approved by and registered with the United States Department of Labor's Office of Apprenticeship, or its successor organization. The required evidence includes a copy of all applicable apprenticeship certificates or standards for these training programs;

(F) A copy of a written plan for employee drug testing that: (i) covers all employees of the bidder who will perform work on the public work project; and (ii) meets, or exceeds, the requirements set forth in IC 4-13-18-5 or IC 4-13-18-6;

(G) The name and description of the management experience of each of the bidder's project managers and superintendents that bidder intends to assign to work on the project;

(H) Proof of any professional or trade license required by law for any trade or specialty area in which bidder is seeking a contract award; and disclosure of any suspension or revocation within the previous five years of any professional or trade license held by the company, or of any director, office or manager employed by the bidder;

(I) Evidence that the contractor is utilizing a surety company which is on the United States Department of Treasury's Listing of Approved Sureties; and

(J) A written statement of any federal, state or local tax liens or tax delinquencies owed by the bidder to any federal, state or local taxing body in the last five years.

The School reserves the right to demand supplemental information from the bidder, (additional) verification of any of the information provided by the bidder, and may also conduct random inquiries of the bidder's current and prior customers.

II. Post-Bid Submissions from Subcontractors

All bidders shall provide a written list that discloses the name, address, and type of work for each first-tier subcontractor from whom the bidder has accepted a bid and/or intends to directly contract with or hire on any part of the public work project, including individuals performing work as independent contractors, within five (5) business days after the date the bids are due.

In addition, each such subcontractor contracting directly with the bidder shall be required to adhere to the requirements of Section I of this Ordinance as though it were bidding directly to the School, except that such subcontractors shall submit the required information (including the name, address, and type of work for each of their subcontractors) to the successful bidder no later than five (5) business days after the subcontractor's first day of work on the public work project and the bidder shall then forward said information to the School. Payment shall be withheld from any subcontractor contracting directly with the bidder who fails to timely submit said information until such information is submitted and approved by the School.

Upon request, the School may require any subcontractors to provide the required information (including name, address, type of work on the project and the name of the subcontractor with whom the subcontractor has a direct contract). Payments shall be withheld from any

subcontractor who fails to timely submit this information until this information is submitted and approved by the School. Additionally, the School may require the successful bidder and relevant subcontractor to remove the nonresponsive or non-responsible subcontractor from the project and replace it with a responsive and responsible subcontractor.

Failure of a subcontractor to submit the required information shall not disqualify the successful bidder from performing work on the project and shall not constitute a contractual default and/or breach by the successful bidder. However, the School may withhold all payments otherwise due for work performed by a subcontractor, until the subcontractor submits the required information and the School approves such information. The School may also require that successful bidder to remove the subcontractor from the project and replace it with a responsive and responsible subcontractor.

The disclosure of a subcontractor ("Disclosed Subcontractor") by a bidder or a subcontractor shall not create any rights in the Disclosed Subcontractor. Thus, a bidder and/or subcontractor may substitute another subcontractor ("Substitute Subcontractor") for a Disclosed Subcontractor by giving the School written notice of the name, address, and type of work of the Substitute Subcontractor. The Substitute Subcontractor is subject to all of the obligations of a subcontractor under this Ordinance.

III. Validity of Pre-Qualification Classification

Upon designation by the School that a contractor's or subcontractor's submission in anticipation of a bid is complete and timely, and upon any further consideration deemed necessary by the School, the contractor or subcontractor may be pre-qualified for future School public works projects. A contractor's classification as "qualified" shall exempt the contractor or sub-contractor from the comprehensive submission requirements contained herein for a period of twelve (12) months. Thereafter, contractors or subcontractors who are pre-qualified must submit a complete application for continuation of "pre-qualified" standing, on a form provided by the School, (also referred to as the "short form") by December 31st for the upcoming calendar year. Failure by any pre-qualified contractor or subcontractor to timely submit its complete application for continuation of "pre-qualified" standing shall result in automatic removal of the designation, effective January 1 of the upcoming year. However, the "removed" contractor or subcontractor shall still be permitted to bid on School public works projects.

Any material changes to the contractor's status, at any time, must be reported in writing within ten (10) days of its occurrence to the School. The pre-qualification designation is solely within the discretion of the School and the School specifically reserves the right to change or revoke the designation for a stated written reason(s).

Denial of pre-qualification shall be in writing and shall be forwarded to the contractor within seven (7) working days of such decision. Any contractor denied or losing pre-qualification status may request reconsideration of the decision by submitting such request in writing to the School within five (5) business days of receipt of notice of denial.

IV. Incomplete Submissions by Bidders

It is the sole responsibility of the potential bidder to comply with all submission requirements applicable to the bidder in section I above by no later than the public bid opening. Post-bid

submissions must be submitted in accordance with section II above. Submissions deemed inadequate, incomplete, or untimely by the School may result in the automatic disqualification of the bid.

V. Responsive and Responsible Bidder Determination

The School, after review of complete and timely submissions, shall, in its sole discretion, after taking into account all information in the submission requirements, determine whether a bidder is responsive and responsible. The School specifically reserves the right to utilize all information provided in the contractor or subcontractor's submission or any information obtained by the School through its own independent verification of the information provided by the contractor.

VI. Certified Payroll

For projects in which the cost is at least $150,000, the successful bidder and all subcontractors working on a public work project shall submit a certified payroll report utilizing the federal form now known as a WH-347 which must be prepared on a weekly basis and submitted to the School within ten (10) calendar days after the end of each week in which the bidder or subcontractor performed its work on the public work project. These certified payroll reports shall identify the job title and craft of each employee on the project, e.g. journeyman electrician or apprentice electrician.

The School may withhold payment due for work performed by a bidder if the bidder fails to timely submit its certified payroll reports until such time as such certified payroll reports are submitted. The School may also withhold payment due for work performed by a subcontractor if the subcontractor fails to timely submit its certified payroll reports until such time as such certified payroll reports are submitted. The School shall not withhold payment to a bidder for work performed by the bidder or for work performed by subcontractors who have submitted their certified payroll reports, because one or more other subcontractors failed to timely submit their certified payroll reports.

VII. Public Records

All information submitted by a bidder or a subcontractor pursuant to this Policy, including certified payrolls, are public records subject to review pursuant to the Indiana Access to Public Records law (IC 5-14-3).

VIII. Penalties for False, Deceptive, or Fraudulent Statements/Information

Any bidder that willfully makes, or willfully causes to be made, a false, deceptive or fraudulent statement, or willfully submits false, deceptive or fraudulent information in connection with any submission made to the School shall be disqualified from bidding on all School projects for a period of three years.

IX. Conflicting Policies

Any Policy or provision of any Policy in conflict with the provisions of this Policy is hereby repealed.

X. Severability

If any provision of this Policy is found to be invalid, the remaining provisions of this Policy shall not be affected by such a determination. These other provisions of this Policy shall remain in full force and effect without the invalid provision.

This Policy, which is entitled "Responsible Bidding Practices and Submission Requirements for Submitting Bids to Perform Construction Work," is hereby adopted by the Duneland School Corporation on the 12th day of January 2016.

Ralph D. Ayres

Kristin Kroeger

Ron Stone

John R. Marshall

Mike Trout

SECTION 01100

SUMMARY

PART 1 – GENERAL

1.1 PROJECT

A. Project Name: 2020 Door Renovations at: Chesterton Middle School and Bailly Elementary School.
B. Owner's Name: Duneland School Corporation.
C. The Project consists of the installation of concrete foundations and slabs, aluminum entrances and doors, wood doors, hardware, drywall and frame and flooring.

1.2 CONTRACT DESCRIPTION

A. Work covered by Contract Documents: As defined in contract documents.
B. Definitions. The following terms are used throughout the Contract Documents. The work will be governed in accord with the definitions.
    1. Fabricated: Fabricated pertains to items specifically assembled or made of selected materials or components to meet individual design requirements.
    2. Manufactured: Manufactured means standard units, usually mass produced by an established manufacturer of the respective item.
    3. Provide: Provide means furnish and install.
    4. Shop fabricated or shop made: Shop fabricated or shop made refers to items made by a Contractor or Subcontractor in their own Shop.
C. Insurance
    1. Refer to the attached A101-Exhibit A Insurance and Bonds, as well as A201 General Conditions, for the Designated Purchaser of the following:
        a. Builder's Risk Insurance
        b. Per occurrence deductible amounts as required by the Owner's insurance
D. Contracts
    1. The Owner will award a single construction contract for all work specified in the Contract Documents.
    2. Upon award of the construction contract, the owner will issue a Letter of Intent to award a Construction Contract to the approved contractor. This Letter of Intent shall serve as a notice to proceed with the project according to the terms and conditions set forth in the Contract Documents, until the work under Contract Documents is completed. The contractor shall commence all construction services as specified in the contract documents upon receipt of the Letter of Intent.

1.3 DUTIES OF CONTRACTOR

A. The contractor shall be responsible for providing and paying for:
    1. Labor, materials and equipment.
    2. Tools, construction equipment and machinery.
    3. Temporary water, heat and other utilities required for construction.
    4. Other facilities and services necessary for proper execution and completion of work.
B. The contractor shall be responsible for paying and securing all permits, governmental fees and licenses other than primary building permit necessary for the proper execution and completion of the Project.
C. The contractor shall comply with all codes, ordinances, rules, regulations, orders and other legal requirements of the public authorities which govern the performance of the work under the Contract Documents.
D. The contractor shall coordinate and have completed all inspections required by public authorities relating to the performance of the work under the Contract Documents including, but not limited to:
    1. All inspections required in Section 01400 to be performed by a Testing and Inspection Agency.

E. The contactor shall have duty to promptly submit written notice to the Architect of any known or observed variances of the Contract Documents from legal requirements that may govern the work. Upon notice to the Architect, appropriate modifications will be made to the Contract Documents to account for the legal requirements. In the event the contractor fails to provide notice of any variances, he shall assume responsibility for any work known to be contrary to those legal requirements.
   1. The contractor shall enforce strict discipline and maintain good order among employees and subcontractors. Contractor shall not employ unfit person of those not skilled in the assigned task
F. The contractor acknowledges that the Project is exempt from all State and Local use taxes. It shall be the duty of the contractor to: 1) obtain a sales tax exemption certificate number from the Owner; 2) place exemption certificate number on invoices for materials incorporated in work; 3) furnish copies of invoices to Owner upon request 4) file a notarized statement that all purchases made under exemption certificate were entitled to be exempt with Owner upon completion of work; and 5) pay any penalties assessed for the improper use of exemption certificate number.

1.4 OWNER OCCUPANCY

A. The date of Substantial Completion shall be no later than August 7, 2020, 5:00 p.m. Note: Substantial Completion for this project refers to all scheduled work being a minimum 99% complete.
B. The date of Final Completion shall be no later than September 7, 2020, 5:00 p.m. Note: Final Completion for this project refers to all scheduled work, punch list and closeout items being 100% complete.
C. The Architect's and their consultants' services will terminate sixty (60) days after (1) the date of Substantial Completion of the Work or (2) the anticipated date of Substantial Completion identified in Specifications, whichever is earlier. Any work required of the Architect and their consultants after this date will be back-charged to the contractor by the Owner.
D. Refer to General Conditions for Liquidated Damages.

1.5 JOB OPERATIONS

A. Project Security:
   1. The contractor shall provide necessary precautions such as fences or barriers to protect Owner's personnel or members of the general public in the areas in which construction activity is on-going.
   2. The contractor shall securely close-off all areas of construction after working hours to prevent entry by unauthorized persons.
B. Project Hours:
   1. No time restrictions will be implemented. However, at any time, the Owner may choose to restrict work hours if the Owner/District feels the contractor is causing disruption to the learning environment, etc.
   2. Note: Village noise ordinance (call to verify times).

1.6 WORK LIMITATIONS

A. All spaces around where work will be done may be occupied by Owner's personnel. Contractor shall limit the scope of its work during times of owner occupancy to prevent disturbing Owner.
B. Contractor shall schedule work in such a manner as to not disrupt mechanical or electrical systems for the existing adjacent buildings during times of Owner occupancy.
C. Contractor shall give Owner a minimum of three (3) days' notice before commencing work in Owner occupied area.

1.7 CONTRACTOR USE OF SITE AND PREMISES

A. Contractor shall confine work at the Project site as permitted by: 1) Law; 2) Permits; 3) the Contract Documents; 4) As instructed by Owner or Owner's representative; and 5) As required for Owner's use of adjacent facilities.

B. Confer with Owner's representative and obtain full knowledge of all Project site rules and regulations affecting work.
C. Contractor shall conform to the Project Site rules and regulations while engaged in its work.
D. Contractor acknowledges that the Project Site rules and regulations take precedence over other rules and regulations that may exist outside such jurisdiction.
E. Contractor shall be obligated to permit the Owner's representative to examine the contractor's list of employees, including those of his subcontractors and their agents, working on the Project Site. Contractor shall
   1. Keep all vehicles, mechanized or motorized equipment locked and secured at all times when parked and unattended on Owner's premises.
   2. Contractor shall not, under any circumstance, leave any vehicle unattended with its motor or engine running, or with its ignition key in place.
   3. All traffic control subject to Owner's representative's approval.
F. Do not unreasonably encumber site with materials or equipment.
G. Contractor shall assume full responsibility for protection safety and safekeeping of products stored on premises.
H. Contractor shall move all stored products or equipment which interferes with operations of Owner or other subcontractors.
I. Contractor shall obtain and pay for the use of additional storage or work areas needed for operations.
J. Contractor shall limit use of the Project Site for work and storage to areas depicted in the drawing or area approved in advance by Owner.
K. The contractor acknowledges that adjacent sites may be used by the Owner or members of the general public requiring contractor to maintain appropriate safety measures.
L. The contractor shall provide access to and from the Project Site as required by law and by Owner:
M. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.

1.8 SUBSTANCE ABUSE PREVENTION POLICY

A. Pursuant to the Substance Abuse Prevention on Public Works Act (820 IL CS 265/1, et seq.), employees of the contractor and employees of the contractor and employees of any subcontractor are prohibited from the use of drugs or alcohol , as defined in the Act, while performing on any public works project.
B. The contractor and any subcontractor shall file with the public body engaged in the construction of the public works: a copy of the substance abuse prevention program along with a cover letter certifying that their program meets the requirements of the Act or a letter certifying that the contractor or subcontractor has a collective bargaining agreement in effect dealing with the subject matter of this Act. A certification form is attached and must be completed by the contractor and each subcontractor to this contract.

1.9 WORK SEQUENCE

A. Construction services as specified herein shall commence upon issuance of the Letter of Intent to Award a Construction Contract.
B. Certificate of Insurance and all Bonds to be submitted to the Architect within 3 business days upon issuance of the Letter of Intent.
C. All Shop Drawings to be submitted to the Architect within 21 calendar days upon issuance of the Letter of Intent.

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION – NOT USED

END OF SECTION

SECTION 01200

PRICE AND PAYMENT PROCEDURES

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Procedures for preparation and submittal of applications for progress payments.
B. Change order procedures.

1.2 RELATED SECTIONS
A. Section 01210 - Allowances: Payment procedures relating to allowances.
B. Section 01780 - Closeout Submittals.

1.3 SCHEDULE OF VALUES
A. Submit a printed schedule on AIA Form G703 - Application and Certificate for Payment Continuation Sheet or Architect approved similar.
B. Submit Schedule of Values in duplicate within 15 days after of the Letter of Intent.
C. Include in each line item, the amount of Allowances specified. For unit cost Allowances, identify quantities taken from Contract Documents multiplied by the unit cost to achieve the total for the item.
D. Submit separate quantities and amounts for material and labor for each respective line item.
E. Revise schedule to list approved Change Orders, with each Application For Payment.
F. Support values given with data to substantiate their correctness.
G. Submit quantities of designated materials.
H. List quantities of materials specified under unit prices.
I. Include in the line items a total amount of Contractor's overhead and profit.
J. Payment for materials stored on or off site will be limited to those materials listed separately in Schedule of Values.
K. Form of Submittal
    1. Submit typewritten Schedule of Values on 8-1/2 x 11 paper format.
    2. Utilize the Table of Contents of this Project Manual.
    3. Identify each line item with number and title of the specification Section.
    4. Separate costs under the various phases.
L. Preparation
    1. Itemize separate line cost for each of following cost items:
        a. Overhead and profit.
        b. Bonds.
        c. Insurance.
        d. General Requirements.
        e. Site mobilization.
    2. Itemize separate line item cost for work specified in each section of the specifications. Identify work of:
        a. Contractor's own labor forces.
        b. All subcontractors.
        c. All major suppliers of products or equipment.
    3. Break down installed costs into:
        a. Delivered cost of product, with taxes paid.
        b. Labor cost.
    4. For each line item which has an installed value of more than $10,000.00 break down costs to list amount of labor and amount of materials under each item.
        a. Contractor, subcontractor or supplier.
        b. Specification section number.
        c. Description of work or material.
        d. Quantity.
        e. Unit Price.
        f. Scheduled value.
        g. % of Contract.
    5. Round off figures to nearest ten dollars.

6. Make sum of total costs of all items listed in Schedule equal to total contract sum.

M. Review and Resubmittal
   1. After review by Architect, revise and resubmit Schedule as directed by Architect.
   2. Follow original submittal procedure.

N. Update
   1. Update Schedule of Values when:
      a. Change in cost occurs.
      b. Change of subcontractor or supplier occurs.
      c. Change of product or equipment occurs.
   2. Provide written justification for any changes requested by contractor.

1.4 APPLICATIONS FOR PROGRESS PAYMENTS

A. Payment Period: Submit at intervals stipulated in the Agreement.
B. Present required information in typewritten form.
C. Form: AIA G702 Application and Certificate for Payment and AIA G703 - Continuation Sheet including continuation sheets when required or Architect approved equal.
D. For each item, provide a column for listing each of the following:
   1. Item Number.
   2. Description of work.
   3. Scheduled Values.
   4. Previous Applications.
   5. Work in Place and Stored Materials under this Application.
   6. Authorized Change Orders.
   7. Total Completed and Stored to Date of Application.
   8. Percentage of Completion
   9. Balance to Finish.
   10. Retainage.
E. Each item on the application for payment shall include retainage in the amount of 10% of the total work completed and stored to date of application. Upon reaching Substantial Completion, and with prior authorization of the Owner and the Architect, the retainage may be reduced to 5% for each item that is deemed substantially complete on the subsequent application for payment.
F. Execute certification by signature of authorized officer.
G. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored Products
H. List each authorized Change Order as a separate line item, for each respective subcontractor or material supplier listing Change Order number and dollar amount as for an original item of Work.
I. Submit three pencil copies of each Application for Payment for review and approval by Architect and Owner.
J. Revise Application and Certificate of payment as directed by Architect.
K. Once pencil copy has been approved by Architect, send three copies along with supporting documentation to the corporate office of the Architect.
L. Include the following with the application:
   1. Transmittal letter as specified for Submittals in Section 01300.
   2. Construction progress schedule, revised and current as specified in Section 01300.
   3. Current construction photographs specified in Section 01300.
   4. Partial release of liens from Contractor for current period.
      a. Release of liens to be provided on forms approved by the Architect prior to the first payment being submitted.
   5. Partial release of liens from all Subcontractors and vendors from prior period.
      a. Release of liens to be provided on forms approved by the Architect prior to the first payment being submitted.
   6. Affidavits attesting to off-site stored products, with original invoices. Statement of transfer of title upon payment and insurance coverage specifically identifying stored items.

M. When Architect requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

1.5 CERTIFIED PAYROLL FOR PUBLIC WORKS PROJECTS

A. Effective August 10, 2005 the Public Act 94-0515 amended the Prevailing Wage Act., all contractors and their subcontractors who are engaged in public works projects must provide a certified monthly payroll report either in person, by mail or electrically for the Owner's records.

B. Each Contractor or Subcontractor performing Work on this Project shall comply in all respects with all laws governing the employment of Labor, Social Security, and Unemployment Insurance of both the State and Federal government. There shall be paid to each employee engaged in Work under this Contract at the site of the Project, no less than the minimum wage for the classifications of labor employed in compliance with 820 ILCS 130/1 et seq. as now existing or hereafter amended.

C. In accordance with 820 ILCS 130/5, the Contractor and each subcontractor shall make and keep, for a period of not less than 3 years, records of all laborers, mechanics, and other workers employed by them on the Project; the records shall include each worker's name, address, telephone number, social security number, classification or classifications, the hourly wages paid in each period, the number of hours worked each day, and the starting and ending times of each work day.

D. The Contractor and each subcontractor shall submit monthly, in person, by mail, or electronically a certified payroll to the District. The certified payroll shall consist of a complete copy of the records. The certified payroll shall be accompanied by a statement signed by the contractor or subcontractor which avers that:
   1. such records are true and accurate;
   2. the hourly rate paid to each worker is not less than the general prevailing rate of hourly wages required; and
   3. the contractor or subcontractor is aware that filing a certified payroll that he or she knows to be false is a class B misdemeanor.

E. Upon 2 business days notice, the contractor and each subcontractor shall make available for inspection for the records to the District, its officers and agents, and to the Director of Labor and his deputies and agents at all reasonable hours at a location within the State. The Contractor and each subcontractor shall permit his/her employees to be interviewed on the job, during working hours, by compliance investigators of the Department or the Department of Labor.

1.6 CHANGE ORDER PROCEDURES

A. Promptly implement Change Order procedures.
   1. Provide full written data required to evaluate changes.
   2. Maintain detailed records of work done on time-and-material/force account basis.
   3. Provide full documentation to Architect.

B. Designate in writing the member of Contractor's organization:
   1. Who is authorized to accept changes in Work.
   2. Who is responsible for informing others in Contractor's employ of authorization of changes in Work.
   3. If other than the Owner, the Owner will designate in writing the person(s) authorized to execute Change Orders.

C. Initiation of Contract Changes:
   1. Requests for change by the Contractor shall be initiated in writing.
   2. Subcontractors initiating a request for change shall direct their requests to the Contractor.
   3. The Architect will review and direct the Contractor's requests for change to the Owner or Owner's Representative with recommendations.
   4. Requests for change affecting contract sum or contract completion shall be made prior to starting any changes to the construction work or purchasing of materials. Failure to make appropriate written requests will invalidate any claims for additional costs or time for said work.

D. Owner Authorizes:
   1. The Owner or Owner's Representative, having considered the necessity of the requested change and availability of funds will authorize the Architect to prepare a request for proposal (RFP).

E. Architect Prepares Request for Proposal:
   1. The Architect, following consultation with the Contractor regarding subcontracts which will be affected by the proposed change, will prepare a RFP for Contractor response.
   2. Two sets of the RFP and Supplemental Drawings and Specifications for each proposed change are transmitted to the Contractor.

F. Contractors Prepare Proposals:
   1. Detailed Breakdown of Material Equipment and Labor:
      a. The Contractor or Subcontractor whose work is affected by a proposed change shall prepare a proposal for change.
      b. The detailed breakdown shall be prepared in accordance with the Contract Documents.
      c. If a change affects work covered by agreed on prices, such prices shall be used as the basis for adjustments to the contract sum.
      d. In all other cases, adjustments to the contract sum shall be based on the Contractor's direct cost, including costs of material, labor, equipment, bonds and taxes as applicable.
      e. Labor rates shall be itemized on the detailed breakdown indicating the trade base wage rate, total union fringe benefits, FICA, unemployment compensation insurance and workmen's compensation insurance. Labor charges shall not include costs for inefficiencies of construction supervision or labor.
      f. Change order adjustments to the contract developed above shall include amounts for overhead and profit which do not exceed average amounts indicated in the Schedule of Values, or an amount of 15%, whichever is less, and that no overhead and profit shall be deducted from the total price for changes reducing the cost of the contract. If the changed work is performed by a subcontractor, no more than 10% may be added to the subcontractor's costs for overhead and profit. An additional not to exceed 5% may be included for the Contractor's overhead and profit on all work provided directly by a subcontractor employed on the project.

G. Contractor Reviews:
   1. Reviews: The Contractor shall review all proposals for:
      a. Conformance with the RFP to ensure that all items and only those items of work affected by the proposed change are included.
      b. Assurance that the proposals are submitted in conformance with the Contract Documents.
   2. Transmittal: The Contractor shall forward to the Architect three complete sets of proposals with its recommendation regarding the proposal.
      a. In making recommendations, the Contractor shall certify that the price is appropriate and if it is not appropriate, shall state the reasons for not certifying the price.
      b. Proposals, complete with all required information, shall be submitted to the Architect within three weeks of the date of the RFP in order to receive further consideration.

H. Architect Reviews:
   1. The Architect reviews the Contractor's proposals for completeness and conformance with the RFP and Contract Documents. Proposals which are incomplete or have inadequate detailed breakdowns will be returned to the Contractors for resubmission.
   2. The Architect will review and, when appropriate, approve all price proposals recommending Owner approve issuance of a change order.
   3. When the Architect considers the costs or quantities to be inappropriate to the work requested, the Architect will notify the Contractor in writing of the concerns and the Contractor will provide the necessary backup materials to justify the submittal or modify the submittal.

4. Submittals not properly justified will not be forwarded to the Owner and written notice as to the reasons will be forwarded to the Contractor. After 30 days of said written notification and no further response by the Contractor, the request will be considered inappropriate and will receive no further consideration.

I. Architect Issues Change Order:
   1. The Architect, having received what is believed to be an appropriate and acceptable Contractor proposal for the proposed change and having received Owner's approval to issue a change order, the Architect will issue a Change Order.
   2. The Change Order package prepared by the Architect for submittal to the Owner shall contain the following items:
      a. Three originals of the Change Order form with appropriate original signatures, along with supporting documentation including, but not limited to:
         1) Request for Proposal with signatures.
         2) Pristine copy of drawings and specifications.
         3) On changes initiated by the Architect, a letter explaining the circumstances related to the need for the change.
         4) On Owner requested Change Orders, a letter of request signed by the Owner's Representative.
         5) Change Order Authorization Form for Owner's Signature and permanent record in accord with Public Act 85-1295. When required on public work--for changes greater than $10,000.00 or 30 Days.

J. Owner Approves or disapproves Change Order: For change in Contract Sum and/or Contract Time.

K. One copy of approved Change Order with original signatures will be returned to the Contractor, or notice and explanation as to why it has been rejected will be forwarded to the Contractor.

1.7 APPLICATION FOR FINAL PAYMENT

A. Submit all closeout documents and comply with all requirements as put forth in Section 01780 - Closeout Submittals.

B. Once closeout submittal have been approved by Architect, prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due; including properly executed Consent of Surety.

C. Application for Final Payment will not be considered until the following have been accomplished:
   1. All closeout procedures specified in Section 01780.

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION – NOT USED

END OF SECTION

SECTION 01210

ALLOWANCES

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Cash allowances.
B. Payment and modification procedures relating to allowances.

1.2 RELATED SECTIONS
A. Section 01200 - Price and Payment Procedures: Additional payment and modification procedures.

1.3 SELECTION AND PURCHASE
A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
C. Purchase products and systems selected by Architect from the designated supplier.
D. Any unused allowance funds will be credited back to Owner by Change Order prior to close out.

1.4 SUBMITTALS
A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.
B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
C. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.
D. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.5 COORDINATION
A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.
B. Architect Responsibilities:
   1. Consult with Contractor for consideration and selection of products, suppliers, and installers.
   2. Select products in consultation with Owner and transmit decision to Contractor.
   3. Prepare Allowance Authorization.
C. Contractor Responsibilities:
   1. Assist Architect in selection of products, suppliers, and installers.
   2. Obtain proposals from suppliers and installers and offer recommendations.
   3. On notification of which products have been selected, execute purchase agreement with designated supplier and installer.
   4. Arrange for and process shop drawings, product data, and samples. Arrange for delivery.

1.6 CASH ALLOWANCES
A. Costs Included in cash allowances:
   1. Allowances shall cover the cost to the Contractor of materials and equipment delivered to the site and all required taxes, less applicable trade discounts.
   2. Contractor's costs for unloading and handling at the site, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Base Bid and not in the allowances.

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

A. Allowance No. 1: Cash Allowance: Include contingency allowance of $20,000.00 for use according to owner's instructions.

END OF SECTION

SECTION 01230

ALTERNATES

PART 1 - GENERAL

1.1 SECTION INCLUDES
A. Alternate submission procedures.
B. Documentation of changes to Contract Sum and Contract Time.

1.2 RELATED SECTIONS
A. Section 00100 – Instructions to Bidders: Instructions for preparation of pricing for alternatives.

1.3 ACCEPTANCE OF ALTERNATES
A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Immediately accepted alternates will be identified in the Owner-Contractor Agreement.
B. The Owner may accept any Alternate within 60 days of the date of contract.
C. State the amount of Alternates prices to be added or deducted from the Base Bid price on the Bid Form.
D. Perform all portions of the work affected by this Section in accordance with the requirements of the Contract Documents.
E. Comply with requirements relative to materials and workmanship contained in the respective specification sections.
F. Coordinate related work and modify surrounding work to integrate the Work of each Alternate.

1.4 SCHEDULE OF ALTERNATES
Alternate No. 1: Provide laminated glass (E-2) at Chesterton Middle School
State the amount to be ADDED to the lump sum base bid if all E-1 glazing is replaced with E-2 (laminated) glazing at Chesterton Middle School.

Alternate No. 2: All work at Bailly Elementary School
State the amount to be ADDED to the lump sum base bid if all work at Bailly Elementary School is completed.

Alternate No. 3: Provide Laminated Glass (E-2) at Bailly Elementary School
State the amount to be ADDED to the lump sum base bid if all E-1 glazing is replaced with E-2 (laminated) glazing at Bailly Elementary School. Note: Alternate #3 will only be accepted if Alternate #2 is accepted.

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION – NOT USED

END OF SECTION

SECTION 01300

ADMINISTRATIVE REQUIREMENTS

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Preconstruction meeting.
B. Site mobilization meeting.
C. Progress meetings.
D. Construction progress schedule.
E. Progress photographs.
F. Coordination drawings.
G. Submittals for review, information, and project closeout.
H. Number of copies of submittals.
I. Submittal procedures.

1.2 RELATED SECTIONS

A. Document 00700 - General Conditions: Dates for applications for payment.
B. Section 01100 - Summary: Stages of the Work, Work covered by each contract, occupancy.
C. Section 01200 - Price and Payment Procedures:
D. Section 01325 - Construction Progress Schedule: Form, content, and administration of schedules.
E. Section 01700 - Execution Requirements: Additional coordination requirements.
F. Section 01780 - Closeout Submittals: Project record documents.

1.3 PROJECT COORDINATION

A. Project Coordinator: Contractor.
B. Cooperate with the Contractor in allocation of mobilization areas of site; for field offices and sheds, for access, traffic, and parking facilities.
C. During construction, coordinate use of site and facilities through the Contractor.
D. Comply with procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
E. Comply with instructions of the Contractor for use of temporary utilities and construction facilities.
    1. Direct and check-out of utilities, operational systems and equipment.
    2. Record dates of start of operation of systems and equipment.
F. Coordinate field engineering and layout work under instructions of the Contractor.
G. Develop and implement procedure for review and processing of applications for progress and final payments: Submit recommendation to Architect for Certification to Owner for Payment.
H. Establish on-site lines of authority and communication; schedule and conduct project meetings among:
    1. Owner's Representative.
    2. Architect.
    3. Subcontractors.
I. Cost Control:
    1. Maintain cost accounting records for authorized work performed under Unit Costs.
    2. Develop and implement procedure for review and processing of applications for progress and final payments: Submit recommendation to Architect for Certification to Owner for Payment.
J. Administer processing of:
    1. Shop drawings, product data and samples.
    2. Field drawings.
    3. Coordination drawings.
    4. Closeout submittals.
K. Maintain Reports and Records at Job Site:
    1. Daily log of progress of work, available to Architect and Owner.
    2. Verify that all subcontractors maintain record documents on a current basis.

3. At completion of Project, assemble record documents from all subcontractors and deliver to the Architect in accordance with Section 01780.
4. Assemble documentation for handling of claims and disputes.

L. Contractor to verify that specified cleaning is done during progress of work and at the completion of each subcontractor's work.
M. Make the following types of submittals to Architect through the Project Coordinator:
1. Requests for interpretation.
2. Requests for substitution.
3. Shop drawings, product data, and samples.
4. Submittals for information.
5. Test and inspection reports.
6. Design data.
7. Manufacturer's instructions and field reports.
8. Applications for payment and change order requests.
9. Progress schedules.
10. Coordination drawings.
11. Closeout submittals.

N. Upon contractor's determination of Substantial Completion of work or portion thereof, notify Architect in writing as to project status and request inspection and compilation of punch list of incomplete or unsatisfactory items.
O. Upon Architect's Certification of Date of Substantial Completion, supervise correction and completion of work within specified period.
P. Upon Contractor's determination that Work is finally complete:
1. Submit written notice to Architect and Owner, that Work is ready for final inspection.
2. Secure and transmit to Architect required closeout submittals as put forth in Section 01780.

Q. Contractor to turn over to Architect for approval all items for closeout as put forth in Section 01780.

PART 2 - PRODUCTS - NOT USED

PART 3 – EXECUTION

3.1 PRECONSTRUCTION MEETING

A. Architect will schedule a meeting within 10 days of date of Letter of Intent.
B. Attendance Required:
1. Owner.
2. Architect.
3. Contractor:
4. Field Superintendent
5. Project Manager
6. Safety Representative.
7. Contractor's Major Subcontractors.

C. Minimum Agenda:
1. Items required to be submitted by Contractor at Preconstruction Meeting:
a. Fully executed bonds and Insurance Certificates
b. List of major Subcontractors and suppliers.
c. Tentative construction schedule.
d. Letter from Project Safety Representative certifying that he/she will be empowered as the Contractor's Safety Engineer, is responsible for enforcing all safety requirements and is familiar with the Manual of Accident Prevention in Construction by the Associated General Contractors of America, current edition, and further that the Contractor will maintain at the project a copy of said publication and will strictly enforce the applicable requirements of same.

2. Distribute and discuss documents required to be submitted by Contractor at Preconstruction meeting.
3. Execution of Owner-Contractor Agreement.
4. Identify critical work sequencing.
5. Discussion of schedule of values, and progress schedule.
6. Discussion of list of Subcontractors, list of Products, schedule of values, and progress schedule.
7. Designation of responsible personnel representing the parties to Contract; Owner, Architect and Contractor.
8. Establish chain of Authority.
9. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
10. Scheduling.
    a. Discuss major equipment deliveries and priorities.
11. Review of use of premises:
    a. Office and storage areas.
    b. Access to site and facilities.
12. Owner's requirements.
13. Security procedures.
14. Review requirements of and procedures for maintaining record documents.
15. Architect will record minutes and distribute copies within five days after meeting to participants, with copies to Contractor, Owner, participants, and those directly affected by decisions made.

3.2 SITE MOBILIZATION MEETING

A. Contractor will schedule a meeting at the Project site prior to Contractor occupancy.
B. Attendance Required:
    1. Contractor.
    2. Owner.
    3. Architect.
    4. Special Consultants.
    5. Contractor's Superintendent.
    6. Major Subcontractors.
    7. Safety Representative.
C. Agenda:
    1. Use of premises by Owner and Contractor.
    2. Owner's requirements and occupancy prior to completion.
    3. Construction facilities and controls provided by Owner.
    4. Temporary utilities provided by Owner.
    5. Survey and building layout.
    6. Security and housekeeping procedures.
    7. Schedules.
    8. Application for payment procedures.
    9. Procedures for testing.
    10. Procedures for maintaining record documents.
    11. Requirements for start-up of equipment.
    12. Inspection and acceptance of equipment put into service during construction period.
    13. Establish safety and first aid procedures.
    14. Procedures and reviews of mock-up panels.
D. Contractor will record minutes and distribute copies within five (5) days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.3 PROGRESS MEETINGS

A. Contractor will schedule and administer meetings throughout progress of the Work at maximum bi-monthly intervals.
B. Contractor will make arrangements for meetings, prepare agenda with copies for participants 5 business days in advance of meeting date, preside at meetings.
C. Attendance Required: Job superintendent, major Subcontractors and suppliers, Owner, Architect, as appropriate to agenda topics for each meeting.
D. Agenda:
   1. Review minutes of previous meetings.
   2. Review of Work 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. Other business relating to Work.
   14. Process Payment Requests Monthly.
E. Contractor shall record minutes and distribute copies within Five (5) calendar days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.4 CONSTRUCTION PROGRESS SCHEDULE - See Section 01325

3.5 PROGRESS PHOTOGRAPHS

A. Provide photographs of site and construction throughout progress of Work produced by an experienced photographer, acceptable to Architect.
B. Submit samples of Photographer's work on similar projects if required by Architects.
C. Take photographs on the first day of each month and as follows:
   1. Site clearing.
   2. Excavations.
   3. Foundations.
   4. Structural framing.
   5. Enclosure of building.
   6. Final completion.
D. Take photographs as evidence of existing project conditions
E. Views:
   1. Provide aerial photographs from four cardinal views at each specified time, until structure is enclosed.
   2. Provide non-aerial photographs from four cardinal views at each specified time, until Date of Substantial Completion.
   3. Consult with Architect for instructions on views required.
   4. Provide factual presentation.
   5. Provide correct exposure and focus, high resolution and sharpness, maximum depth of field, and minimum distortion.
F. Prints: Full color; three prints of each view.
   1. Matte; smooth texture; white tint; single weight; contrast grade 4, extra hard.
   2. Size: 8 x 10 inch; mounted for binder and tabs.
   3. Identify each print on back. Identify name of Project, contract number, phase, orientation of view, date and time of view, name and address of photographer, and photographer's numbered identification of exposure.

G. Deliver prints with each Application for Payment with transmittal letter specified in this Section.
H. Deliver one set of prints each to Architect and Project record documents file.
I. Negatives remain property of photographer. Require that photographer maintain negatives for 5 years from Date of Substantial Completion.

3.6 COORDINATION DRAWINGS

A. Conduct coordination meetings in accordance with each respective section as work progresses. Contractor shall coordinate with Architect for such meetings.
B. Provide information required by Contractor for preparation of coordination drawings.
C. Review drawings prior to submission to Architect.

3.7 SUBMITTALS FOR REVIEW

A. When the following are specified in individual sections, submit them for review:
   1. Product data.
   2. Shop drawings.
   3. Samples for selection.
   4. Samples for verification.
B. Submit to Architect for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
C. Samples will be reviewed only for aesthetic, color, or finish selection.
D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01780 - CLOSEOUT SUBMITTALS.

3.8 SUBMITTALS FOR INFORMATION

A. When the following are specified in individual sections, submit them for information:
   1. Design data.
   2. Certificates.
   3. Test reports.
   4. Inspection reports.
   5. Manufacturer's instructions.
   6. Manufacturer's field reports.
   7. Other types indicated.
B. Submit for Architect's knowledge as contract administrator or for Owner.

3.9 SUBMITTALS FOR PROJECT CLOSEOUT

A. When the following are specified in individual sections, submit them at project closeout:
   1. Project record documents.
   2. Operation and maintenance data.
   3. Warranties.
   4. Bonds.
   5. Lien Waivers.
   6. Other types as indicated.
B. Submit for Owner's benefit during and after project completion.

3.10 NUMBER OF COPIES OF SUBMITTALS

A. Documents for Review or for information:
   1. The Contractor has the option of providing Submittals for review or for information either as a hard copy or electronically as outlined below.
   2. If Submittal is provided as a hard copy:
      a. Submit the number of copies which the Contractor requires, plus three copies which will be retained by the Architect.

3. If Submittal is provided electronically:
   a. Deliver one copy of submittal to Architect via email or Compact Disc in PDF file format.
   b. At Architect's discretion, the reviewed submittal, with any corrections, will be returned as one electronic copy in PDF format, or as one hard copy delivered to the Contractor.

B. Documents for Project Closeout: Shall be submitted as hard copies only. Make one reproduction of submittal originally reviewed. Submit one extra of submittals for information.

C. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
   1. After review, produce duplicates.
   2. Retained samples will not be returned to Contractor unless specifically so stated.

3.11 SUBMITTAL PROCEDURES

A. Sequentially number the transmittal form and clearly indicate the respective specification section number for reference. Revise submittals with original number and a sequential alphabetic suffix.

B. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate on each copy.

C. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.

D. Deliver submittals to Architect at business address or via email.

E. Schedule submittals to expedite the Project, and coordinate submission of related items.

F. For each submittal for review, allow 10 days excluding delivery time to and from the Contractor.

G. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed Work.

H. Provide space for Contractor and Architect review stamps.

I. Shop drawings which incorporate, in part or in whole, direct reproductions of the contract documents, are not acceptable and will be returned, without review, to the contractor, for resubmittal.

J. All shop drawings which are poorly prepared or hand written will be returned, without review, to the contractor for resubmittal. Architect's determination of properly prepared shop drawings is final.

K. Electronic Media/Files
   1. Construction drawings for this project have been prepared by the Architect and Engineer utilizing the following Computer Aided Drawing (CAD) System: Auto Cad Release 2015.
   2. Contractors and Subcontractors may purchase electronic media files of the Contract Documents. Selected sheets will cost $300 for all sheets within a single discipline.
   3. Upon request to purchase electronic media or files, the Contractor shall complete the "Request for Electronic Drawing Files" issued by the Architect and issue the appropriate fee to the Architect.
   4. Sheets can be formatted to provide background information only, background plus various layers of equipment; or of complete sheets as issued for construction.
   5. The Contractor may utilize these CAD Drawings in the preparation of their Shop Drawings and as built drawings only.
   6. The information issued is provided in a good faith effort to expedite the Project and simplify the efforts of the Contractor with no guarantee by the issuer as to the accuracy or correctness of the information provided. The Architect accepts no responsibility or liability for the Contractor's or subcontractor's use of these CAD documents.
   7. The use of these CAD documents by the Contractor(s) does not relieve them of their responsibility to field measure existing conditions and to properly fit the work to the Project.
   8. These documents will be provided when purchased for the convenience of the Contractor and this Project. Ownership and use of the issued documents are governed by the terms of the General Conditions.

L. Submittals
   1. **Submit all submittals within 21 calendar days after date of Letter of Intent.** Failure to do so may cause scheduled contractor payments to be withheld.
   2. **Submit all manufacturer's letter's confirming prompt ordering of all material and equipment within 21 calendar days after date of Letter of Intent.** Failure to do so may cause scheduled contractor payments to be withheld. Confirmation Letters are to include the following:
      a. Order date.
      b. Manufacturing date.
      c. Delivery date.
      d. Confirmation that no factors will deter delivery on schedule.
      e. Any other pertinent information.
   3. Submit four prints of shop drawings, and number of copies of product data and samples which Contractor requires for distribution and future submission under Section 01700 plus one copy which will be retained by Architect.
   4. Submit number of samples specified in each of specification sections.
   5. Accompany submittals with transmittal letter, in duplicate, containing:
      a. Date.
      b. Project title and number.
      c. Contractor's name and address.
      d. Relevant Specification section number.
      e. The number of shop drawings, product data and samples submitted.
      f. Notification of any deviations from Contract Documents.
      g. Other pertinent data.
   6. Submittals shall include:
      a. Date and revision dates.
      b. Project title and number.
      c. Names of:
         1) Architect
         2) Architect's consultant(s)
         3) Subcontractor
         4) Sub-subcontractor.
         5) Supplier.
         6) Manufacturer.
         7) Separate detailer when pertinent.
      d. Identification of product or material.
      e. Relation to adjacent structure or material.
      f. Field dimensions, clearly identified as such.
      g. Specification section and page number.
      h. Specified standards, such as ASTM number or Federal Specification.
      i. A blank space, 4" x 6" for Architect's stamp.
      j. Identification of previously approved deviation(s) from Contract Documents.
      k. Identification of color selections required and color selection charts.
   7. All shop drawing submittals received by the Architect which do not bear the contractor's approval stamp and initials or signatures will be returned, without review, to the contractor, for resubmittal.
   8. All shop drawing submittals which do not contain a reproducible transparency set of the submittal will be returned without review, to the contractor, for resubmittal.

M. Resubmission Requirements
   1. Shop Drawings:
      a. Definition: Shop Drawings are original drawings prepared by Contractor, subcontractor, sub-subcontractor, supplier or distributor, which illustrates some portion of the work, showing fabrication, layout, setting or erection details.
      b. Revise initial drawings as directed and resubmit in accordance with submittal procedures.

c. Indicate on drawings all changes which have been made in addition to those requested by Architect.
d. Clearly indicate by revision number and date, each resubmittal of each shop drawing.
e. When revised for resubmission, identify all changes made since previous submission.
f. Shop drawings which incorporate, in part or in whole, direct reproductions of the contract documents, will NOT be accepted and will be returned without review.

2. Product data and samples: Submit new data and samples as specified for initial submittal.
3. Make all resubmittals within 10 business days after date of Architect's previous review.

N. Distribution of Submittals After Review
1. Contractor will distribute copies of shop drawings and product data which carry Architect's stamp to:
a. Contractor's file.
b. Job site file.
c. Record documents file.
d. Subcontractors.
e. Suppliers.
f. Fabricators.
g. Other contractors as required.
2. Distribute samples as directed in accordance with Contract Documents.
3. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.

O. Contractor Responsibilities
1. Review shop drawings, product data and samples prior to submission to the next level of authority.
2. Verify:
a. Field dimensions and drawing dimensions.
b. Field construction criteria.
c. Catalog numbers and similar data.
d. Compliance of items submitted with Contract Documents.
e. Dimensions and elevations requirements necessary to properly install product.
3. Coordinate each submittal with requirements of:
a. The Work.
b. The Contract Documents.
c. The work of other subcontractors.
4. Contractor's responsibility for errors and omissions in submittals is not relieved by Architect/Engineer's review of submittals.
5. Notify Architect in writing prior to submission and specifically on the submittal, of proposed deviations in submittals from contract requirements.
6. Contractor's responsibility for notifying Architect of deviations and for correcting deviations not properly identified in submittals is not relieved by Architect's review of improperly documented submittals.
7. Do not begin any work which requires submittals without having Architect's stamp and initials or signature indicating review.
8. After Architect's review, make response required by Architect's stamp and distribute copies. Indicate by transmittal that copy of approved data has been distributed.
9. Subcontractors:
a. Subcontractors send their submittals to the Contractor.
b. Contractor reviews and initials submittals for compliance with scope, coordination and integration with the work of all other subcontractors.
c. Contractor transmits his reviewed copies of subcontractor's submittals to Architect.
d. Contractor retains copy of submittals after review by Architect and distributes copies to submitting subcontractor and to other subcontractors for coordination and integration.
e. Contractor: Enforce resubmission requirements.

P. Architect's Duties
   1. Review submittals within 10 business days.
   2. Review for compliance to design concept of project.
   3. Review all requests for proposed deviations. Obtain Owner's concurrence and respond to Contractor's request.
   4. Review of separate item does not constitute review of an assembly in which item functions.
   5. Affix stamp, date, and initials or signature certifying to review of submittal, and with instructions for contractor response.
   6. Return submittals to Contractor for response or distribution.
   7. Select product colors upon receipt of all shop drawings and submittals requiring color selections.

Q. Submittals not requested will not be recognized or processed.

END OF SECTION

SECTION 01325

CONSTRUCTION PROGRESS SCHEDULE

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Preliminary schedule.
B. Construction progress schedule, bar chart type.

1.2 RELATED SECTIONS
A. Section 01100 - Summary: Work sequence.

1.3 REFERENCES
A. AGC (CPM) - The Use of CPM in Construction - A Manual for General Contractors and the Construction Industry; Associated General Contractors of America; 1976.

1.4 PRECONSTRUCTION MEETING
A. Within 10 days after date of Agreement, submit preliminary schedule defining planned operations for the first 90 days of Work, with a general outline for remainder of Work
B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.
C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
    1. Include written certification that major contractors have reviewed and accepted proposed schedule.
        a. Within 10 days after joint review, submit complete schedule.
D. Submit updated schedule every 30 days or as requested by Architect.
E. Submit the number of opaque reproductions that Contractor requires, plus one copy which will be retained by Architect and Owner. Furnish additional copies when directed.
F. Submit under transmittal letter form specified in Section 01300.

1.5 QUALITY ASSURANCE
A. Scheduler: Contractor's personnel or specialist Consultant specializing in CPM scheduling with five years minimum experience in scheduling construction work of a complexity comparable to this Project, and having use of computer facilities capable of delivering a detailed graphic printout within 48 hours of request.

1.6 SCHEDULE FORMAT
A. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.
B. Diagram Sheet Size: Maximum 11x17 inches or width required.
C. Sheet Size: Minimum of 8-1/2 x 11 inches, Maximum of 24" x 36".
D. Scale and Spacing: To allow for notations and revisions.

1.7 START OF CONSTRUCTION SERVICES
A. Construction services as specified herein shall commence upon issuance of the Letter of Intent to Award a Construction Contract.

PART 2 – PRODUCTS - NOT USED

PART 3 – EXECUTION

3.1 PRELIMINARY SCHEDULE

A. Prepare (preliminary) schedule in the form of a horizontal bar chart.

3.2 CONTENT

A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
B. Identify each item by specification section number.
C. Identify work of separate stages and other logically grouped activities.
D. Provide sub-schedules for each stage of Work identified in Section 01100.
E. Provide sub-schedules to define critical portions of the entire schedule.
F. Include conferences and meetings in schedule.
G. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.
H. Provide separate schedule of submittal dates for shop drawings, product data, and samples, owner-furnished products, Products identified under Allowances, and dates reviewed submittals will be required from Architect. Indicate decision dates for selection of finishes.
I. Indicate delivery dates for owner-furnished products.
J. Coordinate content with schedule of values specified in Section 01200.
K. Provide legend for symbols and abbreviations used.

3.3 BAR CHARTS

A. Include a separate bar for each major portion of Work or operation.
B. Identify the first work day of each week.

3.4 NETWORK ANALYSIS

A. Prepare network analysis diagrams and supporting mathematical analyses using the Critical Path Method.
B. Illustrate order and interdependence of activities and sequence of work; how start of a given activity depends on completion of preceding activities, and how completion of the activity may restrain start of subsequent activities.
C. Mathematical Analysis: Tabulate each activity of detailed network diagrams, using calendar dates, and identify for each activity:
    1. Preceding and following event numbers.
    2. Activity description.
    3. Estimated duration of activity, in maximum 15-day intervals.
    4. Earliest start date.
    5. Earliest finish date.
    6. Actual start date.
    7. Actual finish date.
    8. Latest start date.
    9. Latest finish date.
    10. Total and free float; float time shall accrue to Owner and to Owner's benefit.
    11. Monetary value of activity, keyed to Schedule of Values.
    12. Percentage of activity completed.
    13. Responsibility.
D. Analysis Program: Capable of compiling monetary value of completed and partially completed activities, accepting revised completion dates, and re-computation of all dates and float.
E. Required Reports: List activities in sorts or groups:
    1. By preceding work item or event number from lowest to highest.
    2. By amount of float, then in order of early start.
    3. By responsibility in order of earliest possible start date.
    4. In order of latest allowable start dates.
    5. In order of latest allowable finish dates.

6. Contractor's periodic payment request sorted by Schedule of Values listings.
7. Listing of basic input data which generates the report.
8. Listing of activities on the critical path.

3.5 REVIEW AND EVALUATION OF SCHEDULE

A. Participate in joint review and evaluation of schedule with Architect at each submittal.
B. Evaluate project status to determine work behind schedule and work ahead of schedule.
C. After review, revise as necessary as result of review, and resubmit within 5 days.

3.6 UPDATING SCHEDULE

A. Maintain schedules to record actual start and finish dates of completed activities.
B. Indicate progress of each activity to date of revision, with projected completion date of each activity.
C. Annotate diagrams to graphically depict current status of Work.
D. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
E. Indicate changes required to maintain Date of Substantial Completion.
F. Submit reports required to support recommended changes.
G. Provide narrative report to define problem areas, anticipated delays, and impact on the schedule. Report corrective action taken or proposed and its effect including the effects of changes on schedules of separate contractors.

3.7 DISTRIBUTION OF SCHEDULE

A. Distribute copies of updated schedules to Contractor's project site file, to Subcontractors, suppliers, Architect, Owner, and other concerned parties.
B. Instruct recipients to promptly report, in writing, problems anticipated by projections shown in schedules.

END OF SECTION

SECTION 01400

QUALITY REQUIREMENTS

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. References and standards.
B. Quality assurance submittals.
C. Mock-ups.
D. Control of installation.
E. Tolerances.
F. Testing and Inspection Agencies.
G. Manufacturers' field services.

1.2 RELATED SECTIONS

A. Section 01210 - Allowances: Allowance for payment of testing services.
B. Section 01300 - Administrative Requirements: Submittal procedures.
C. Section 01600 - Product Requirements: Requirements for material and product quality.

1.3 SUBMITTALS

A. Design Data: Submit for Architect's knowledge as contract administrator or for the Owner, for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.
B. Test Reports: After each test/inspection, promptly submit five copies of report to Architect and to Contractor.
    1. Include:
        a. Date issued.
        b. Project title and number.
        c. Testing laboratory name and address.
        d. Name and signature of inspector.
        e. Date and time of sampling or inspection.
        f. Record of temperature and weather.
        g. Identification of product and specifications section.
        h. Location in the Project.
        i. Type of test/inspection.
        j. Date of test/inspection.
        k. Results of test/inspection.
        l. Conformance with Contract Documents.
        m. When requested by Architect, provide interpretation of results.
    2. Test reports are submitted for Architect's knowledge as contract administrator or for the Owner, for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.
C. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.
    1. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
    2. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect.
D. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
E. Manufacturer's Field Reports: Submit reports for Architect's benefit as contract administrator or for Owner.
    1. Submit report in duplicate within 30 days of observation to Architect for information.
    2. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

F. Erection Drawings: Submit drawings for Architect's benefit as contract administrator or for Owner.
   1. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.
   2. Data indicating inappropriate or unacceptable Work may be subject to action by Architect or Owner.

1.4 REFERENCES AND STANDARDS - See Section 01425

1.5 TESTING AND INSPECTION AGENCIES

A. Contractor will employ and pay for services, from Testing Allowances, of an independent testing agency to perform specified testing and inspection.
B. Testing Agency of record: The Testing Agency of Record shall be identified by the Owner within 15 days of the Letter of Intent.
C. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.
D. Additional services as requested by Architect
E. Testing Agency:
   1. Testing agency: Comply with requirements of ASTM E 329, ASTM E 548, ASTM E 543, ASTM C 1021, ASTM C 1077, ASTM C 1093, and ASTM C 1021.
   2. Inspection agency: Comply with requirements of ASTM D290.
   3. Laboratory: Authorized to operate in State in which Project is located.
   4. Laboratory Staff: Maintain a full time registered Engineer on staff to review services.
   5. Testing Equipment: Calibrated at reasonable intervals with devices of accuracy traceable to either National Bureau of Standards or accepted values of natural physical constants.

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION

3.1 CONTRACTOR CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
B. Comply with manufacturers' instructions, including each step in sequence.
C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
E. Have Work performed by persons qualified to produce required and specified quality.
F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.2 MOCK-UPS

A. Tests will be performed under provisions identified in this section and identified in the respective product specification sections.
B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, accessories and finishes.
C. Accepted mock-ups shall be a comparison standard for the remaining Work.
D. Where mock-up has been accepted by Architect and is specified in product specification sections to be removed, remove mock-up and clear area when directed to do so.

3.3 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
B. Comply with manufacturer's tolerances. Should manufacturer's tolerances conflict with Contract Documents, request clarification from Architect before proceeding.
C. Where specified tolerances within individual sections exceed those accepted by the Manufacturer, comply with the more astringent tolerances specified.
D. Adjust products to appropriate dimensions; position before securing products in place.

3.4 TESTING AND INSPECTION

A. See individual specification sections for testing and inspection required.
B. Testing Agency Duties:
    1. Test samples of mixes submitted by Contractor.
    2. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
    3. Acquaint Architect's personnel with testing procedures and with all special conditions encountered at the site.
    4. Perform specified inspections, sampling and testing of products in accordance with specified standards.
    5. Ascertain compliance of materials and mixes with requirements of Contract Documents.
    6. Promptly notify Architect and Contractor of observed irregularities or non-conformance of Work or products.
    7. Perform additional tests and inspections required by Architect.
    8. Attend preconstruction meetings and progress meetings as directed by Architect.
    9. Submit reports of all tests/inspections specified.
    10. Obtain written acknowledgement of each inspection, sampling and test made from subcontractor whose work is being tested.
C. Limits on Testing/Inspection Agency Authority:
    1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
    2. Agency may not approve or accept any portion of the Work.
    3. Agency may not assume any duties of Contractor.
    4. Agency has no authority to stop the Work.
D. Contractor Responsibilities:
    1. Provide to agency at designated location, adequate samples of materials proposed to be used which require testing, along with proposed mix designs.
    2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
        a. Monitor or direct superintendent to monitor each inspection, sampling and test.
        b. Provide laboratory with written acknowledgement of each inspection, sampling or test.
        c. Within 24 hours notify Architect in writing of reasons for not acknowledging laboratory field procedures.
    3. Furnish copies of mill test reports.
    4. Furnish verification of compliance with contract requirements for materials and equipment
    5. Provide incidental labor and facilities:
        a. To provide access to Work to be tested/inspected.
        b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
        c. To facilitate tests/inspections.
        d. To provide storage and curing of test samples.
    6. Notify Architect and laboratory 48 hours prior to expected time for operations requiring testing/inspection services.
    7. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
    8. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.

9. Correct work which is defective or which fails to conform to the Contract Documents in accordance with the General conditions. Corrective work shall not delay the project schedule or the work of other subcontractors.
10. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by Architect. Payment for retesting will be charged to the Contractor by deducting testing charges from the Contract Price.

3.5 MANUFACTURERS' FIELD SERVICES

A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.
B. Submit qualifications of observer to Architect 30 days in advance of required observations.
   1. Observer subject to approval of Architect.
   2. Observer subject to approval of Owner.
C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturer's written instructions.

3.6 DEFECT ASSESSMENT

A. Replace Work or portions of the Work not conforming to specified requirements.
B. If, in the opinion of Architect, it is not practical to remove and replace the Work, Architect will direct an appropriate remedy or adjust payment.

END OF SECTION

SECTION 01425

REFERENCE STANDARDS

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Requirements relating to referenced standards.
B. Reference standards full title and edition date.

1.2 RELATED SECTIONS
A. Document 00700 - General Conditions: Reference standards.

1.3 QUALITY ASSURANCE
A. For products or workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
B. Conform to reference standard of date of issue specified in this section, except where a specific date is established by applicable code.
C. Obtain copies of standards when required by the Contract Documents.
D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
E. Should specified reference standards conflict with Contract Documents, request clarification from the Architect before proceeding.
F. Neither the contractual relationships, duties or responsibilities of the parties in Contract nor those of the Architect shall be altered by the Contract Documents by mention or inference otherwise in any reference document.

PART 2 – CONSTRUCTION INDUSTRY ORGANIZATION DOCUMENTS

2.1 AA – ALUMINUM ASSOCIATION, INC.
A. AA ADM-1 - Aluminum Design Manual; 2000.
B. AA DAF-45 - Designation System for Aluminum Finishes; 2003.
C. AA SAAA-46 - Standards for Anodized Architectural Aluminum; 1978.
D. AA BDAS-516161 - Behavior and Design of Aluminum Structures; 1992.

2.2 AABC -- ASSOCIATED AIR BALANCE COUNCIL
A. AABC MN-1 - AABC National Standards for Total System Balance; 2002.

2.3 AAMA -- AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION
A. AAMA/NWWDA 101/I.S.2 - Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors; 1997 with revisions contained in "reprinting" of 12/99.
B. AAMA 303 - Voluntary Specification for Poly (Vinyl Chloride) (PVC) Exterior Profile Extrusions; 2000.
C. AAMA 501 - Methods of Test for Exterior Walls; 1994.
D. AAMA 501.1 - Standard Test Method for Exterior Windows, Curtain Walls and Doors for Water Penetration Using Dynamic Pressure; 1994 (part of AAMA 501).
E. AAMA 501.2 - Field Check of Metal Storefronts, Curtain Walls, and Sloped Glazing Systems for Water Leakage; 1994 (part of AAMA 501).
F. AAMA 501.3 - Field Check of Water Penetration Through Installed Exterior Windows, Curtain Walls, and Doors by Uniform Air Pressure Difference (part of AAMA 501); 1994.
G. AAMA 603.8 - Voluntary Performance Requirements and Test Procedures for Pigmented Organic Coatings on Extruded Aluminum; 1998.
H. AAMA 605.2 - Voluntary Specification for High Performance Organic Coatings on Architectural Aluminum Extrusions and Panels; 1998.
I. AAMA 606.1 - Voluntary Guide Specifications and Inspection Methods for Integral Color Anodic Finishes for Architectural Aluminum; 1976.

J. AAMA 607.1 - Voluntary Guide Specification and Inspection Methods for Clear Anodic Finishes For Architectural Aluminum; 1977.
K. AAMA 608.1 - Voluntary Guide Specification and Inspection Methods for Electrolytically Deposited Color Anodic Finishes for Architectural Aluminum; 1977.
L. AAMA 609 - Voluntary Guide Specification for Cleaning and Maintenance of Architectural Anodized Aluminum; 2002.
M. AAMA 610.1 - Voluntary Guide Specification for Cleaning and Maintenance of Painted Aluminum Extrusions and Curtain Wall Panels; 1979.
N. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 1998.
O. AAMA 701/702 - Combined Voluntary Specifications for Pile Weatherstrip and Replaceable Fenestration Weatherseals; 2000.
P. AAMA 800 - Voluntary Specifications and Test Methods for Sealants; 1992, Addendums 1994, 2000.
Q. AAMA 802.3 - Compound (Part of AAMA 800); 1992.
R. AAMA 803.3 - Voluntary Specifications and Test Methods for Narrow Joint Seam Sealer (Part of AAMA 800); 1992.
S. AAMA 804.3 - Sealants: Back Bedding Mastic Type Glazing Tapes (Part of AAMA 800); 1992.
T. AAMA 806.3 - Tape (Part of AAMA 800); 1992.
U. AAMA 807.3 - Glazing Tape (Part of AAMA 800); 1992.
V. AAMA 809.2 - Sealants: Non-Drying Sealant (Part of AAMA 800); 1992.

PART 3 – EXECUTION – NOT USED

END OF SECTION

SECTION 01600

PRODUCT REQUIREMENTS

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. General product requirements.
B. Transportation, handling, storage and protection.
C. Product option requirements.
D. Substitution limitations and procedures.
E. Procedures for Owner-supplied products.
F. Spare parts and maintenance materials.

1.2 RELATED SECTIONS
A. Document 00100 - Instructions to Bidders: Product options and substitution procedures prior to bid date.
B. Section 01400 - Quality Requirements: Product quality monitoring.

1.3 REFERENCES
A. NFPA 70 - National Electrical Code; National Fire Protection Association; 2002.

1.4 SUBMITTALS
A. Proposed Products List: Submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product; submit 3 copies to Architect.
   1. Submit within 20 days after date of Letter of Intent.
   2. For products specified only by reference standards, list applicable reference standards.
B. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
C. Shop Drawing Submittals: Prepared specifically for this Project.
D. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
   1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.
E. Indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
F. Provide name and address of similar projects on which product was used and date of installation.
G. Provide detailed description and drawings illustrating construction methods.
H. Provide itemized comparison and accurate cost data of proposed substitution in comparison with product or method specified.
I. Provide data relating to changes in contracts, coordination issues, and construction schedules.
J. Manufacturer's Instructions: When Contract Documents specify that installation shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to all parties involved in the installation, including three copies to the Architect.

PART 2 – PRODUCTS

2.1 NEW PRODUCTS
A. Provide new products unless specifically required or permitted by the Contract Documents.
B. Motors: Refer to Section 15065, NEMA MG 1 Type. Specific motor type is specified in individual specification sections.
C. Materials and Equipment Incorporated Into The Work
   1. NO MATERIAL OR PRODUCT SHALL BE DELIVERED TO, PROVIDED FOR OR INSTALLED ON PROJECT WHICH CONTAINS ANY ASBESTOS OR ASBESTOS-CONTAINING MATERIAL.
   2. Conform to project specifications and standards.
   3. Comply with size, make, type and quality specified.

4. Manufactured and fabricated products:
   a. Design, fabricate and assemble in accord with best engineering and shop practices.
   b. Manufacture like parts of duplicate units to standard sizes and gages, to be interchangeable.
   c. Two or more items of the same kind shall be identical from the same manufacturer.
   d. All parts of systems shall be from the same manufacturer to the greatest extent practicable.
   e. Adhere to equipment capacities, sizes and dimensions shown or specified unless variations are specifically approved by Change Order.

2.2 PRODUCT OPTIONS

A. Base all bids on providing all products exactly as specified.
B. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
C. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
D. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

2.3 SPARE PARTS AND MAINTENANCE PRODUCTS

A. Provide spare parts, maintenance, and extra products of types and in quantities specified in individual specification sections.
B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 – EXECUTION

3.1 SUBSTITUTION PROCEDURES

A. Instructions to Bidders specify time restrictions for submitting requests for substitutions during the bidding period. Comply with requirements specified in this section.
B. Architect will consider requests for substitutions only within 20 days after date of Letter of Intent.
C. Substitutions may be considered at a later date only when a product becomes unavailable through no fault of the Contractor.
D. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
E. For products specified only by reference or performance standards, select any product which meets or exceeds standards, by any manufacturers, subject to the Architect's approval.
F. For products specified by naming several products or manufacturers, select any product and manufacturer named which conforms to the intent of the documents.
G. Substitutions, Bidder/Contractor Options
   1. Prior to Bid Opening: The Architect will consider written requests to amend the bidding documents to add products not specified provided such requests are received at least 10 calendar days prior to bid opening date. Requests received after that time will not be considered. When a request is approved, the Architect will issue an appropriate addendum not less than three calendar days prior to the bid opening.
   2. With Bid: A bidder may propose substitutions with his bid by completing the Substitution Sheet with the Bid Form, subject to the provisions stated thereon. Architect will review Substitution Sheet of low bidder and recommend approval or rejection by Owner prior to award of Contract.
   3. After Award of Contract: No substitutions will be considered after Notice of Award except under one or more of the following conditions:
      a. Substitutions required for compliance with final interpretations of code requirements or insurance regulations.
      b. Unavailability of specified products, through no fault of Contractor or subcontractor.

c. Subsequent information discloses inability of all specified products to perform properly or to fit in designated space.
d. Manufacturer/fabricator refusal to certify or guarantee performance of specified product as specified.
e. When a substitution would be substantially beneficial to the Owner.

H. A request for substitution constitutes a representation that the submitter:
1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
2. Will provide the same warranty for the substitution as for the specified product.
3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
4. Waives claims for additional costs or time extension which may subsequently become apparent.
5. Will reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.

I. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

J. Substitution Submittal Procedure:
1. Submit three copies of request for substitution for consideration. Limit each request to one proposed substitution.
2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
3. The Architect will notify Contractor in writing of decision to accept or reject request.
4. Complete data substantiating compliance of proposed substitution with Contract Documents.
5. For products:
a. Product identification, including manufacturer's name and address.
b. Manufacturer's literature:
1) Product description.
2) Performance and test data.
3) Reference standards.
c. Samples.
d. Name and address of similar projects on which product was used and date of installation.
6. For construction methods:
a. Detailed description of proposed method.
b. Drawings illustrating methods.
7. Itemized comparison of proposed substitutions with product or method specified.
8. Data relating to changes in construction schedules.
9. Identify:
a. Other contract affected.
b. Changes or coordination required.
10. Accurate cost data on proposed substitution in comparison with product or method specified.

K. Provide cost data that is complete and includes all related costs under Bidder/Contractor contract, but excludes:
1. Costs under separate contracts.
2. Architect's redesign.
3. Administrative costs of Architect.

3.2 OWNER-SUPPLIED PRODUCTS

A. See Section 01100 - Summary for identification of Owner-supplied products.

B. Owner's Responsibilities:
1. Arrange for and deliver Owner reviewed shop drawings, product data, and samples, to Contractor.
2. Arrange and pay for product delivery to site.
3. On delivery, inspect products jointly with Contractor.

4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
5. Arrange for manufacturer's warranties, inspections, and service.

C. Contractor's Responsibilities:
1. Review Owner reviewed shop drawings, product data, and samples.
2. Receive and unload products at site; inspect for completeness or damage jointly with Owner.
3. Handle, store, install and finish products.
4. Repair or replace items damaged after receipt.

3.3 TRANSPORTATION AND HANDLING

A. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
B. Transport and handle products in accordance with manufacturer's instructions.
C. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
D. Arrange for transportation and deliveries of materials and equipment in accordance with approved current construction schedules and in ample time to facilitate inspection prior to installation.
E. Coordinate deliveries to avoid conflict with work and condition at site.
F. Deliver products in undamaged condition in original containers or packaging, with identifying labels intact and legible. Clearly mark partial deliveries of component parts of assemblies or equipment to permit easy identification of parts and to facilitate assembly.
G. Lift packages, equipment, or components only at designated lift points.
H. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
I. Provide equipment and personnel, including those furnished by Owner, to handle products by methods to prevent soiling, disfigurement, or damage.
J. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.4 STORAGE AND PROTECTION

A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
B. Store and protect products in accordance with manufacturer's instructions.
C. Store with seals and labels intact and legible.
D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product. Materials may be new or used at Contractor's option, but shall be non-staining, non-hazardous, and of sufficient strength and durability for proposed use.
E. Submittals
1. Request for allocation of storage space.
2. List of materials and equipment to be stored.
3. Proposed location for storage.
4. Special storage requirements.
5. Schedule of anticipated storage dates.

F. For exterior storage of fabricated products, place on sloped supports above ground.
G. Provide bonded off-site storage and protection when site does not permit on-site storage or protection. Off-site storage will be permitted only on Owner's prior written authorization in accordance with General Conditions.
H. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
I. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
J. Prevent contact with material that may cause corrosion, discoloration, or staining.
K. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
L. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

M. Locate storage areas where authorized by Architect, Contractor will resolve conflicts in storage requirements of all subcontractors. Do not inhibit use of:
   1. Fire exits.
   2. Fire lanes.
   3. Parking.
   4. Work of other contractors.
   5. Owner.

N. Provide separate storage for combustible and non-combustible products. Store combustible materials in accordance with Fire Protection Agency's regulations.

O. Remove all temporary storage, contents and utilities at completion of construction activities or when requested by the Architect.

END OF SECTION

SECTION 01700

EXECUTION REQUIREMENTS

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Examination, preparation, and general installation procedures.
B. Pre-installation meetings.
C. Cutting and patching.
D. Surveying for laying out the work.
E. Cleaning and protection.
F. Starting of systems and equipment.
G. Demonstration and instruction of Owner personnel.
H. Closeout procedures, except payment procedures.

1.2 RELATED SECTIONS

A. Section 01300 - Administrative Requirements: Submittals procedures.
B. Section 01400 - Quality Requirements: Testing and inspection procedures.
C. Section 01780 - Closeout Submittals: Project record documents, operation and maintenance data, warranties and bonds.

1.3 SUBMITTALS

A. See Section 01300 - Administrative Requirements, for submittal procedures.
B. Survey work: Submit name, address, and telephone number of Surveyor before starting survey work.
    1. On request, submit documentation verifying accuracy of survey work.
    2. Submit a copy of site drawing signed by the Land Surveyor, that the elevations and locations of the work are in conformance with Contract Documents. Include the following data:
    3. Architect may at any time require written verifications of grades, lines and levels by a licensed surveyor as work progresses.
    4. All areas found to be non-conforming to the Contract Documents shall be corrected by the responsible Contractor.
    5. Submit surveys and survey logs for the project record.
C. Cutting and Patching: Submit written request in advance of cutting or alteration which affects:
    1. Structural integrity of any element of Project.
    2. Integrity of weather exposed or moisture resistant element.
    3. Efficiency, maintenance, or safety of any operational element.
    4. Visual qualities of sight exposed elements.
    5. Work of Owner or separate Contractor.
    6. Include in request:
        a. Identification of Project.
        b. Location and description of affected work.
        c. Necessity for cutting or alteration.
        d. Contractor and crafts to execute the work.
        e. Description of proposed work and products to be used.
        f. Extent of refinishing.
        g. Alternatives to cutting and patching.
        h. Effect on work of Owner or separate Contractor.
        i. Written permission of affected separate Contractor.
        j. Date and time work will be executed.
D. Designation of party responsible for cost of cutting and patching.
E. When conditions of work, or schedule, indicate change of materials or methods, submit recommendation to Architect, including:
    1. Condition indicating change.
    2. Recommendation for alternative materials or methods.
    3. Submittals specified for substitutions.

F. Submit written notice to Architect, designating time work will be uncovered, to provide for observation.
G. Payment for Costs:
   1. Costs caused by ill-timed or defective work, or work not conforming to Contract Documents, including costs for additional services of Architect - party responsible for ill timed, rejected or non-conforming work.
   2. Work done by change order, other than defective or non-conforming work - Owner.

1.4 GRADES, LINES AND LEVELS

A. Contractor lay out all of the work under this contract.
   1. Establish all working lines, levels, elevations and measurements.
B. Owner will furnish:
   1. A certified topographic survey of existing site, giving all grades and lines of streets, alleys, pavements and adjoining property, rights-of-way, encroachments, boundaries and contours of building site.
   2. Locations, dimensions and data pertaining to existing:
      a. Buildings.
      b. Underground obstructions.
      c. Trees and landscaping.
      d. Other improvements.
   3. Information as to available service and utility lines, both public and private.
C. Location of survey's baseline control points.
   1. Benchmark and temporary benchmark location and elevation of each.
D. Quality Assurance
   1. All layout work which establishes site layout dimensions or elevations or exterior building dimensions, angles or grade floor elevations shall be done by a qualified engineer or surveyor.
   2. Qualifications of Contractor's Engineer/Surveyor:
      a. Experienced in layout work of similar complexity.
      b. Licensed by State of Illinois.
E. Submittals. Architect may at any time require written verification of grades, lines and levels by a licensed surveyor as work progresses.
F. Laying Out The Work
   1. Prior to the beginning of the actual work, perform the following:
      a. Each subcontractor shall lay out their portion of the work.
      b. Establish all required bench marks and reference lines.
      c. Verify all building dimensions.
      d. Verify conformance of all actual general dimensions with those indicated on the Architect's plan.
      e. Notify the Architect immediately if any conflict whatsoever exists.
G. Survey Upon Completion
   1. Upon completion, Owner may provide a survey performed by a licensed surveyor indicating the location of the Work of this Contract and including the following data:
      a. Building location and dimensions of all walls.
      b. Elevations of finished floor at all exterior exits.
      c. Spot elevations, storm, sanitary and watermain manholes, and all invert elevations.
      d. Spot elevations of corners of all new pavement and on a 50' grid within paved areas.
   2. All areas found to be non-conforming to the Contract Documents shall be corrected by the responsible Contractor.

1.5 QUALIFICATIONS

A. For survey work, employ a land surveyor registered in the State in which the Project is located and acceptable to Architect. Submit evidence of Surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate.
B. For field engineering, employ a professional engineer of the discipline required for specific service on Project, licensed in the State in which the Project is located.

1.6 PROJECT CONDITIONS

A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.
C. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
D. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere.
E. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
    1. Minimize amount of bare soil exposed at one time.
    2. Provide temporary measures such as berms, dikes, and drains, to prevent water flow.
    3. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
    4. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
F. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
G. Pest Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.
H. Rodent Control: Provide methods, means, and facilities to prevent rodents from accessing or invading premises.
I. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.

1.7 COORDINATION

A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
B. Notify affected utility companies and comply with their requirements.
C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
D. Coordinate space requirements, supports, and installation of mechanical and electrical work which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
F. Coordinate completion and clean-up of work of separate sections.
G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 – PRODUCTS

2.1 PATCHING MATERIALS

A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01600.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
B. Verify that demolition is complete in alterations areas and areas are ready for installation of new work.
C. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
D. Examine and verify specific conditions described in individual specification sections.
E. Verify in field all measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or mis-fabrication.
F. Verify that utility services are available, of the correct characteristics, and in the correct locations.
G. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.2 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.
B. Seal cracks or openings of substrate prior to applying next material or substance.
C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.3 PREINSTALLATION MEETINGS

A. When required in individual specification sections, convene a pre-installation meeting at the 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 four days in advance of meeting date.
D. Prepare agenda and preside at meeting:
    1. Review conditions of examination, preparation and installation procedures.
    2. Review coordination with related work.
E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.4 LAYING OUT THE WORK

A. Verify locations of survey control points prior to starting work.
B. Promptly notify Architect of any discrepancies discovered.
C. Contractor shall locate and protect survey control and reference points.
D. Control datum for survey is that established by Owner provided survey.
E. Protect survey control points prior to starting site work; preserve permanent reference points during construction.

F. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
G. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.
H. Utilize recognized engineering survey practices.
I. Establish a minimum of two permanent bench marks on site, referenced to established control points. Record locations, with horizontal and vertical data, on project record documents.
J. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
    1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
    2. Grid or axis for structures.
    3. Building foundation, column locations, and ground floor elevations.
K. Periodically verify layouts by same means.
L. Maintain a complete and accurate log of control and survey work as it progresses.
M. On completion of foundation walls and major site improvements, prepare a certified survey illustrating dimensions, locations, angles, and elevations of construction and site work.

3.5 GENERAL INSTALLATION REQUIREMENTS

A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.6 CUTTING AND PATCHING

A. Execute cutting and patching including excavation and fill to complete the work, to uncover work in order to install improperly sequenced work, to remove and replace defective or non-conforming work, to remove samples of installed work for testing when requested, to provide openings in the work for penetration of mechanical and electrical work, to execute patching to complement adjacent work, and to fit products together to integrate with other work.
B. Execute work by methods to avoid damage to other work, and which will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
C. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
D. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
E. Restore work with new products in accordance with requirements of Contract Documents.
F. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
G. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
H. Make neat transitions. Patch work to match adjacent work in texture and appearance. Where new work abuts or aligns with existing, perform a smooth and even transition.
I. In addition to contract requirements, upon written instructions of Architect.
    1. Uncover work to provide for observation of covered work.
    2. Remove samples of installed materials for testing.
J. Do not endanger work by cutting or altering work or any part of it.
K. Do not cut or alter work without written consent of Architect.
L. Patch or replace surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. Repair substrate prior to patching finish. Finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections.

3.7 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.8 PROTECTION OF INSTALLED WORK

A. Protect installed work from damage by construction operations.
B. Provide special protection where specified in individual specification sections.
C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
G. Prohibit traffic from landscaped areas.
H. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

3.9 STARTING SYSTEMS

A. Coordinate schedule for start-up of various equipment and systems with Architect and Owner's Representative..
B. Notify Architect and owner two days prior to start-up of each item.
C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions which may cause damage.
D. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
E. Verify that wiring and support components for equipment are complete and tested.
F. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.
G. When specified in individual specification Sections, require manufacturer and/or equipment supplier to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.
H. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.10 DEMONSTRATION AND INSTRUCTION

A. Demonstrate operation and maintenance of products to Owner's personnel two weeks prior to date of Substantial Completion.
B. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.
C. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
D. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of owner personnel.
E. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.

F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.
G. The amount of time required for instruction on each item of equipment and system is that specified in individual sections.
H. Air and Water Testing, Adjusting and Balancing
   1. Testing, adjusting and balancing will be part of the mechanical contract.
   2. The mechanical subcontractor will perform services specified in Division 15.
   3. Reports will be submitted by the Mechanical subcontractor to the Architect indicating observation and results of test and indicating compliance or non-compliance with the specified requirements and with the requirements of the Contract Documents.

3.11 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.12 FINAL CLEANING

A. Execute final cleaning prior to final project assessment.
   1. Clean areas to be occupied by Owner prior to final completion before Owner occupancy.
B. Use cleaning materials that are non-hazardous.
C. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
E. Clean filters of operating equipment.
F. Clean debris from roofs, gutters, downspouts, and drainage systems.
G. Clean site; sweep paved areas, rake clean landscaped surfaces.
H. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.
I. Contractor provide final cleaning at completion of work, or at such other times as directed by the Architect, remove all waste, debris, rubbish, tools, equipment, machinery and surplus materials. Clean all sight exposed surfaces; leave work clean and ready for occupancy.
J. Safety Requirements
   1. Standards: Maintain project in accord with following safety and insurance standards:
      a. Federal and state regulations.
      b. National Fire Protection Association (NFPA).
   2. Hazards Control:
      a. Store volatile wastes in covered metal containers and remove from premises daily.
      b. Prevent accumulation of wastes which create hazardous conditions.
      c. Provide adequate ventilation during use of volatile or noxious substances.
   3. Conduct cleaning and disposal operations to comply with Federal and State anti-pollution laws.
      a. Do not burn or bury rubbish and waste materials on project site.
      b. Do not dispose of volatile wastes such as mineral spirits, oil or paint thinner in storm or sanitary drains.
      c. Do not dispose of wastes into streams or waterways.
K. Submittals
   1. Manufacturer's recommendations for cleaning specified products.
   2. Proposed cleaning products for products where manufacturer's recommendations are not specified.
L. Materials
   1. Select and use all cleaning materials and equipment with care to avoid scratching, marring, defacing, staining or discoloring surfaces cleaned.
   2. Use only cleaning materials recommended by manufacturer of surface to be cleaned.
   3. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

M. Final Cleaning
   1. Employ experienced workers or professional cleaners for final cleaning.
   2. Remove grease, dust, dirt, stains, labels, fingerprints, protection and other foreign materials from sight-exposed finished surfaces.
      a. In preparation for substantial completion or occupancy, conduct final inspection of sight-exposed surfaces, and of concealed spaces to insure performance.
   3. Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.
   4. Soft broom clean all exposed concrete surfaces clean; other paved areas with soft or stiff broom as directed. Rake clean other surfaces on grounds.
   5. Sweep and mop clean all resilient, quarry and ceramic flooring.
   6. Vacuum all carpeting.
   7. Remove ice and snow from access to buildings.
   8. Replace air handling and conditioning filters if units were operated during construction.
   9. Clean all ductwork used for temporary heating.
   10. Clean windows and mirrors to be free from labels, dust, fingerprints and other foreign materials.
   11. Maintain finally cleaned areas until project, or designated portion thereof, is accepted by Owner.

3.13 CLOSEOUT PROCEDURES

A. Make submittals that are required by governing or other authorities.
   1. Provide copies to Architect and Owner.
B. Contractor to determine items to be listed for completion or correction in Contractor's Notice of Substantial Completion.
C. Notify Architect when work is considered ready for Substantial Completion.
D. Submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's review.
E. Substantial Completion Meeting will be scheduled by Architect. Architect will issue notice of meeting.
   1. Agenda will consist of the inspection, discussion of the punch list, determination of final completion dates, and the date and time the Owner will take occupancy. Architect will also review the requirements for contractor closeout in accord with the contract documents.
   2. Upon completion of this meeting, the Architect shall prepare the Certificate of Substantial Completion with the completed punch list and forward the package to the Contractor.
F. Owner will occupy all of the building as specified in Section 01100.
G. Contractor will correct items of work listed in punch list and comply with requirements for access to Owner-occupied areas.
H. Notify Architect when work is considered finally complete.
I. Accompany Architect on final inspection.
J. Complete items of work determined by Architect's final inspection.

END OF SECTION

SECTION 01780

CLOSEOUT SUBMITTALS

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Project Record Documents.
B. Operation and Maintenance Data.
C. Warranties and bonds.

1.2 RELATED SECTIONS
A. Conditions of the Contract: Performance bond and labor and material payment bonds, warranty, and correction of work.
B. Section 01300 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
C. Section 01700 - Execution Requirements: Contract closeout procedures.
D. Individual Product Sections: Specific requirements for operation and maintenance data.
E. Individual Product Sections: Warranties required for specific products or Work.

1.3 SUBMITTALS
A. Substantial Completion
    1. When Contractor considers work substantially complete, submit written declaration to Architect that work, or designated portion thereof, is substantially complete. Include list of items to be completed or corrected.
    2. Architect will make a preliminary inspection within seven business days after receipt of Contractor's declaration.
    3. Upon determining that work is substantially complete, Architect will:
        a. Prepare a punch list of items to be completed or corrected, as determined by the inspection.
        b. Prepare and process a certificate of substantial completion, containing:
            1) Date of substantial completion.
            2) Punch list of items to be completed or corrected.
            3) The time within which punch list items shall be completed or corrected.
            4) Date and time Owner will take occupancy of project or designated portion thereof.
            5) Responsibilities of Owner and Contractor for:
                a) Insurance
                b) Utilities.
                c) Operation and maintenance of mechanical, electrical and other systems.
                d) Maintenance and cleaning.
                e) Security
            6) Signatures of:
                a) Architect
                b) Contractor.
                c) Owner.
    4. Contractor:
        a. Complete all work listed for completion or correction within designated time.
        b. Perform final cleaning in accordance with 01700.
    5. At time of inspection, should substantial completion not be certified, complete the work and resubmit declaration in accord with Paragraph A.1 above.
B. Final Completion
    1. Contractor:
        a. Submit written declaration to Architect that:
            1) Work complies with all aspects of Contract Documents.
            2) All items on substantial completion punch list have been completed or corrected.
            3) All tools, construction equipment and surplus materials have been removed from site.
            4) Required surveys have been completed and verified.
    2. Architect will make final inspection with Contractor to ensure completion of all contract requirements.

3. When Architect considers that all work is finally complete in accordance with contract document requirements, he will prepare and process closeout documents.

C. Application for Final Payment
   1. Contractor submit duly executed:
      a. Final Affidavit and Sworn Statement.
      b. Contractor's Final Waiver of Lien.
      c. Separate releases of waivers of liens for all subcontractors, suppliers and others with lien rights against property of Owner, together with complete list of those parties.
      d. Final accounting statement, reflecting all adjustments to contract sum.
         1) Original contract sum.
         2) Additions and deductions resulting from:
            a) All change orders.
            b) Deductions for uncorrected work.
            c) Deductions for liquidated damages.
      e. Total contract sum, as adjusted.
      f. Previous payments.
      g. Sum remaining due.
   2. Architect will process final statement in accordance with Conditions of the Contract.

D. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
   1. Accompany submittal with transmittal letter, in duplicate, containing:
      a. Date.
      b. Project title and number.
      c. Contractor's name and address.
      d. Title and number of each record document.
   2. Certification that each document submitted is complete and accurate.
      a. Signature of contractor, or his authorized representative.
   3. Submit 1 copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
   4. Submit one hard copy set and two Compact Disc containing electronic copies (in PDF file format) of revised final documents in final form within 10 days after final inspection.

E. Operation and Maintenance Data:
   1. The contractor shall cause each mechanical and electrical subcontractor to provide the Contractor with two hard copies and one electronic copy of all operating manuals at the time of delivery of each major piece of equipment.
   2. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect will review draft and return one copy with comments.
   3. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
   4. Submit 1 copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
   5. Submit two hard copy sets and two Compact Disc containing electronic copies (in PDF file format) of revised final documents in final form within 10 days after final inspection.

F. Warranties and Bonds:
   1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within ten days after acceptance.
   2. Make other submittals within ten days after Date of Substantial Completion, prior to final Application for Payment.
   3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within ten days after acceptance, listing the date of acceptance as the beginning of the warranty period.

4. **Because the warranty period begins with the issuance of the final payment from The District to the general contractor, all warranties should include the verbiage "…for a period of (X) year(s) after the date The District issues the final payment to the General Contractor…"**

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION

3.1 PROJECT RECORD DOCUMENTS

A. Contractor and all subcontractors shall maintain an accurate record of deviations and changes from the Contract Documents which occur in the work.
B. Indicate all such deviations and changes on a record set of the Contract Documents and turn same over to the Architect and Owner upon completion of the Work all such documents and information such as final shop drawings and sketches, marked prints and similar data indicating the as-built conditions.
C. Create an electronic copy of all approved Project Record Documents in PDF file format and deliver to Architect and Owner on Compact Disc.
D. Compact Discs: High quality CD-R format Compact Disc formatted for use by Microsoft Windows based computers. Rewriteable Compact Discs will not be accepted. Provide labels on all Compact Discs listing the Owner's name, Project name, Contractor's name, Date of Submittal, and the title "Project Record Documents".
E. Maintain on site one set of the following record documents; record actual revisions to the Work:
   1. Drawings.
   2. Project Manual.
   3. Interpretations and supplemental instructions.
   4. Specifications.
   5. Addenda.
   6. Change Orders and other modifications to the Contract.
   7. Reviewed shop drawings, product data, and samples.
   8. Manufacturer's instruction for assembly, installation, and adjusting.
   9. Other modifications to contract.
   10. Field test records.
   11. All schedules.
   12. Correspondence file.
F. Ensure entries are complete and accurate, enabling future reference by Owner.
G. Store record documents separate from documents used for construction.
H. Record information concurrent with construction progress.
I. File documents in format in accord with Project Manual Table of Contents.
J. Do not use record documents for field construction purposes.
K. Make documents available at all times for inspection by Architect and Owner.
L. Plans and sections of all concealed work, particularly concealed piping and conduit, and deviations from conditions shown on the contract drawings, shall be shown and dimensioned on the "as-built" drawings.
M. Contractor shall develop layout drawings for all concealed work that is schematically indicated on contract drawings.
N. Provide red colored pencils or felt marking pens for marking devices.
O. Do not permanently conceal any work until specified information has been recorded.
P. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
   1. Manufacturer's name and product model and number.
   2. Product substitutions or alternates utilized.
   3. Changes made by Change Order or Field Order.

4. Other matters not originally specified.

Q. Label each record document "PROJECT RECORD DOCUMENTS" in large print. Keep record documents current.

R. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
   1. Measured depths of foundations in relation to finish first floor datum.
   2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
   3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
   4. Field changes of dimension and detail.
   5. Changes made by change order.
   6. Details not on original Contract drawings.

S. Shop Drawings: Maintain as record documents; legibly annotate drawings to record changes made after review.

T. Completed Work Survey: Requirements specified in Section 01700 - Execution Requirements.

3.2 OPERATION AND MAINTENANCE DATA

A. Compile product data and related information appropriate for Owner's maintenance and operation of products and equipment provided under the Contract.

B. For Each Product or System: List names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.

C. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.

D. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Coordinate drawings with information in Product Record Documents to assure correct illustration of completed installation. Do not use Project Record Documents as maintenance drawings.

E. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

F. Warranty, Bond, and Service Contract: Provide information sheet for Owner's personnel with proper procedures in event of failure and instances which might affect validity of warranties of bonds.

3.3 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

A. Submit two hard copies and two Compact Discs with electronic copies (in PDF file format) of complete manual in final form.

B. For Each Product, Applied Material, and Finish:
   1. Product data, with catalog number, size, composition, and color and texture designations.
   2. Information for re-ordering custom manufactured products.

C. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.

D. 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.

E. Additional information as specified in individual product specification sections.

F. Provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

3.4 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

A. Submit two hard copies and two Compact Discs with electronic copies (in PDF file format) of complete manual in final form.

B. For Each Item of Equipment and Each System:
   1. Description of unit or system, and component parts.

2. Identify function, normal operating characteristics, and limiting conditions.
3. Include performance curves, with engineering data and tests.
4. Complete nomenclature and model number of replaceable parts.

C. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
D. Include color coded wiring diagrams as installed.
E. 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.
F. 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.
G. Provide servicing and lubrication schedule, and list of lubricants required.
H. Include manufacturer's printed operation and maintenance instructions.
I. Include sequence of operation by controls manufacturer.
J. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
K. Provide control diagrams by controls manufacturer as installed.
L. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.
M. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
N. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
O. Include test and balancing reports.
P. Additional Requirements: As specified in individual product specification sections.

3.5 OPERATION AND MAINTENANCE MANUALS

A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.
B. Prepare data in the form of an instructional manual.
C. Submit one copy of completed instruction manual 15 business days prior to final inspection or acceptance.
   1. Copy will be returned after final inspection or acceptance, with comments.
D. Binders: Commercial quality, 8-1/2 x 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
E. Compact Discs: High quality CD-R format Compact Disc formatted for use by Microsoft Windows based computers. Rewriteable Compact Discs will not be accepted. Provide labels on all Compact Discs listing the Owner’s name, Project name, Contractor’s name, Date of Submittal, and the title “Operation and Maintenance Manuals”.
F. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
G. Provide tabbed dividers for each separate product and system, with typed description of product and major component parts of equipment.
H. Text: Manufacturer's printed data, or typewritten data on 24 pound paper.
I. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
J. Arrange content by systems under section numbers and sequence of Table of Contents of this Project Manual.
K. Contents: Prepare a Table of Contents for each volume, with each product or system description identified, in three parts as follows:
   1. Part 1: Directory, listing names, addresses, and telephone numbers of Architect, Contractor, Subcontractors, and major equipment suppliers.

2. Part 2: Operation and maintenance instructions arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
   a. Significant design criteria.
   b. List of equipment.
   c. Parts list for each component.
   d. Operating instructions.
   e. Maintenance instructions for equipment and systems.
   f. Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
3. Part 3: Project documents and certificates, including the following:
   a. Shop drawings and product data.
   b. Air and water balance reports.
   c. Certificates.
   d. Photocopies of warranties and bonds.

L. Provide a listing in Table of Contents for design data, with tabbed dividers and space for insertion of data.

M. Table of Contents: Provide title of Project; names, addresses, and telephone numbers of Architect, Consultants, and Contractor with name of responsible parties; schedule of products and systems, indexed to content of the volume.

3.6 WARRANTIES AND BONDS

A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within ten days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.

B. Verify that documents are in proper form, contain full information, and are notarized.

C. Co-execute submittals when required.

D. Retain warranties and bonds until time specified for submittal.

E. Manual: Bind in commercial quality 8-1/2 x 11 inch three D side ring binders with durable plastic covers and provide electronic copies of all warranties and bonds in PDF file format on two Compact Discs.

F. Compact Discs: High quality CD-R format Compact Disc formatted for use by Microsoft Windows based computers. Rewriteable Compact Discs will not be accepted. Provide labels on all Compact Discs listing the Owner’s name, Project name, Contractor’s name, Date of Submittal, and the title “Warranties and Bonds”.

G. Binder Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.

H. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.

I. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

END OF SECTION

SECTION 02315

EXCAVATION

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Excavating for building volume below grade, footings, slabs-on-grade, paving, and site structures.
B. Installation and maintenance of erosion control facilities, including silt fence, straw bales, temporary sediment pond and temporary riser pipe.

1.2 RELATED SECTIONS
A. Section 02316 - Fill and Backfill: Fill materials, filling, and compacting.

1.3 PROJECT CONDITIONS
A. Verify that survey bench mark and intended elevations for the Work are as indicated.
B. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

PART 2 – PRODUCTS

2.1 EROSION CONTROL MATERIALS
A. Silt Fence:
   1. Provide silt fence at areas of exterior work.

PART 3 – EXECUTION

3.1 PREPARATION
A. Identify required lines, levels, contours, and datum locations.
B. Locate, identify, and protect utilities that remain and protect from damage.
C. Notify utility company to remove and relocate utilities.

3.2 EXCAVATING
A. Underpin adjacent structures which may be damaged by excavating work.
B. Excavate to accommodate building foundations, slabs on grade, paving, site structures, and construction operations.
C. Notify Architect of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.
D. Do not interfere with 45 degree bearing splay of foundations.
E. Hand trim excavations. Remove loose matter.
F. Remove lumped subsoil, boulders, and rock up to 1/3 cu yd measured by volume.
G. Correct areas that are over-excavated and load-bearing surfaces that are disturbed; see Section 02316.
H. Grade top perimeter of excavation to prevent surface water from draining into excavation.
I. Compact disturbed load-bearing soil in direct contact with foundations to required bearing capacity. Remove and replace unsuitable material or materials not capable of compaction in place and fill in accordance with Section 02316.
J. Remove excavated material that is unsuitable for re-use from site.
K. Remove excess excavated material from site.

3.3 FIELD QUALITY CONTROL
A. See Section 01400 - Quality Requirements, for general requirements for field inspection and testing.
B. Provide for visual inspection of load-bearing excavated surfaces before placement of foundations.

3.4 PROTECTION

A. Prevent displacement of banks and keep loose soil from falling into excavation; maintain soil stability.
B. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.

END OF SECTION

SECTION 02316

FILL AND BACKFILL

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Filling, backfilling, and compacting for building volume below grade, footings, pile caps, slabs-on-grade, paving, site structures, and utilities within the building.
B. Backfilling and compacting for utilities outside the building to utility main connections.
C. Filling holes, pits, and excavations generated as a result of removal (demolition) operations.

1.2 RELATED SECTIONS
A. Section 02315 - Excavation: Removal and handling of soil to be re-used.
B. Section 03300 - Cast-In-Place Concrete.

1.3 REFERENCES
A. Unless otherwise noted the most current issue of the reference shall be used.
B. Illinois Department of Transportation (IDOT): Standard Specifications for Road and Bridge Construction.
C. ASTM C 136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
D. ASTM D 698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3).
E. ASTM D 1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.
F. ASTM D 2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
G. ASTM D 2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).
H. ASTM D 2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
I. ASTM D 3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

1.4 DEFINITIONS
A. Finish Grade Elevations: Indicated on drawings.
B. Subgrade Elevations: 6 inches below finish grade elevations indicated on drawings, unless otherwise indicated.
C. SOIL MATERIALS:
    1. General: Provide approved borrow soil materials from off-site when sufficient approved soil materials are not available from excavations.
    2. Satisfactory Soil Materials: ASTM D2487 soil classification groups CL, GC GW, GP, GM, SW, SP, SC and SM, free of rock or gravel larger than 2 inches (50 mm) in any dimension, debris, waste, frozen materials, vegetation and other deleterious matter and as per AASHTO T180 and IDOT references above.
    3. Unsatisfactory Soil Materials: ASTM D2487 soil classification groups ML, MH, CH, OL, OH and PT and as per AASHTO T180 and IDOT references above.
    4. Subsoil Structural Fill: Select site excavated subsoil or approved off-site imported inorganic materials meeting the following requirements:
        a. Graded
        b. Free of lumps or rocks greater than three inches in size.
        c. Free of roots and other organic materials.
        d. Conforming to ASTM D2487 group symbol CL.

1.5 SUBMITTALS
A. See Section 01300 - Administrative Requirements, for submittal procedures.
B. Samples: 5 lb sample of each type of fill; submit in air-tight containers to testing laboratory.
C. Fill Composition Test Reports: Results of laboratory tests on proposed and actual materials used.

1. Test Reports: In addition to test reports required under field quality control, submit the following:
   a. Laboratory analysis of each soil material proposed for fill and backfill from on-site and borrowed sources.
   b. One optimum moisture-maximum density curve for each soil material.
   c. Report of actual unconfined compressive strength and/or results of bearing tests.

D. Compaction Density Test Reports.

1.6 PROJECT CONDITIONS

A. Provide sufficient quantities of fill to meet project schedule and requirements. When necessary, store materials on site in advance of need.
B. When fill materials need to be stored on site, locate stockpiles where designated.
   1. Separate differing materials with dividers or stockpile separately to prevent intermixing.
   2. Prevent contamination.
   3. Protect stockpiles from erosion and deterioration of materials.
C. Verify that survey bench marks and intended elevations for the Work are as indicated.

PART 2 – PRODUCTS

2.1 FILL MATERIALS

A. General Fill: Satisfactory soil materials as noted in definitions above from Subsoil excavated on-site or from off-site source.
   1. Graded.
   2. Free of lumps larger than 3 inches, rocks larger than 2 inches except where permitted by sieve analysis, and debris.
   3. Free from all organic materials, roots, black dirt, shale and chert.
B. Structural Granular Fill - Fill Type IDOT Designation CA-1: Angular crushed stone, conforming to Illinois Department of Transportation (IDOT): Standard Specifications for Road and Bridge Construction, Latest Edition. Free from Chats, Slag of any designation, Chert, Pit or Bank Run materials and Novaculite Gravel.
   1. CA-1 Composition passing sieve size and percentage under ASTM C 136: 3 inch 95 ± 5 %; 2 inch 60 ± 15 %; 1-1/2 inch, 50 ± 15; 1 inch, 3 ± 3 %.
   2. Free of organic material.
C. Concrete for Fill: Lean concrete.
D. Graded Granular Fill - Fill Type IDOT Designation CA-6: Angular crushed stone, conforming to Illinois Department of Transportation (IDOT): Standard Specifications for Road and Bridge Construction, Latest Edition. Free from Chats, Slag of any designation, Chert, Pit or Bank Run materials and Novaculite Gravel.
   1. CA-6 Composition passing sieve size and percentage under ASTM C 136: 1-1/2 inch, 100% ; 1 inch, 95 ± 5 % ; 1/2 inch, 75 ± 15%; No. 4 , 43 ± 13%; No. 16, 25 ± 15; No. 200 8 ± 4%
E. Open Granular Fill - Fill Type IDOT Designation CA-7: Angular crushed stone; free of shale, clay, friable material and debris. Conforming to Illinois Department of Transportation (IDOT): Standard Specifications for Road and Bridge Construction, Latest Edition. Free from Chats, Slag of any designation, Chert, Pit or Bank Run materials and Novaculite Gravel.
   1. CA-7 Composition passing sieve size and percentage under ASTM C 136: 1-1/2 inch, 100%; 1 inch, 95 ± 5 %; 1/2 inch, 45 ± 15%; No. 4, 5 ± 5%.
F. Sand: Natural river or bank sand; free of silt, clay, loam, friable or soluble materials, and organic matter conforming to IDOT designation FA-1.
G. Topsoil - Topsoil excavated on-site or from off-site borrow.
   1. Graded and pulverized.
   2. Free of roots, rocks larger than 1/4 inch, subsoil, debris, large weeds and foreign matter.
   3. Conforming to ASTM D2487 Group Symbol OH.

2.2 ACCESSORIES

A. Geotextile Fabric: Non-biodegradable, woven conforming to IDOT Standard Specification for Road and Bridge Construction for intended use.

2.3 SOURCE QUALITY CONTROL

A. See Section 01400 - Quality Requirements, for general requirements for testing and analysis of soil material.
B. If tests indicate materials do not meet specified requirements, change material and retest.
C. Provide materials of each type from same source throughout the Work.
D. CA-7 shall NOT be substituted for CA-6 without exception. CA-7 is not considered to be a self compacting material and must be compacted to meet or exceed project requirements.
E. Pea gravel shall not be substituted for FA-1 or any other aggregate material without express written permission of the Architect of Record--consultant approval is not sufficient.
F. The use of bank run, spherical aggregates, or other unspecified aggregate materials is strictly prohibited. No substitution shall be permitted.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Identify required lines, levels, contours, and datum locations.
B. See Section 02310 for additional requirements.
C. Verify subdrainage, damp proofing, or waterproofing installation has been inspected.
D. Verify structural ability of unsupported walls to support imposed loads by the fill.

3.2 PREPARATION

A. Scarify subgrade surface to a depth of 6 inches to identify soft spots.
B. Cut out soft areas of subgrade not capable of compaction in place. Backfill with general fill and recompact.
C. Compact subgrade to density equal to or greater than requirements for subsequent fill material.
D. If density or compaction requirements for subgrade cannot be achieved, disc, aerate and recompact subgrade for a minimum depth of 10 inches.
E. Until ready to fill, maintain excavations and prevent loose soil from falling into excavation.

3.3 FILLING

A. Fill to contours and elevations indicated using unfrozen materials.
B. Employ a placement method that does not disturb or damage other work.
C. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen or spongy subgrade surfaces.
D. Maintain optimum moisture content of fill materials to attain required compaction density.
E. Granular Fill: Place and compact materials in equal continuous layers not exceeding 8 inches compacted depth.
F. General Fill: Place and compact material in equal continuous layers not exceeding 12 inches compacted depth.
G. Slope grade away from building minimum 2 inches in 10 ft, unless noted otherwise. Make gradual grade changes. Blend slope into level areas.
H. Correct areas that are over-excavated.
    1. Other areas: Use fill required at specific location, flush to required elevation, compacted to minimum 95 percent Modified Proctor.
I. Compaction Density Unless Otherwise Specified or Indicated: As listed in Fill at Specific Locations.
J. Reshape and re-compact fills subjected to vehicular traffic.

3.4 FILL AT SPECIFIC LOCATIONS

A. Structural Fill at areas designated by Architect/Engineer:
   1. Use Fill Type CA-1.
   2. Maximum depth per lift: 6 inches, compacted.
   3. Compact to minimum 95 percent Modified Proctor.
B. Under Interior Slabs-On-Grade:
   1. Use graded Fill Type CA-6.
   2. Depth: minimum 6 inches compacted.
   3. Compact to 95 percent Modified Proctor.
C. At Foundation Walls, Footings, and foundation related items:
   1. Use Fill Type CA-6.
   2. Fill up to subgrade elevation.
   3. Maximum depth per lift: 12 inches, compacted.
   4. Compact each lift to 95 percent Modified Proctor.
   5. Do not backfill against unsupported foundation walls.
   6. Backfill simultaneously on each side of unsupported foundation walls until supports are in place.
D. Over Subdrainage Piping at Foundation Perimeter and Under Slabs:
   1. Bedding: Use open granular Fill Type CA-7. Fill to cover piping maximum of 18 inches above top edge of pipe or other items unless otherwise noted.
      a. Cover drainage piping with CA-7 for maximum 18 inches.
      b. Fill up to subgrade elevation with graded granular CA-6 in lifts not to exceed 8 compacted inches.
   2. Compact to 95 percent Modified Proctor.
E. Base material under all paved areas:
   1. Use Fill Type CA-6.
   2. Depth: minimum as indicated on Drawings.
   3. Compact in maximum 6 inch lifts to 95 percent Modified Proctor.
F. At Lawn Areas:
   1. Use general fill.
   2. Fill up to 6 inches below finish grade elevations.
   3. Compact to 85 percent Modified Proctor.
   4. See Section 02310 for topsoil placement.
G. Around all Underground structures unless otherwise noted:
   1. Bedding: CA-7 Fill to cover piping 8 inches above top edge of pipe or other items unless otherwise noted.
   2. Cover with Fill Type CA-6.
   3. Fill up to subgrade elevation.
   4. Maximum compacted depth of each lift: 8 inches.
   5. Compact to 95 percent Modified Proctor.

3.5 TOLERANCES

A. Top Surface of General Filling: Plus or minus 1 inch from required elevations.
B. Top Surface of Filling Under Paved Areas: Plus or minus 1 inch from required elevations.

3.6 FIELD QUALITY CONTROL

A. See Section 01400 - Quality Requirements, for general requirements for field inspection and testing.
B. Perform compaction density testing on compacted fill in accordance with ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D3017.
C. Evaluate results in relation to compaction curve determined by testing uncompacted material in accordance with ASTM D 698 ("standard Proctor"), ASTM D 1557 ("modified Proctor"), or AASHTO T 180.
D. If tests indicate work does not meet specified requirements, remove work, replace and retest.
E. Frequency of Tests: 1 for each 2000 SF or fraction thereof per lift.

F. Proof roll compacted fill at surfaces that will be under paving in the presence of the Testing Agency, Owner, Architect and local municipality. Proof roll with fully loaded 6-wheel dump truck. Areas with 1 inch deflection or greater shall be scarified, aerated, dried, recompacted and retested. Contractor has the option to replace material in lieu of scarification, aeration, drying and recompaction at no cost to the owner.

3.7 CLEAN UP

A. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water. Restore any vegetation to original condition.

END OF SECTION

SECTION 03100

CONCRETE FORMS AND ACCESSORIES

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Formwork for cast-in place concrete, with shoring, bracing and anchorage.
B. Openings for other work.
C. Form accessories.
D. Form stripping.

1.2 RELATED DECTIONS
A. Section 03200 - Concrete Reinforcement.
B. Section 03300 - Cast-In-Place Concrete.

1.3 REFERENCES
A. Unless otherwise noted the most current issue of the reference shall be used.
B. ACI 117 - Standard Specifications for Tolerances for Concrete Construction and Materials.
C. ACI 301 - Specifications for Structural Concrete for Buildings; American Concrete Institute International.
D. ACI 318 - Building Code Requirements for Reinforced Concrete and Commentary; American Concrete Institute International.
E. ACI 347R - Guide to Formwork for Concrete; American Concrete Institute International.
F. ASME A17.1 - Safety Code for Elevators and Escalators; The American Society of Mechanical Engineers.
G. PS 1 - Construction and Industrial Plywood; National Institute of Standards and Technology (Department of Commerce).

1.4 DESIGN REQUIREMENTS
A. Design, engineer and construct formwork, shoring and bracing to conform to design and code requirements; resultant concrete to conform to required shape, line and dimension.

1.5 SUBMITTALS
A. See Section 01300 - Administrative Requirements for submittal procedures.
B. Product Data: Provide data on void form materials and installation requirements.
C. Shop Drawings: Indicate pertinent dimensions, materials, bracing, and arrangement of joints and ties.
D. Provide data on form liner installation and provide min. 6" x 6" sample.

1.6 QUALITY ASSURANCE
A. Perform work of this section in accordance with ACI 347R, ACI 301, and ACI 318. Maintain one copy of standards on project site.
B. Design formwork under direct supervision of a Professional Structural Engineer experienced in design of concrete formwork and licensed in the State in which the Project is located.

1.7 REGULATORY REQUIREMENTS
A. Conform to applicable code for design, fabrication, erection and removal of formwork.

1.8 DELIVERY, STORAGE, AND PROTECTION
A. Section 01600 - Product Requirements: Transport, handle, store and protect products.
B. Deliver void forms and installation instructions in manufacturer's packaging.
C. Store void forms off ground in ventilated and protected manner to prevent deterioration from moisture.

PART 2 – PRODUCTS

2.1 SECTION INCLUDES
A. Standard Structural Concrete Formwork is at the Contractor's discretion, but must meet minimum requirements specified below.

2.2 WOOD FORM MATERIALS
A. Typical Forms: Plyform, Class I, exterior minimum thickness 3/4" inch; in accordance with American Plywood Association Standards.
B. Keyways: 2 inch lumber.

2.3 PREFABRICATED FORMS
A. Manufacturers:
   1. American Polysteel Forms, Albuquerque, NM 87107
   2. Amico Stay-Form, Birmingham, IL 35208
   3. Molded Fiber Glass Concrete Forms Co., Union City, PA 16438.
   4. Sonoco Products Co., Hartsville, SC
   5. Symons Corp., Des Plaines, IL 60017
   6. Substitutions: See Section 01600 - Product requirements.
B. Preformed Steel Forms: Minimum 16 gage matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of finished surfaces.
C. Preformed Plastic Forms: Thermoplastic polystyrene form liner, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of finished surfaces.
D. Glass Fiber Fabric Reinforced Plastic Forms: Matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of finished concrete surfaces.

2.4 FORMWORK ACCESSORIES
A. Form Ties: Removable or Snap-off type, galvanized metal, adjustable length, 1 inch back break dimension, free of defects that could leave holes larger than 1 inch in concrete surface; form ties designed to resist lateral pressure of fresh concrete on forms.
B. Form Release Agent: Colorless mineral oil that will not stain concrete, absorb moisture, impair natural bonding of concrete finish coatings, or affect color characteristics of concrete finish coatings.
C. Form Liners: Units of face designs, texture arrangement, and configuration indicated. Furnish with manufacturer's recommended liquid release agent that will not bond, stain or adversely affect concrete surfaces and will not impair subsequent surface treatments of concrete.
D. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Sized as required, of sufficient strength and character to maintain formwork in place while placing concrete.
E. Waterstops: Polyvinyl chloride, minimum 1,750 psi tensile strength, minimum 50 degrees F to plus 175 degrees F working temperature range, 4 inch wide, maximum possible lengths, ribbed profile, preformed corner sections, heat welded jointing.

PART 3 – EXECUTION

3.1 EXAMINATION
A. Verify lines, levels and centers before proceeding with formwork. Ensure that dimensions agree with drawings.

3.2 EARTH FORMS
A. Earth forms are not permitted.

3.3 ERECTION – FORMWORK

A. Erect formwork, shoring and bracing to achieve design requirements, in accordance with requirements of ACI 301, ACI 347 and ACI 318.
B. Provide bracing to ensure stability of formwork. Shore or strengthen formwork subject to overstressing by construction loads.
C. Arrange and assemble formwork to permit dismantling and stripping. Do not damage concrete during stripping. Permit removal of remaining principal shores.
D. Align joints and make watertight. Keep form joints to a minimum.
E. Obtain approval before framing openings in structural members that are not indicated on drawings.
F. Provide chamfer strips on external corners of beams, joists, and columns.
G. Install void forms in accordance with manufacturer's recommendations. Protect forms from moisture or crushing.
H. Coordinate this section with other sections of work that require attachment of components to formwork.
I. If formwork is placed after reinforcement, resulting in insufficient concrete cover over reinforcement, request instructions from Architect before proceeding.

3.4 APPLICATION – FORM RELEASE AGENT

A. Apply form release agent on formwork in accordance with manufacturer's recommendations.
B. Apply prior to placement of reinforcing steel, anchoring devices, and embedded items.
C. Do not apply form release agent where concrete surfaces will receive special finishes or applied coverings that are affected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces coated prior to placement of concrete.

3.5 INSERTS, EMBEDDED PARTS, AND OPENINGS

A. Provide formed openings where required for items to be embedded in or passing through concrete work.
B. Locate and set in place items that will be cast directly into concrete.
C. Coordinate with work of other sections in forming and placing openings, slots, reglets, recesses, sleeves, bolts, anchors, other inserts, and components of other work.
D. Position recessed anchor slots for brick veneer masonry anchors to spacing and intervals specified in Section 04816.
E. Install accessories in accordance with manufacturer's instructions, so they are straight, level, and plumb. Ensure items are not disturbed during concrete placement.
F. Install PVC waterstops in accordance with manufacturer's instructions, so they are continuous without displacing reinforcement. Heat seal joints so they are watertight.
G. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain.
H. Close temporary openings with tight fitting panels, flush with inside face of forms, and neatly fitted so joints will not be apparent in exposed concrete surfaces.

3.6 FORM CLEANING

A. Clean forms as erection proceeds, to remove foreign matter within forms.
B. Clean formed cavities of debris prior to placing concrete.
    1. Flush with water or use compressed air to remove remaining foreign matter. Ensure that water and debris drain to exterior through clean-out ports.
    2. During cold weather, remove ice and snow from within forms. Do not use de-icing salts. Do not use water to clean out forms, unless formwork and concrete construction proceed within heated enclosure. Use compressed air or other means to remove foreign matter.

3.7 FORMWORK TOLERANCES

A. Construct formwork to maintain tolerances required by ACI 117-90 and ACI 301. Where conflicts occur, the more stringent requirement shall apply.
B. Construct and align formwork for elevator hoistway in accordance with ASME A17.1.
C. Camber slabs and beams in accordance with ACI 301.

3.8 FIELD QUALITY CONTROL

A. An independent Testing Agency will perform field quality control tests, as specified in Section 01400.
B. Inspect erected formwork, shoring, and bracing to ensure that work is in accordance with formwork design, and to verify that supports, fastenings, wedges, ties, and items are secure.
C. Do not reuse wood formwork more than 4 times for concrete surfaces to be exposed to view. Do not patch formwork.
D. When forms are reused, clean surfaces, remove laitance, and tighten to close joints. Align and secure joints to avoid offsets.

3.9 FORM REMOVAL

A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads.
B. Loosen forms carefully. Do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.
C. Store removed forms to prevent damage to form materials or to fresh concrete. Discard damaged forms.
D. Wall Forms:
    1. If curing compound is not used, leave the forms in place for 7 days and keep continuously wet.
    2. If curing compound is used, remove forms 24 hours after concrete has been placed providing concrete has developed sufficient strength to sustain its own weight. Do not use curing compound on vertical concrete surfaces that will be painted or otherwise finished.
    3. During cold weather concreting, leave forms in place for 7 days in addition to placement of other cold weather protection.

END OF SECTION

SECTION 03200

CONCRETE REINFORCEMENT

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Reinforcing steel for cast-in-place concrete.
B. Supports and accessories for steel reinforcement.

1.2 RELATED SECTIONS
A. Section 03100 - Concrete Forms and Accessories.
B. Section 03300 - Cast-In-Place Concrete.

1.3 REFERENCES
A. Unless otherwise noted the most current issue of the reference shall be used.
B. ACI 301 - Specifications for Structural Concrete for Buildings; American Concrete Institute International.
C. ACI 318 - Building Code Requirements For Reinforced Concrete and Commentary; American Concrete Institute International.
D. ACI SP-66 - ACI Detailing Manual; American Concrete Institute International.
E. ASTM A 82 - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.
F. ASTM A 184/A 184M - Standard Specification for Welded Deformed Steel Bar Mats for Concrete Reinforcement.
G. ASTM A 185 - Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete.
H. ASTM A 497 - Standard Specification for Steel Welded Wire Reinforcement, Deformed, for Concrete.
I. ASTM A 615/A 615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
J. ASTM A 704/A 704M - Standard Specification for Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement.
K. ASTM A 767/A 767M - Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement.
L. AWS D1.4 - Structural Welding Code - Reinforcing Steel; American Welding Society.
M. CRSI (DA4) - Manual of Standard Practice; Concrete Reinforcing Steel Institute.
N. CRSI (P1) - Placing Reinforcing Bars; Concrete Reinforcing Steel Institute.

1.4 SUBMITTALS
A. See Section 01300 - Administrative Requirements for submittal procedures.
B. Shop Drawings: Comply with requirements of ACI SP-66. Include bar schedules, shapes of bent bars, spacing of bars, and location of splices.
   1. Prepare shop drawings under seal of a Professional Structural Engineer experienced in design of work of this type and licensed in the State in which the Project is located.
C. Manufacturer's Certificate: Certify that reinforcing steel and accessories supplied for this project meet or exceed specified requirements.
D. Reports: Submit certified copies of mill test report of reinforcement materials analysis.

1.5 QUALITY ASSURANCE
A. Perform work of this section in accordance with CRSI (DA4), CRSI (P1), ACI 301, and ACI 318.
   1. Maintain one copy of each document on project site.
B. Welders' Certificates: Submit certifications for welders employed on the project, verifying AWS qualification within the previous 12 months.
C. Prepare shop drawings under seal of a Professional Structural Engineer experienced in design of work of this type and licensed in the state where the project is located.

PART 2 – PRODUCTS

2.1 REINFORCEMENT

A. Reinforcing Steel: ASTM A 615/A 615M Grade 60 (420).
   1. Deformed billet-steel bars.
   2. Galvanized in accordance with ASTM A 767/A 767M, Class I.
B. Reinforcing Steel Mat: ASTM A 704/A 704M, using ASTM A 615/A 615M, Grade 60 (420) steel bars or rods, unfinished.
C. Stirrup Steel: ASTM A 82 steel wire, unfinished.
D. Welded Steel Wire Reinforcing (W.W.R.): ASTM A 185, plain type. Provide in sizes as shown on Drawings and in flat sheets. Roll stock is not permitted.
E. Reinforcement Accessories:
   1. Tie Wire: Annealed, minimum 16 gage.
   2. Bar Supports: Bolsters for spacing, supporting, and fastening reinforcing bars in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire precast concrete or fiber-reinforced concrete of greater compressive strength than concrete unless exceeded herein. Provide continuous length wire type bolsters with continuous sand plates for all slabs on grade. All support items in contact with vapor barrier system must have continuous plates so as to avoid puncture of the system during installation and over total life of structure.
   3. W.W.R. Supports: Chairs, for spacing, supporting, and fastening welded wire reinforcing in place. Provide continuous length wire type chairs with continuous sand plates for all welded wire reinforcing, placed in continuous rows maximum 4 feet on center or spaced sufficiently to support W.W.R. to intended position within concrete--plastic supports are not permitted for W.W.R. All support items in contact with vapor barrier system must have continuous plates so as to avoid puncture of the system during installation and over total life of structure.
   4. Bar and reinforcing Support Manufacturers:
      a. Dayton Richmond Concrete Accessories, Miamiburg, OH.
      b. Meadow Burke Products, Chicago, IL.
      c. Universal Form Clamp Co., Bellwood, IL.
      d. Substitutions: See Section 01600 - Product Requirements.
   5. Provide stainless steel, galvanized, or plastic coated steel components for placement within 1-1/2 inches of weathering surfaces.
   6. Joint Dowel Bars: Plain-steel bars, ASTM A615/A615M, Grade 60 (420). Cut bars true to length with ends square and free of burrs.
F. Reinforcing for concrete topping of precast concrete hollow core plank
   1. Woven wire fabric: 2 inch x 2 inch X 14 gauge, plain type, in flat sheets.

2.2 DELIVERY, STORAGE, AND PROTECTION

A. Properly label all bars with weatherproof tags to facilitate identification.
B. Store reinforcing steel on supports above ground level. Keep covered with tarpaulins.
C. Protect coated bars from damage to coating.

2.3 FABRICATION

A. Fabricate concrete reinforcing in accordance with CRSI (DA4) - Manual of Standard Practice.
B. Welding of reinforcement is not permitted unless indicated on drawings. If and when explicitly indicated, perform welding in accordance with AWS D1.4.
C. Locate reinforcing splices not indicated on drawings at point of minimum stress.
   1. Review locations of splices with Engineer.
   2. Minimize reinforcement splices.

PART 3 – EXECUTION

3.1 PLACEMENT

A. Place, support and secure reinforcement against displacement in accordance with CRSI. Do not deviate from required position.
B. Do not displace or damage vapor barrier for slabs on grade.
C. Accommodate placement of formed openings.
D. Lap welded wire fabric one full mesh at side and end laps and wire together.
E. Tie bars at all points where bars cross or as required by CRSI (P1).
F. Provide welded wire fabric in all interior concrete slabs on grade unless noted otherwise on plans.
G. Provide keys and dowels where the walls and other items are shown to be built integrally but are placed as separate pours. Use dowels of the same size and spacing as reinforcing but not less than 48 bar diameters embedment.
H. Splice reinforcing bars as required. Lap continuous reinforcing 48 diameters but not less than 18 inches.
I. Minimum Wall Reinforcing: Two No. 5 bars, continuous top and bottom, unless other sizes or quantities are indicated. Reinforcing bars shall be continuous around corners or corner bars shall be provided of the same size and spacing of reinforcing bars.
J. Prior to pouring concrete, check all reinforcing for contamination and clean as required.
K. Conform to applicable code and requirements of contract documents for concrete cover over reinforcement.
L. Tie bars at all points where crossed or as required by CRSI.
M. Provide welded wire fabric in all interior concrete slabs on grade unless noted otherwise on plans.

3.2 FIELD QUALITY CONTROL

A. An independent testing agency, as specified in Section 01400, will inspect installed reinforcement for conformance to contract documents before concrete placement.

END OF SECTION

SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Slabs on grade.
B. Concrete elevator shaft walls and foundation walls.
C. Joint devices associated with concrete work.
D. Concrete curing.

1.2 RELATED SECTIONS

A. Section 01400 - Quality Requirements: Testing and inspection services.
B. Section 02316 - Fill and Backfill.
C. Section 03100 - Concrete Forms and Accessories: Forms and accessories for formwork.
D. Section 03200 - Concrete Reinforcement.
E. Section 07212 - Board and Batt Insulation.
F. Section 07900 - Joint Sealers.

1.3 REFERENCES

A. Unless otherwise noted, the most current issue of references shall be used.
B. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete; American Concrete Institute International.
C. ACI 211.2 - Standard Practice for Selecting Proportions for Structural Lightweight Concrete; American Concrete Institute International.
D. ACI 301 - Specifications for Structural Concrete for Buildings; American Concrete Institute International.
E. ACI 302.1R - Guide for Concrete Floor and Slab Construction; American Concrete Institute International.
F. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; American Concrete Institute International.
G. ACI 305R - Hot Weather Concreting; American Concrete Institute International.
H. ACI 306R - Cold Weather Concreting; American Concrete Institute International.
I. ACI 309R - Guide for Consolidation of concrete.
J. ACI 318 - Building Code Requirements for Reinforced Concrete and Commentary; American Concrete Institute International.
K. ASTM C 39/C 39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
L. ASTM C 94/C 94M - Standard Specification for Ready-Mixed Concrete.
M. ASTM C 143/C 143M - Standard Test Method for Slump of Hydraulic-Cement Concrete.
N. ASTM C 173/C 173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
O. ASTM C 260 - Standard Specification for Air-Entraining Admixtures for Concrete.
P. ASTM C 309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
Q. ASTM C 494/C 494M - Standard Specification for Chemical Admixtures for Concrete.
R. ASTM C 1059 - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete.
S. ASTM D 994 - Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type).
T. ASTM D 1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
U. ASTM E 1643-98 Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs
V. COE CRD-C 572 - Corps of Engineers Specifications for Polyvinylchloride Waterstop; Corps of Engineers.

1.4 SUBMITTALS

A. See Section 01300 - Administrative Requirements, for submittal procedures.
B. Product Data: Submit manufacturers' data on manufactured products.
C. Samples: Submit two, 12 inch x12 inch samples of vapor barrier materials and all accessories.
D. Samples: Submit two, 12 inch long samples of waterstops and construction joint devices.
E. Manufacturer's Installation Instructions: Indicate installation procedures and interface required with adjacent construction for concrete accessories.
F. Project Record Documents: Contractor shall coordinate with all trades to accurately record the actual locations of all embedded utility lines, conduits, piping and other items that will be concealed from view upon completion of concrete work.
G. Mix Design: Submit concrete mix design for each type and strength of concrete determined by either laboratory trial mix or field test data in accordance with ACI 211.1 and ACI 301. Submit mix design at least 15 days prior to first pour.

1.5 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI 301 and ACI 318.
   1. Maintain one copy of each document on site.
B. Acquire cement from same source and aggregate from same source for entire project.
C. Follow recommendations of ACI 305R when concreting during hot weather.
D. Follow recommendations of ACI 306R when concreting during cold weather.
E. Concrete design mix shall test 15% higher than specified requirements.
F. Test concrete in accordance with Section 01400 - Quality Requirements.
G. All items in contact with vapor barrier system must have continuous plates so as to avoid puncture of the system during installation and over total life of structure.

PART 2 – PRODUCTS

2.1 FORMWORK

A. Comply with requirements of Section 03100.

2.2 REINFORCEMENT

A. Comply with requirements of Section 03200.
B. Bolsters and Chairs for reinforcing support: Comply with requirements of Section 03200 specifically for slab on grade applications.
   1. All support items in contact with vapor barrier system must have continuous plates so as to avoid puncture of the system during installation and over the total life of structure.

2.3 CONCRETE MATERIALS

A. Cement: ASTM C 150, Type I - Normal Portland type.
B. Fine and Coarse Aggregates: ASTM C 33.
C. Lightweight Aggregate: ASTM C 330.
D. Fly Ash: ASTM C 618, Class C or F.
E. Water: Clean and not detrimental to concrete.

2.4 ADMIXTURES

A. Air Entrainment Admixture: ASTM C 260.
B. Chemical Admixtures:
   1. ASTM C 494, Type A - Water Reducing.
   2. Other chemical admixtures may be used only when approved in writing by the Architect prior to use. Under certain conditions the Architect may consider the use of the following admixtures: ASTM C 494/C 494M, Type E - Water Reducing and Accelerating, Type F - Water Reducing, High Range, and Type G - Water Reducing, High Range and Retarding.
   3. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.

2.5 VAPOR BARRIER

A. Acceptable products:
   1. Stego Wrap (15 mil) Vapor Barrier by Stego Industries (877) 464-7834 www.stegoindustries.com.
   2. Soco-Shield 15 mil. Vapor Barrier by Socopac (888) 276-2672 www.socoshield.com
   3. Moistop Ultra "A" 15 mil. Vapor Barrier by Fortifiber Building Products (800) 773-4777 www.fortifiber.com
   4. Premolded membrane with Plasmatic Core by W.R. Meadows 1-800-342-5976 www.wrmeadows.com
   5. Vaporguard by Reef Industries 1-800-231-6074 www.reefindustries.com
   6. Substitutions: NOT PERMITTED

B. Vapor Barrier Accessories: As recommended by the manufacturer for complete installation of vapor barrier placed over Granular Fill Material under Concrete Slabs as defined in Section 02316 - Fill and Backfill - and conforming to ASTM E 1643-98. Accessories include, but are not limited to:
   1. Seam Tape
   2. Pipe Boots
   3. Sealant or Mastic adhesive

2.6 CONCRETE ACCESSORIES

A. Reglets: Formed steel sheet, galvanized, with temporary filler to prevent concrete intrusion during placement.

B. Dovetail Anchor Slots: Hot-dip galvanized steel sheet, not less than 0.0336 inch thick, with bent tab anchors. Temporarily fill or cover face opening of slots to prevent intrusion of concrete or debris.

C. Bonding Agent: ASTM C 1059, Type II acrylic non-redispersable type.

D. Epoxy Bonding System: ASTM C 881, type as required by project conditions.

E. Non-Shrink Grout: ASTM C 1107; premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.
   1. Minimum Compressive Strength at 48 Hours: 2,400 psi.
   2. Minimum Compressive Strength at 28 Days: 7,000 psi.

F. Moisture-Retaining Cover for slabs on grade: ASTM C 171; white burlap-polyethylene sheet.

G. Liquid Curing Compound: ASTM C 309, Type 1, clear or translucent.

H. Anchors to be cast into concrete: As outlined in Section 05120 - Structural Steel.

2.7 JOINT DEVICES AND MATERIALS

A. Waterstops: As defined in Section 03100 - Concrete formwork: FORMWORK ACCESSORIES

B. Joint Filler: Nonextruding, resilient asphalt impregnated fiberboard or felt, 1/2 inch thick and full depth of slab less 1/2 inch.

C. Construction Joint Devices: Integral extruded plastic; 0.0239 inch thick, formed to tongue and groove profile, knockout holes spaced at 6 inches, ribbed steel spikes with tongue to fit top screed edge.

D. Sealant and Primer: As specified in Section 07900.

2.8 CONCRETE MIX DESIGN

A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.

B. Proportioning Structural Lightweight Concrete: Comply with ACI 211.2 recommendations.

C. Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience, as specified in ACI 301.

D. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended by manufacturer.

E. Concrete for Footings, Foundations and Walls:
   1. Compressive Strength, when tested in accordance with ASTM C 39/C 39M at 28 days: 3000 psi.

2. Concrete weight: Normal (144 lbs. per cubic foot)
3. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.
4. Cement Content: Minimum 470 lb per cubic yard, maximum 517 per cubic yard.
5. Water-Cement Ratio: Maximum 55 percent by weight.
6. Total Air Content: 3 percent naturally occurring, per ASTM C 173.
7. Maximum Slump: 3 inches, plus or minus 1 inch.
8. Maximum Aggregate Size: 1 inch.
9. Water reducing agent required.

F. Slabs on Grade:
1. Compressive Strength, when tested in accordance with ASTM C 39/C 39M at 28 days: 3000 psi.
2. Concrete weight: Normal (144 lbs. per cubic foot)
3. Cement Content: Minimum 470 lb. per cubic yard, maximum 517 lb per cubic yard.
4. Water-Cement Ratio: Maximum 44 percent by weight.
5. Total Air Content: Maximum 3 percent naturally occurring, per ASTM C 173.
   a. If air entrainment is added for workability, Water-Cement ratio shall be reduced to 40 percent by weight.
6. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.
7. Maximum Slump: 3 inches plus or minus 1 inch.
8. Maximum Aggregate Size: 1-1/2 inch gradations shall include sizes up to 1 inch.
9. Water reducing agent required.

2.9 MIXING

A. Transit Mixers: Comply with ASTM C 94/C 94M.
B. Admixtures:
1. Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended by manufacturer. All admixtures must be approved prior to placing concrete.
2. Use accelerating admixtures in cold weather only when approved by Architect. Use of admixtures will not relax cold weather placement requirements.
3. Use of calcium chloride is not permitted.
4. Use set of retarding admixtures during hot weather only when approved by Architect.
5. Add air entraining agent to normal weight concrete mix for work exposed to exterior.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Verify lines, levels, and dimensions before proceeding with work of this section.
B. Verify placement and compaction of granular fill for slab on grade applications prior to placement of vapor barrier. Compaction shall meet requirements of Section 02316 - Fill and Backfill as verified by the Testing Agency of Record.
C. Contractor shall coordinate with Division 15 and 16 trades and verify that all Mechanical, Electrical, Plumbing lines or other items placed are wholly within or below the CA-6 granular fill layer for slab on grade applications. Vapor Barrier may not be placed directly over any pipes, conduits or other items, but shall rest firmly on compacted granular fill.

3.2 PREPARATION

A. Formwork: Comply with requirements of Section 03200. Design and fabricate forms to support all applied loads until concrete is cured, and for easy removal without damage to concrete.
B. Where sheet waterproofing will be applied, chamfer corners of concrete on a 45 degree angle measuring minimum 1/2 inch along the full face of the corner.
C. Verify that forms are clean and free of rust before applying release agent.
D. Coordinate placement of joint devices with erection of concrete formwork and placement of form accessories.

E. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instructions.
F. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.

3.3 INSTALLATION OF VAPOR BARRIER

A. Installation shall be in accordance with manufacturer's instructions and ASTM E 1643-98 unless exceed herein.
   1. Unroll Vapor Barrier with the longest dimension parallel with the direction of the pour.
   2. Lap Vapor Barrier over footings and seal to foundation walls.
   3. Overlap joints 6 inches and seal with sealant and seam tape.
   4. Seal all barrier penetrations including pipes, electrical conduit, reinforcing penetrations or other items with pipe boot made from Vapor Barrier and seam tape.
   5. Repair vapor retarder damaged during placement of concrete reinforcing. Repair with vapor retarder material; lap over damaged areas minimum 6 inches and seal watertight. The use of brick type reinforcing supports for W.W.F. is prohibited.
   6. Install compressible filler at slab perimeter and at all locations where slab meets vertical surface.
B. Remove all standing water from vapor barrier prior to placing concrete.
C. Notify Architect for review of vapor barrier installation a minimum of 48 hours prior to placing concrete. Contractor shall complete any remedial work required to comply with installations requirements as determined by the Architect.

3.4 INSTALLATION OF REINFORCING

A. Following placement of vapor barrier, install reinforcement in compliance with Section 03200 and ACI 301. All support items in contact with vapor barrier system must have continuous plates so as to avoid puncture of the system during installation and over total life of structure.

3.5 PLACING CONCRETE

A. Begin placing concrete within 60 minutes from the time truck leaves the concrete plant.
B. Place concrete in accordance with ACI 304R.
C. Do not add water to concrete during transport, delivery, at project site, or during placement unless approved by Architect.
D. Place concrete in a continuous operation and without segregation.
E. Placement of concrete requiring drops less than 10 feet may be by means of bottom discharge bucket, flexible drop chute, elephant-trunk, hopper or tremie, or free fall concrete may be used provided it is directed such that fall is vertical down the center of forms and reinforcing without hitting the sides, or reinforcement. Where a drop of more than 15 feet is required concrete must be pumped into place.
F. Consolidate concrete prior to the point in which the mechanical vibrator will not sink into the concrete by its own weight.
G. Consolidate concrete using a mechanical vibrator by inserting and withdrawing vertically at close uniform intervals, using a systematic pattern of vibration to ensure that all concrete has been adequately consolidated. When pouring multiple lifts, insert mechanical vibrator to a depth of penetrating the previous lift by minimum 6 inches. Use equipment and procedures as recommended by ACI 309R--Do not over consolidate. Do not allow vibrator to contact forms or reinforcing.
H. On surfaces where air void holes are objectionable, use additional vibration. Do not over vibrate.
I. Place concrete for floor slabs in accordance with ACI 302.1R unless exceeded herein.
J. Cold Weather Placement: Comply with ACI 306.1
K. Hot Weather Placement: Comply with ACI 305R.
L. Notify Architect not less than 48 hours prior to commencement of placement operations.
M. Ensure reinforcement, inserts, waterstops, embedded parts, and formed construction joint devices will not be disturbed during concrete placement.

N. Separate slabs on grade from vertical surfaces with joint filler.
O. Place joint filler in floor slab pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.
P. Extend joint filler from bottom of slab to within 1/2 inch of finished slab surface. Conform to Section 07900 for finish joint sealer requirements.
Q. Install joint devices in accordance with manufacturer's instructions.
R. Install construction joint devices in coordination with floor slab pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.
S. Slabs on grade shall be placed in continuous strips as per ACI recommendations. The maximum pour area shall not exceed 3600 square feet. Allow 24 hours to elapse between the placement of adjacent strips. Pour in alternating strip pattern so that no two adjoining slabs are poured the same day.
T. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
U. Place concrete continuously between predetermined expansion, control, and construction joints.
V. Do not interrupt successive placement; do not permit cold joints to occur. Provide construction joints at the termination of all pours.
W. Saw cut joints within 24 hours after placing. Use 3/16 inch thick blade, cut into 1/4 depth of slab thickness. If no spacing of joints is indicated on drawings, place joints at a maximum spacing of 15 feet in each direction.
X. Space vertical joints in walls as indicated. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
Y. Screed floors and slabs on grade level, maintaining surface flatness within maximum 1/8 inch from a level plane.

3.6 PLACING GROUT

A. Mix non-shrink grout in accordance with manufacturer's instructions
   1. Do not mix more grout than can be placed in 20 minutes.
   2. Do not retemper grout.
B. Soak concrete surfaces to receive grout and remove free water just before placing grout. Pack grout to form a full grout bed without air pockets or cavities. Trowel smooth and splay neatly to 45 degrees.

3.7 CONCRETE TOPPINGS FOR PRECAST HOLLOW CORE PLANKS

A. Grout all panel seams and other items as put forth in Section 03415.
B. Prior to placing floor topping, remove deleterious material. Broom and vacuum clean.
C. Place required dividers, edge strips, reinforcing, and other items to be cast in.
D. Place reinforcing in accordance with Section 03200.
E. Place concrete floor toppings to required lines and levels.
   1. Place topping in checkerboard panels not to exceed 30 ft in either direction.
F. Screed toppings level, as outlined in Placing Concrete above.

3.8 CONCRETE FINISHING

A. Repair surface defects, including tie holes, immediately after removing formwork.
B. Exposed Form Finish: Rub down or chip off and smooth fins or other raised areas 1/4 inch or more in height. Provide finish as follows:
   1. Smooth Rubbed Finish: Wet concrete and rub with carborundum brick or other abrasive, not more than 24 hours after form removal.
   2. Grout Cleaned Finish: Wet areas to be cleaned and apply grout mixture by brush or spray; scrub immediately to remove excess grout. After drying, rub vigorously with clean burlap, and keep moist for 36 hours.
C. Where sheet waterproofing will be applied, contractor shall fill all voids in excess of 1/4 inch in diameter, remove all oil and form bond breaking material that may hinder adhesion of sheet waterproofing prior to installing waterproofing.

D. Concrete Slabs: Finish to requirements of ACI 302.1R, and as follows:
   1. Wood float surfaces that will receive quarry tile and terrazzo with full bed setting system.
   2. Steel trowel all other surfaces.
E. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains at 1:50 nominal.
F. Do not sprinkle dry cement on surfaces to absorb water.

3.9 CURING AND PROTECTION

A. Comply with requirements of ACI 308 unless exceeded herein. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
B. Apply evaporation retarder after floating to prevent premature surface setting under dry or windy conditions.
C. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
   1. Normal concrete: Not less than 7 days.
   2. High early strength concrete: Not less than 4 days.
D. Formed Surfaces: Cure by moist curing with forms in place for full curing period of 7 days minimum. Where forms are removed prior to 7 day curing period, apply curing compound in two coats at right angles using application rate recommended by manufacturer.
E. Surfaces Not in Contact with Forms:
   1. Start initial curing as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than three days by saturated burlap.
   2. Begin final curing after initial curing but before surface is dry.
      a. Moisture-retaining cover: Seal in place with waterproof tape or adhesive.
F. Concrete slab curing:
   1. Wet cure all concrete slabs for a minimum of 7 days. Completely cover pour area with moisture retaining cover and protect against movement. Keep moisture retaining cover continuously moist for full 7 day period. Do not permit loading or partial loading caused by vehicle traffic or material placement during this curing period.
   2. In no case shall liquid curing compound be used where compound may be incompatible with floor finish materials. If the application of curing compound is questionable, the Contractor shall provide a review report by the finish materials manufacturer prior to the application of those materials to ensure that the proper moisture and other conditions exist and if any remedial work is required.

3.10 FIELD QUALITY CONTROL

A. An independent Testing Agency will perform field quality control tests, as specified in Section 01400.
B. Provide free access to concrete operations at project site and cooperate with appointed firm. Contractor must provide minimum 48 hours notice to testing agency and Architect prior to all concrete pours.
C. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of concrete operations.
D. Tests of concrete and concrete materials may be performed at any time to ensure conformance with specified requirements.
E. Compressive Strength Tests: ASTM C 39/C 39M. For each test, mold and cure three concrete test cylinders. Obtain test samples for every 50 cu yd or less of each class of concrete placed.
F. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents. Record ambient temperature at time of concrete sampling.
G. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C 143/C 143M.

H. The testing agency will perform the following:
   1. Obtain representative samples of fresh concrete in accordance with ASTM C 172.
   2. Three concrete test cylinders will be taken for every 50 cu. yds. of each class of concrete placed, but not less than one set of test cylinders for any day's placement.
   3. One additional test cylinder will be taken during cold weather concreting, cured on job site under same conditions as concrete it represents.
   4. Perform compression strength tests. Break one cylinder at 7 days and two cylinders at 28 days.
   5. Perform one slump test for each 25 cubic yards of concrete or fraction thereof, but in no case less than two per each day of concrete pour, in accordance with ASTM C 143.
   6. Test for air entrainment, one test for each 50 cubic yards of concrete or fraction thereof, in accordance with ASTM C 231.
   7. If tests indicate concrete strengths below those required or visual defects indicate concrete of poor quality has been placed, additional tests shall be made and reported at the expense of the Contractor. Tests may be compression test on cored cylinders, ASTM C 42 and/or load tests as outlined in ACI 318.

3.11 DEFECTIVE CONCRETE

A. Test Results: The testing agency shall report test results in writing to Architect and Contractor within 72 hours of test.
B. Defective Concrete:
   1. Test samples not conforming to requirements or in-place concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.
   2. Improper use or application of reinforcing accessories or other items that may compromise the integrity of the vapor barrier system.
   3. Improper placement of W.W.R. or other reinforcing.
C. Requirements for repair or replacement of defective concrete will be determined by the Architect. The cost of additional testing shall be borne by Contractor when defective concrete is identified.
D. Provide sample area of patch, fill, touch-up, repair, or exposed concrete for approval of the Architect for each type of area requiring repair.
E. Excessive honeycombing or embedded debris in concrete is not acceptable. Notify Architect upon discovery.
F. Allow Architect to inspect concrete surfaces upon removal of forms and prior to backfilling or otherwise covering concrete.

END OF SECTION

SECTION 03505

SELF-LEVELING UNDERLAYMENT

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Liquid applied cementitious self-leveling floor underlayment.

1.2 REFERENCES
A. Unless otherwise noted the most current issue of the reference shall be used.
B. ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials.

1.3 SUBMITTALS
A. See Section 01300 – Administrative Requirements, for submittal procedures.
B. Product Data: Provide physical characteristics, product limitations
C. Manufacturer's Instructions: Indicate mix instructions.

1.4 QUALITY ASSURANCE
A. Applicator Qualifications: Company specializing in performing the work of this section and approved by the manufacturer.

1.5 REGULATORY REQUIREMENTS
A. Conform to applicable code for combustibility or flame spread requirements.

1.6 ENVIRONMENTAL REQUIREMENTS
A. Do not install underlayment until floor penetrations and peripheral work are complete.
B. Maintain ambient temperatures of 50 degrees for 24 hours before, during and 72 hours after installation of underlayment.
C. During the curing process, ventilate spaces to remove excess moisture.

PART 2 – PRODUCTS

2.1 MANUFACTURERS
A. Cementitious Underlayment:
   1. Ardex Engineered Cements. Inc.: www.ardex.com.
   2. Dayton Superior Corporation: www.daytonsuperior.com
   3. Dependable Chemical Co., Inc.: www.floorprep.com.
   4. Substitutions: See Section 01600 - Product Requirements.

2.2 ACCESSORIES
A. Provide all primers, cleaners, bonding agents or any other accessory materials recommended by the manufacturer for the intended installation.

2.3 MIXING
A. Site mix materials in accordance with manufacturer's instructions.
B. Mix to achieve following characteristics:
   1. Density: 100 lb/cu ft minimum dry density.
   2. Compressive strength: 1,000 psi minimum.
   3. Surface burning characteristics: Flame spread/smoke developed index of 0/0 in accordance with ASTM E 84.
C. Mix to self-leveling consistency.

PART 3 – EXECUTION

3.1 EXAMINATION
A. Verify that substrate surfaces are clean, dry, unfrozen, do not contain petroleum bi-products or other compounds detrimental to underlayment material bond to substrate.

3.2 PREPARATION
A. Remove substrate surface irregularities. Fill voids and deck joints with latex based filler. Finish smooth.
B. Vacuum clean surfaces.
C. Prime substrate in accordance with manufacturer's instructions. Allow to dry.

3.3 APPLICATION
A. Install underlayment in accordance with manufacturer's instructions.
B. Install underlayment as required, or as directed by the Architect, to correct any imperfections or irregularities which have caused the floor to be out of level.

3.4 CURING
A. Air cure in accordance with manufacturer's instructions.

3.5 APPLICATION TOLERANCE
A. Top Surface: Level to 1/8 inch in 5 feet.

3.6 PROTECTION OF FINISHED WORK
A. Do not permit traffic over unprotected floor underlayment surfaces.

3.7 SCHEDULES
A. Level all floor surfaces which will receive new flooring materials.

END OF SECTION

SECTION 04065

MORTAR AND MASONRY GROUT

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Mortar for masonry.
B. Grout for masonry.

1.2 RELATED SECTIONS
A. Section 01400 - Quality Requirements: Testing laboratory services.

1.3 REFERENCES
A. Unless otherwise noted the most current issue of the reference shall be used.
B. ACI 530/ASCE 5/TMS 402 - Building Code Requirements For Masonry Structures; American Concrete Institute International;
C. ACI 530.1/ASCE 6/TMS 602 - Specification for Masonry Structures; American Concrete Institute International.
D. ASTM C 5 - Standard Specification for Quicklime for Structural Purposes.
E. ASTM C 199 - Test Method for Pier Test for Refractory Masonry.
F. ASTM C 207 - Standard Specification for Hydrated Lime for Masonry Purposes.
G. ASTM C 387 - Standard Specification for Packaged, Dry, Combined Materials for Mortar and Concrete.
H. ASTM C 404 - Standard Specification for Aggregates for Masonry Grout.
I. ASTM E514 -90 - Standard Test Method for Water Penetration and Leakage Through Masonry
J. ASTM C 1384 - Standard Specification for Modifiers for Masonry Mortars.
K. ASTM C 1388 - Standard Test Method for Compressive Strength of Laboratory Constructed Masonry Prisms.
L. Contractor to verify that specified cleaning is done during progress of work and at the completion of each subcontractor's work.

1.4 SUBMITTALS
A. See Section 01300 - Administrative Requirements, for submittal procedures.
B. Product Data: Include design mix and indicate whether the Proportion or Property specification of ASTM C 270 is to be used. Also include required environmental conditions and admixture limitations.
C. Samples: Submit two samples of mortar, illustrating mortar color and color range.
D. Contractor shall retain the services of an independent testing laboratory to test, evaluate and report on the following:
    1. Submit reports on mortar indicating compliance with component mortar materials to requirements of ASTM C 270 and test and evaluation reports per ASTM C 780.
    2. Reports: Submit reports on grout indicating compliance with component grout materials to requirements of ASTM C 476 and test and evaluation reports to requirements of ASTM C
E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
F. Manufacturer's Instructions: Submit packaged dry mortar manufacturer's installation instructions.

1.5 QUALITY ASSURANCE
A. Comply with provisions of ACI 530/ASCE 5/TMS 402 and ACI 530.1/ASCE 6/TMS 602, except where exceeded by requirements of the contract documents.
    1. Maintain one copy of each document on project site.

1.6 DELIVERY, STORAGE, AND HANDLING
A. Maintain packaged materials clean, dry, and protected against dampness, freezing, and foreign matter.

1.7 ENVIRONMENTAL REQUIREMENTS
A. Maintain materials and surrounding air temperature to minimum 40 degrees F prior to, during, and 48 hours after completion of masonry work.

B. Cold Weather Requirements: Comply with recommendations of ACI 530.1
C. Maintain materials and surrounding air temperature to maximum 90 degrees F prior to, during, and 48 hours after completion of masonry work.
D. Hot Weather Requirements: Comply with recommendations of ACI 530.1

PART 2 – PRODUCTS

2.1 MATERIALS

A. Masonry Cement: ASTM C 91, Type S.
   1. Colored Mortar: Premixed cement as required to match Architect's sample.
B. Portland Cement: ASTM C 150, Type I – Normal, or Type II - Moderate; standard gray color.
C. Blended Cement: ASTM C 595, Type IP or i(PM) for type I or II cement.
D. Packaged Dry Mortar: ASTM C 387, using gray color cement.
E. Hydrated Lime: ASTM C 207, Type S or M.
F. Mortar Aggregate: ASTM C 144, standard masonry type.
G. Grout Aggregate: ASTM C 404.
H. Pigments for Colored Mortar: Iron or chromium oxides with demonstrated stability and colorfastness. Do not use carbon black.
   1. ASTM C 979: Pigment shall not exceed 10% of the weight of portland cement.
   2. Colors: As required to match Architect's color samples.
   3. Acceptable products:
      a. Soloman Colors: www.solomoncolors.com
      b. Davis Colors: www.concretestains.com
      c. Color Solutions, Inc.: www.dynamiccolorsolutions.com
      d. Prism Pigments: www.prismpigments.com
      e. Western Lime and Cement Co.
   4. Substitutions: See Section 01600 - Product Requirements.
I. Water: Clean and potable.
J. Accelerating Admixture: Not Permitted.
K. Moisture-Resistant Admixture: Water repellent compound designed to reduce capillarity; Integral liquid polymeric admixture for mortar added during mixing, capable of achieving a Class E Rating when evaluated using ASTM E 514 with the test extended to 72 hours, using the rating criteria specified in ASTM E 514.
L. Bonding Agent: Latex type.

2.2 MORTAR MIXES

A. Mortar for Unit Masonry: ASTM C 270, Property Specification.
   1. Engineered Masonry: Type S.
   2. Masonry below grade and in contact with earth: Type S.
   3. Exterior, loadbearing masonry: Type M or S.
   4. Exterior, non-loadbearing masonry: Type M or S.
   5. Interior, loadbearing masonry: Type M or S.
   6. Interior, non-loadbearing masonry: Type N.
   7. Glass unit masonry: Type N or S.
   8. Pointing mortar: Prehydrated Type N with maximum 2 percent ammonium stearate or calcium stearate per cement weight.
B. Stain Resistant Pointing Mortar: One part Portland cement, 1/8 part hydrated lime, and two parts graded (80 mesh) aggregate, proportioned by volume. Add aluminum tristearate, calcium stearate, or ammonium stearate equal to 2 percent of Portland cement by weight.
C. Pointing Mortar For Glass Unit Masonry: ASTM C 270, Prehydrated Type M, using the Property Specification.
   1. Maximum 2 percent ammonium stearate or calcium stearate per cement weight.
   2. Beach sand aggregate.

D. Mortar for Stone: ASTM C 270, Property Specification.
   1. Setting mortar:
      a. Granite: Type S mortar.
      b. Limestone: Type N mortar.
      c. Marble: Type S mortar.
      d. Travertine: Type S mortar.
      e. Quartz-based stone: Type N mortar.
      f. Slate: Type S mortar.
   2. Pointing mortar:
      a. Granite: Type S mortar.
      b. Limestone: Type N mortar.
      c. Marble: Type N mortar.
      d. Travertine: Type N mortar.
      e. Quartz-based stone: Type N mortar.
      f. Slate: Type N mortar.

E. Colored Mortar: Proportion selected pigments and other ingredients to match Architect's sample, without exceeding manufacturer's recommended pigment-to-cement ratio.

2.3 MORTAR MIXING

A. Thoroughly mix mortar ingredients using mechanical batch mixer, in accordance with ASTM C 270 and in quantities needed for immediate use.
B. Maintain sand uniformly damp immediately before the mixing process.
C. Add mortar color in accordance with manufacturer's instructions. Provide uniformity of mix and coloration.
D. Do not use anti-freeze compounds to lower the freezing point of mortar. Do not use set accelerators unless approved in writing by The Brick Institute of America (BIA), National Concrete Masonry Association (NCMA), ASTM C 270, the Architect of Record and the Engineer of Record. The use of admixtures does not relax cold weather protection requirements.
E. If water is lost by evaporation, re-temper only within two hours of mixing.
F. Use mortar within two hours after mixing at temperatures of 90 degrees F, or two-and-one-half hours at temperatures under 40 degrees F.

2.4 GROUT MIXES

A. Bond Beams and Lintels: 3,000 psi strength at 28 days; 8-10 inches slump; provide grout in accordance with ASTM C 476. Use or fine grout in accordance with ACI 530 and 530.1.
B. Engineered Masonry: Unless otherwise noted provide grout with 3,000 psi strength at 28 days; 7-8 inches slump; mix in accordance with ASTM C 476.
   1. Coarse grout for spaces with smallest horizontal dimension greater than 2 inches.

2.5 GROUT MIXING

A. Thoroughly mix grout ingredients in quantities needed for immediate use in accordance with ASTM C 476
B. Add admixtures in accordance with manufacturer's instructions; mix uniformly.
C. Do not use anti-freeze compounds to lower the freezing point of grout. Do not use set accelerators unless approved in writing by The Brick Institute of America (BIA), National Concrete Masonry Association (NCMA), ASTM C 270, the Architect of Record and the Engineer of Record. The use of admixtures does not relax cold weather protection requirements.

2.6 PRECONSTRUCTION TESTING

A. Testing will be conducted by an independent test agency, in accordance with provisions of Section 01400.
B. Mortar Mixes: Test mortars pre-batched by weight in accordance with ASTM C 270 or ASTM C 780 recommendations for preconstruction testing for compressive strength, consistency, mortar aggregate ratio, water content, air content and splitting tensile strength.

1. Test results will be used to establish optimum mortar proportions and establish quality control values for construction testing.

C. Grout Mixes: Test grout batches in accordance with ASTM C 1019 procedures for compressive strength and slump.
   1. Test results will be used to establish optimum grout proportions and establish quality control values for construction testing.

PART 3 – EXECUTION

3.1 PREPARATION

A. Apply bonding agent to existing smooth finish concrete surfaces.
   1. Plug clean-out holes for masonry with brick or masonry units to match adjacent surfaces. Brace masonry for wet grout pressure.

B. Request inspection of spaces to be grouted.

3.2 INSTALLATION

A. Install mortar and grout to requirements of Section 04810; and in accordance with ACI 530.1/ASCE 6.
B. Work grout into masonry cores and cavities to eliminate voids.
C. Do not install grout in lifts greater than 16 inches without consolidating grout by rodding.
D. Do not displace reinforcement while placing grout.
E. Remove excess mortar from grout spaces.

3.3 GROUTING

A. Use either high-lift or low-lift grouting techniques, at Contractor's option, in accordance with ACI 530.1.
B. Consolidate grout with a mechanical vibrator on any grout pours greater than 12 inches in height; and in accordance with ACI 530.1. Grout pours 12 inches or less in height shall be mechanically vibrated or puddled. Do not over consolidate.
C. When grouting is stopped for 1 hour or longer, stop the grout pour 1 1/2 inches below the top of the masonry to create a shear key.
D. Pour grout only after reinforcing is in place. Prevent displacement of bars as grout is poured.
E. Place grout for each pour continuously and consolidate immediately; do not interrupt pours for more than 1-1/2 hours.
F. Place grout for spanning elements in single, continuous pour.

3.4 FIELD QUALITY CONTROL

A. An independent testing agency will perform field tests, in accordance with provisions of Section 01400.
   1. Tests and evaluation listed in this Article will be performed during construction for each 5000 square feet of wall area or fraction thereof.

B. Test and evaluate mortar in accordance with ASTM C 780 procedures.
   1. Test with same frequency as specified for masonry units.

C. Test and evaluate grout in accordance with ASTM C 1019 procedures.
   1. Test with same frequency as specified for masonry units.

D. Prism Tests: Test masonry and mortar panels for compressive strength in accordance with ASTM C 1388, and for flexural bond strength in accordance with ASTM C 1072 or ASTM E 518; perform tests and evaluate results as specified in individual masonry sections
   1. Prepare set of prisms for testing at 7 days and 1 set for testing at 28 day

END OF SECTION

SECTION 06100

ROUGH CARPENTRY

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Floor, wall, and roof sheathing.
B. Miscellaneous framing and sheathing.
C. Miscellaneous wood nailers and furring strips.

1.2 RELATED SECTIONS
A. Section 06114 - Wood Blocking and Curbing
B. Section 09260 - Gypsum Board Assemblies

1.3 REFERENCES
A. Unless otherwise noted the most current issue of the reference shall be used.
B. AFPA T10 - Wood Frame Construction Manual; American Forest and Paper Association.
C. AWPA C2 - Lumber, Timber, Bridge Ties and Mine Ties -- Preservative Treatment by Pressure Processes; American Wood-Preservers' Association.
D. AWPA C20 - Structural Lumber -- Fire Retardant Treatment by Pressure Processes; American Wood-Preservers' Association.
E. PS 1 - Construction and Industrial Plywood; National Institute of Standards and Technology (Department of Commerce).
F. PS 20 - American Softwood Lumber Standard; National Institute of Standards and Technology (Department of Commerce).
G. PRI - 400 - Performance for APA EWS I-Joists; The Engineered Wood Association.
H. PRL-501 - Performance Standard for APA EWS Laminated Veneer Lumber; The Engineered Wood Association.
I. F405 - APA Performance Rated Panels; The Engineered Wood Association.
J. WWPA G-5 - Western Lumber Grading Rules; Western Wood Products Association.

1.4 SUBMITTALS
A. See Section 01300 - Administrative Requirements, for submittal procedures.
B. Product Data: Provide technical data on wood preservative materials and application instructions.
C. Samples: For rough carpentry members that will be exposed to view, submit two samples 12 inches in size illustrating wood grain, color, and general appearance.
D. Manufacturer's Certificate: Certify that wood products supplied for rough carpentry meet or exceed specified requirements.

1.5 QUALITY ASSURANCE
A. Lumber: Comply with PS 20 and approved grading rules and inspection agencies.
B. Do not use split, warped, twisted or otherwise damaged or unacceptable members. All such members shall be removed from the site at the discretion of the Architect.
C. Do not use moisture damaged materials. All such materials shall be removed from the site at the discretion of the Architect.

1.6 QUALIFICATIONS
A. Design structural site fabricated trusses under direct supervision of a Professional Structural Engineer experienced in design of such trusses and licensed in the State in which the Project is located.

1.7 DELIVERY, STORAGE, AND HANDLING
A. Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.
B. Protect site fabricated trusses from warping or other distortion by stacking in vertical position, braced to resist movement.

PART 2 – PRODUCTS

2.1 SECTION INCLUDES

A. Grading Agency: Western Wood Products Association (WWPA).
B. Sizes: Nominal sizes as indicated on drawings, S4S.
C. Moisture Content: S-dry or MC19.
D. Stud Framing (2 x 2 through 2 x 6):
   1. Species: Douglas Fir-Larch.
   2. Grade: Select Structural.
E. Joist, Rafter, and Small Beam Framing (2 x 6 through 4 x 16):
   1. Machine stress-rated (MSR) as follows:
      a. Fb-single (minimum extreme fiber stress in bending): 1350 psi.
      b. E (minimum modulus of elasticity): 1,300,000 psi.
   2. Species: Douglas Fir-Larch.
F. Miscellaneous Blocking, Furring, and Nailers:
   1. Lumber: S4S, No. 2 or Standard Grade.

2.2 EXPOSED BOARDS

A. Moisture Content: Kiln-dry (15 percent maximum).
B. Surfacing: S4S.
C. Species: Douglas Fir.
D. Grade: No. 2, 2 Common, or Construction.

2.3 CONSTRUCTION PANELS

   1. Size: Nominal 1/2 inch in 4 foot by 8 foot sheets.
B. Miscellaneous Panels:
   1. Concealed Plywood: PS 1, C-C Plugged, exterior grade.
   2. Exposed Plywood: PS 1, A-D, interior grade.
   3. Electrical Component Mounting: APA rated sheathing, fire retardant treated.

2.4 ACCESSORIES

A. Fasteners and Anchors:
   1. Fasteners: Hot-dipped galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.
   2. Drywall Screws: Bugle head, hardened steel, power driven type, length three times thickness of sheathing.
   3. Anchors: Expansion shield and lag bolt type for anchorage to solid masonry or concrete.
B. Joist Hangers: Hot dipped galvanized steel, sized to suit framing conditions.
C. Sill Gasket on Top of Foundation Wall: 1/4 inch thick, plate width, closed cell plastic foam from continuous rolls.
D. Sill Flashing: As specified in Section 07620.
E. Subfloor Glue: Waterproof, water base, air cure type, cartridge dispensed.
F. Building Paper: No. 30 asphalt felt.
G. Termite Shield: copper.

2.5 FACTORY WOOD TREATMENT

A. Fire Retardant Treatment: AWPA Treatment C20, Interior Type A Low Temperature (low hygroscopic), chemical treatment pressure impregnated; capable of providing a maximum flame spread/smoke development rating of 25 / 450.
B. Pressure Treatment of Lumber Above Grade: AWPA Treatment C2 using waterborne preservative to 0.25 lb/cu ft retention.
   1. Kiln dry after treatment to maximum moisture content of 19 percent.
   2. Treat wood in contact with roofing, flashing, or waterproofing.
   3. Treat wood in contact with masonry or concrete.

4. Treat wood less than 18 inches above grade.

C. Pressure Treatment of Lumber in Contact with Soil: AWPA Treatment C2 using waterborne preservative designated in AWPA C2 as suitable for ground contact use to 0.4 lb/cu ft retention.

PART 3 – EXECUTION

3.1 FRAMING INSTALLATION

A. All framing shall be Platform type as put forth in AFPA T10- Balloon Framing is not permissible.
B. Unless otherwise noted, all framing members shall be spaced at 16 inch on center intervals and secured with a minimum of five 10d toenails or screws at the end of each member.
C. Install all framing members in compliance with detailing presented in AFPA T10 - Wood Frame Construction Manual- unless exceeded herein.
D. Set structural members level, plumb, and true to line. Discard pieces with defects that would lower required strength or result in unacceptable appearance of exposed members.
E. Make provisions for temporary construction loads, and provide temporary bracing sufficient to maintain structure in true alignment and safe condition until completion of erection and installation of permanent bracing.
F. Install structural members full length without splices unless otherwise specifically detailed.
G. Install horizontal spanning members with crown edge up and not less than 1-1/2 inches of bearing at each end.
H. Construct double joist headers at floor and ceiling openings and under wall stud partitions that are parallel to floor joists; use metal joist hangers unless otherwise detailed and comply with fasteners listed above.
I. Provide solid blocking at all joists and other framing in excess of 8 feet span. Provide solid blocking at 8 feet on center across all floor joists. Fit solid blocking at ends of joists over all supporting members.
J. Provide continuous double 2 inch by 4 inch stiffeners over all ceiling joists at 8 foot centers or at mid span for members less than 16 feet. Stiffeners shall by constructed of one flat 2 inch by 4 inch member, with one 2 inch by 4 inch member on edge and nailed to flat member and joists on 16 inch centers.
K. Provide solid blocking at framing in excess of 8 feet span and as detailed. Fit solid blocking at ends of members.
L. Fire blocking: install solid fire blocking of identical sized material to studs or joists between floors where balloon framing is encountered and over all supporting girders or beams.
M. Frame openings with two studs at each jamb for openings not exceeding 4 foot; Frame openings with three studs at each jamb for openings from 4 foot to 8 foot; Frame openings with 5 studs at each jamb for openings exceeding 8 foot; support headers on cripple studs at each end and at center to center spacing.
N. Provide miscellaneous members as indicated or as required to support finishes, fixtures, specialty items, and trim.

3.2 INSTALLATION OF ACCESSORIES AND MISCELLANEOUS WOOD

A. Place full width continuous sill flashings or termite shield under framed walls over sill gasket. Lap flashing joints 4 inches and seal.
B. Place sill gasket directly on cementitious foundation. Puncture gasket cleanly and fit tightly to protruding foundation anchor bolts.
C. Coordinate installation of LVL beams, wood decking, wood chord metal joists, glue laminated structural units, prefabricated wood trusses, and plywood web joists.
D. Install I-joists in compliance with manufacturer's recommended procedures unless exceeded herein. Provide continuous rim joists at outer edges of all joists both parallel and perpendicular to joists.
E. Curb roof openings except where prefabricated curbs are provided. Form corners by alternating lapping side members.

F. Coordinate curb installation with installation of decking and support of deck openings.
G. See Section 06114 for installation of wood blocking and curbing for roof applications.

3.3 INSTALLATION OF CONSTRUCTION PANELS

A. Install telephone and electrical panel back boards made of plywood or other acceptable structural panels at locations indicated. Size back boards to be minimum 6 inches beyond size of telephone and electrical panels.
B. Sub-flooring/Underlayment Combination: Glue and nail to framing using minimum 2 1/2 inch long nails; staples are not permitted.
C. Sub-flooring: Glue and nail to framing using minimum 2 1/2 inch long nails; staples are not permitted.
D. Underlayment: Secure to sub-flooring with nails and glue.
    1. At locations where resilient flooring will be installed, fill and sand splits, gaps, and rough areas.
    2. Place building paper between floor underlayment and sub-flooring.
E. Roof Sheathing: Secure panels perpendicular to framing members, with ends staggered and sheet ends over firm bearing.
    1. Use sheathing clips between roof framing members.
    2. Provide solid edge blocking between sheets.
    3. Screw panels to framing with galvanized screws; staples are not permitted.
F. Wall Sheathing: Secure with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using nails or screws of minimum 2 inch length.
    1. Use plywood at building corners, for not less than 96 inches, measured horizontally.
    2. Place building paper horizontally over wall sheathing, weather lapping edges and ends.

3.4 SITE APPLIED WOOD TREATMENT

A. Apply preservative treatment compatible with factory applied treatment at site-sawn cuts, complying with manufacturer's instructions.
B. Allow preservative to dry prior to erecting members.

3.5 TOLERANCES

A. Framing Members: 1/4 inch from true position, maximum.
B. Surface Flatness of Floor: 1/8 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.
C. Variation from Plane (Other than Floors): 1/4 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.

END OF SECTION

SECTION 06114

WOOD BLOCKING AND CURBING

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Blocking in wall and roof openings.
B. Preservative treatment of wood.
C. Concealed wood blocking for support of toilet and bath accessories, wall cabinets, wood trim, and all wall mounted items.

1.2 RELATED SECTIONS
A. Section 06100: Rough Carpentry.
B. Section 09260: Gypsum Board Assemblies.

1.3 REFERENCES
A. Unless otherwise noted the most current issue of the reference shall be used.
B. AWPA C2 - Lumber, Timber, Bridge Ties and Mine Ties -- Preservative Treatment by Pressure Processes; American Wood-Preservers' Association.
C. AWPA C20 - Structural Lumber -- Fire Retardant Treatment by Pressure Processes; American Wood-Preservers' Association.
D. PS 1 - Construction and Industrial Plywood; National Institute of Standards and Technology (Department of Commerce).
E. PS 20 - American Softwood Lumber Standard; National Institute of Standards and Technology (Department of Commerce).
F. RIS (GR) - Standard Specifications for Grades of California Redwood Lumber; Redwood Inspection Service.
G. SPIB (GR) - Grading Rules; Southern Pine Inspection Bureau, Inc.
H. WCLB (GR) - Standard Grading Rules for West Coast Lumber No. 17; West Coast Lumber Inspection Bureau.
I. WWPA G-5 - Western Lumber Grading Rules; Western Wood Products Association.

1.4 SUBMITTALS
A. See Section 01300 - Administrative Requirements, for submittal procedures.
B. Product Data: Provide technical data on wood preservative materials.

1.5 QUALITY ASSURANCE
A. Lumber: Comply with PS 20 and approved grading rules and inspection agencies.
   1. Acceptable Lumber Inspection Agencies: RIS, SPIB, WCLB, and WWPA.
   2. Lumber of other species or grades, or graded by other agencies, is acceptable provided structural and appearance characteristics are equivalent to or better than products specified.
B. Plywood: Comply with PS 1.

PART 2 – PRODUCTS

2.1 DIMENSION LUMBER
A. Grading Agency: Western Wood Products Association (WWPA).
B. Sizes: Nominal sizes as indicated on drawings, S4S. Wood blocking for all wall mounted items shall be 2 x 6 inch nominal unless otherwise noted.
C. Moisture Content: S-dry or MC19.
D. Miscellaneous Blocking, Furring, and Nailers:
   1. Structural grade 1200fb Douglas Fir as defined in Section 06100.

2.2 CONSTRUCTION PANELS
A. Plywood Sheathing: PS 1, Grade C-D, Exposure I. Panels shall be treated as listed in the Factory Wood Treatment article of this section and as listed in the schedule.
B. All other panels as listed in Section 06100.

2.3 ACCESSORIES

A. Fasteners and Anchors:
   1. Fasteners: Hot-dipped galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.
   2. Anchors: Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Anchor bolt for anchorage into cavity walls.

2.4 FACTORY WOOD TREATMENT

A. Wood preservative pressure treatment: ACQ Type D preservative; retention level .25
   1. Kiln dry after treatment to maximum moisture content of 19 percent.
   2. Treat wood in contact with roofing, flashing, or waterproofing.
   3. Treat wood in contact with masonry or concrete.
   4. Treat wood less than 18 inches above grade.
B. Fire Retardant Treatment: AWPA Treatment C20, Interior Type, Class A, Low Hygroscopic, Chemically treated and pressure impregnated; capable of providing a maximum flame spread/smoke development rating of 25 / 450.

PART 3 – EXECUTION

3.1 PREPARATION

A. Examine all surfaces to receive parts of the work specified herein. Application or installation of materials constitutes acceptance of the substrate.
B. Verify all dimensions of in-place and subsequent construction and that it accurately fit this part of the work to other construction.
C. Protect lumber and keep under cover both in transit and at job site. Protect from dampness.

3.2 FRAMING

A. Set members level and plumb, in correct position.
B. Place horizontal members with crown side up.
C. Curb roof openings except where prefabricated curbs are provided. Form corners by alternating lapping side members.
D. Coordinate curb installation with installation of decking and support of deck openings.
E. All wood blocking that is installed is to be temporarily protected form moisture utilizing 15 lb. roofing felt.
F. All wood blocking joints to be mitered @ 45 degrees, staggered, and screw fastened together.
G. Provide miscellaneous members as indicated or as required to support finishes, fixtures, specialty items, and trim.

3.3 INSTALLATION OF CONSTRUCTION PANELS

A. Sheathing: Secure with long dimension perpendicular to framing members, with ends over firm bearing and staggered, using screws.

3.4 SCHEDULES

A. Roof Blocking: S/P/F species, 19 percent maximum moisture content, pressure preservative treatment. Roof edge and roof related wood blocking.
B. Treated plywood: Roof edge and roof related conditions.
C. Miscellaneous wood blocking exterior: S/P/F species, 19 percent maximum moisture content, pressure preservative treatment.
D. Miscellaneous wood blocking interior: Provide wood blocking for support of toilet and bath accessories, wall cabinets, wood trim, and all other wall mounted items. Utilize material as listed in this section and in section 06100. Wood blocking for wall mounted items shall be minimum of 2 x 6 inch nominal dimensional lumber. Fasten wood blocking with minimum 2 screws each side into framing. Where conflicts occur, the more astringent requirement shall prevail.

END OF SECTION

SECTION 07212

BOARD AND BATT INSULATION

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Board insulation and integral vapor retarder at cavity wall construction and perimeter foundation wall.
B. Protection Board insulation for sheet water proofing applications.
C. Batt insulation and vapor retarder in exterior wall, ceiling, and roof construction.
D. Batt insulation for filling perimeter window and door shim spaces and crevices in exterior wall and roof.

1.2 RELATED SECTIONS
A. Section 03300 - Cast in Place Concrete: perimeter insulation.
B. Section 09260 - Gypsum Board Assemblies: Acoustic insulation.

1.3 REFERENCES
A. ASTM C578 - Preformed, Cellular Polystyrene Thermal Insulation.
B. ASTM C 665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2001.
C. ASTM D 2842 - Standard Test Method for Water Absorption of Rigid Cellular Plastics; 2001.
D. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2001.
E. ASTM E 96 - Standard Test Methods for Water Vapor Transmission of Materials; 2000.

1.4 SYSTEM DESCRIPTION
A. Materials of This Section: Provide continuity of thermal barrier at building enclosure.

1.5 SUBMITTALS
A. See Section 01300 - Administrative Requirements, for submittal procedures.
B. Product Data: Provide data on product characteristics, performance criteria, and product limitations, ASTM Test Compliance and data.
   1. Provide product data on all materials and accessories comprising a complete installation including but not limited to all adhesives, clips and other accessories.
C. Manufacturer's Installation Instructions: Include information on special environmental conditions required for installation and installation techniques.
D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.6 ENVIRONMENTAL REQUIREMENTS
A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

1.7 SEQUENCING
A. Sequence work to ensure fireproofing, firestop, vapor retarder, air barrier, and other related materials are in place before beginning work of this section.
B. Protection Board for Waterproofing: Provide complete installation of all waterproofing membrane, drainage and all related accessories. Allow Architect access to waterproofing for review prior to installing protection board or backfilling. Complete any remedial work as directed by Architect.

1.8 COORDINATION
A. Coordinate work under provisions of Section 01300

PART 2 – PRODUCTS

2.1 BOARD INSULATION MATERIALS

A. Extruded Polystyrene Board Insulation: Extruded polystyrene board with natural skin surfaces; with the following characteristics relative to application:
   1. Cavity wall applications; ASTM C 578 type IV.
      a. Board Size: 48 x 96 inch with 16 inch perforations for horizontal reinforcing applications.
      b. Board Thickness: 1-1/2 inches.
      c. Board Edges: Square.
      d. Thermal Resistance of 1 inch thickness at 25 degrees F: 5.6 minimum.
      e. Compressive Resistance: Min. 50 psi.
      f. Board Density: 1.6 lb/cu ft.
      g. Water Absorption, maximum: 0.3 percent, volume.
   2. Foundation or below grade applications; ASTM C 578 type VI.
      a. Board Size: 24 x 96 inch.
      b. Board Thickness: 2 inches.
      c. Board Edges: Square.
      d. Thermal Resistance of 1 inch thickness at 25 degrees F: 5.6 minimum.
      e. Compressive Resistance: 60 psi.
      f. Board Density: 1.8 lb/cu ft.
      g. Water Absorption, maximum: 0.3 percent, volume.
   3. Protection Board for Sheet Waterproofing below grade applications; ASTM C 578 type VI.
      a. Board Size: 48 x 96 inch or 24 x 96 inch.
      b. Board Thickness: 1/2 inches minimum.
      c. Board Edges: Square.
      d. Thermal Resistance of 1 inch thickness at 25 degrees F: 5.6 minimum.
      e. Compressive Resistance: 40 psi minimum for thickness stated.
      f. Board Density: 1.8 lb/cu ft.
      g. Water Absorption, maximum: 0.3 percent, volume.
   4. Manufacturers:
      a. Dow Chemical Co: www.dow.com.
      b. Owens Corning Corp: www.owenscorning.com.
      c. Pactiv Building Products formerly Tenneco Building Product 2907 Log Cabin Drive Smyrna, Georgia 30080-7013 800-241-4402 .
      d. Substitutions: See Section 01600 - Product Requirements.

2.2 MANUFACTURERS - ADHESIVES

A. As manufactured and recommended by insulation manufacturer.
B. Chem Rex, Inc., "Contact Brand PL300 Foam Board Adhesive."
C. Dacar Products, In., "Foamgrab PS."
D. Substitutions: Not permitted.

2.3 BATT INSULATION MATERIALS

A. Batt Insulation: ASTM C 665; preformed glass fiber batt; friction fit, conforming to the following:
   1. Manufacturers:
      a. CertainTeed Corporation: www.certainteed.com.
      b. Johns Manville Corporation: www.jm.com.
      c. Owens Corning Corp: www.owenscorning.com.
   2. Substitutions: See Section 01600 - Product Requirements.

2.4 ACCESSORIES

A. Sheet Vapor Retarder Type 1: Black polyethylene film for above grade application, 10 mil mil thick.
B. Tape: Bright aluminum self-adhering type, mesh reinforced and 2 inch wide.

C. Insulation Fasteners: Impaling clip of unfinished steel with washer retainer and clips, to be adhered to surface to receive board insulation, length to suit insulation thickness and substrate, capable of securely and rigidly fastening insulation in place.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Verify site conditions under provisions of Section 01300.
B. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation and adhesive.
C. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.2 BOARD INSTALLATION AT FOUNDATION PERIMETER

A. Adhere a 6-inch wide strip of polyethylene sheet over construction, control, and expansion joints with double beads of adhesive each side of joint.
B. Apply adhesive to back of boards:
    1. Three continuous beads per board length.
    2. Full bed 1/8 inch thick.
C. Install boards horizontally on foundation perimeter.
D. Place boards to maximize adhesive contact.
E. Install in running bond pattern.
F. Stagger side joints.
G. Butt edges and ends tightly to adjacent boards and to protrusions.
H. Extend boards over control and expansion joints, un-bonded to foundation 8 inches on one side of joint.
I. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.
J. All Boards to extend a minimum of 24” below outside grade.

3.3 BOARD INSTALLATION AT CAVITY WALLS

A. Adhere a 6-inch wide strip of polyethylene sheet over expansion joints with double beads of adhesive each side of joint.
    1. Extend sheet full height of joint.
B. Install using adhesive recommended by insulation manufacturer for application. Apply adhesive to back of boards:
    1. Three continuous beads per board length.
    2. Full bed 1/8 inch thick.
C. Install boards to fit snugly between wall ties.
    1. Place membrane surface facing out, and tape seal board joints.
D. Install boards horizontally on walls.
    1. Place boards to maximize adhesive contact.
    2. Install in running bond pattern.
    3. Butt edges and ends tightly to adjacent boards and to protrusions.
    4. Place impale fastener locking discs.
E. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.4 PROTECTION OF UNFINISHED WORK

A. Do not permit work to be damaged prior to covering insulation.

3.5 BATT INSTALLATION

A. Install insulation and vapor retarder in accordance with manufacturer's instructions.
B. Install in exterior wall and roof spaces without gaps or voids. Do not compress insulation.
C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.

D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.
E. Install with factory applied vapor retarder membrane facing warm side of building spaces. Lap ends and side flanges of membrane over framing members.
F. Staple facing flanges in place at maximum 6 inches on center.
G. Tape seal butt ends, lapped flanges, and tears or cuts in membrane.
H. At metal framing, place vapor retarder on warm side of insulation; lap and seal sheet retarder joints over member face.
I. Tape seal tears or cuts in vapor retarder.
J. Extend vapor retarder tightly to full perimeter of adjacent window and door frames and other items interrupting the plane of the membrane. Tape seal in place.

3.6 PROTECTION OF FINISHED WORK

A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION

SECTION 07840

FIRESTOPPING

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Firestopping materials.
B. Firestopping of all penetrations and interruptions to fire rated assemblies, whether indicated on drawings or not, and other openings indicated.

1.2 REFERENCES
A. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc.; current edition.

1.3 SUBMITTALS
A. See Section 01300 - Administrative Requirements, for submittal procedures.
B. Product Data: Provide data on product characteristics and fire rating.
C. Manufacturer's Installation Instructions: Indicate preparation and installation instructions.
D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.4 QUALITY ASSURANCE
A. Fire Testing: Provide firestopping assemblies of designs which provide the specified fire ratings when tested in accordance with methods indicated.
B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years documented experience.
C. Installer Qualifications: Company specializing in performing the work of this section and:
    1. Approved by Factory Mutual Research under FM Standard 4991, Approval of Firestop Contractors, or meeting any two of the following requirements:
        a. With minimum 3 years documented experience installing work of this type.
        b. Able to show at least 5 satisfactorily completed projects of comparable size and type.
        c. Licensed by authority having jurisdiction.
    2. Approved by firestopping manufacturer.

1.5 MOCK-UP
A. Install one firestopping assembly representative of each fire rating design required on project.
    1. Where one design may be used for different penetrating items or in different wall constructions, install one assembly for each different combination.
    2. Where firestopping is intended to fill a linear opening, install minimum of 1 linear ft.
B. If accepted, mock-up will represent minimum standard for the Work.
C. If accepted, mock-up may remain as part of the Work. Remove and replace mock-ups not accepted.

1.6 ENVIRONMENTAL REQUIREMENTS
A. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation. Maintain minimum temperature before, during, and for 3 days after installation of materials.
B. Provide ventilation in areas where solvent-cured materials are being installed.

PART 2 – PRODUCTS

2.1 FIRESTOPPING ASSEMBLIES
A. Firestopping at Control and Expansion Joints (without Penetrations), of widths 2 inches or less: Any material meeting requirements.
    1. Floor-to-Floor:
        a. UL Design No. FF-DD-0002, FF-D-0005, F Rating 1 & 2 hour.
        b. UL Design No. FF-D-0011, FF-D-0001, F Rating 3 hour.

2. Floor-to-Wall:
   a. UL Design No. FW-D-0004, FW-D-0005, FW-D-0002, F Rating 1 & 2 hour.
   b. UL Design No. FFW-D-0007, FW-D-0002, F Rating 3 hour.
3. Wall-to-Wall:
   a. UL Design No. WW-D-0013, WW-D-0004, WW-D-0017, F Rating 1 & 2 hour.
   b. UL Design No. WW-D-0013, WW-D-0001, F Rating 3 hour.
4. Head-of-Wall:
   a. UL Design No. HW-D-0020, HW-D-0043, HW-D-0034, F Rating 1 & 2 hour.
   b. UL Design No. HW-D-0060, HW-D-0061, F Rating 3 hour.

B. Firestopping at Metallic Pipe, Conduit, or Tubing Penetrations, of diameter 4 inches or less; for single penetrations: Any material meeting requirements.
1. Concrete Floors 5 inches in thickness or less:
   a. UL Design No. C-AJ-1014, C-AJ-1240, C-AJ-1149, F Rating 1 & 2 hour.
   b. UL Design No. C-AJ-1058, C-AJ-1198, C-AJ-1155, F Rating 3 hour.
2. Concrete Floors 5 inches in thickness or greater:
   a. UL Design No. C-AJ-1004, C-AJ-1005, F Rating 1 & 2 hour.
   b. UL Design No. C-AJ-1004, C-AJ-1005, F Rating 3 & 4 hour.
3. Roof Slabs 5 inches in thickness or less:
   a. UL Design No. C-AJ-1014, C-AJ-1240, C-AJ-1149, F Rating 1 & 2 hour.
   b. UL Design No. C-AJ-1058, C-AJ-1198, C-AJ-1155, F Rating 3 hour.
4. Roof Slabs 5 inches in thickness or greater:
   a. UL Design No. C-AJ-1004, C-AJ-1005, F Rating 1 & 2 hour.
   b. UL Design No. C-AJ-1004, C-AJ-1005, F Rating 3 & 4 hour.
5. Concrete/Masonry Walls 8 inches in thickness or less:
   a. UL Design No. C-AJ-1014, C-AJ-1240, C-AJ-1149, F Rating 1 & 2 hour.
   b. UL Design No. C-AJ-1058, C-AJ-1198, C-AJ-1155, F Rating 3 hour.
6. Concrete/Masonry Walls 8 inches in thickness or greater:
   a. UL Design No. C-AJ-1004, C-AJ-1005, F Rating 1 & 2 hour.
   b. UL Design No. C-AJ-1004, C-AJ-1005, F Rating 3 & 4 hour.
7. Framed Floors:
   a. UL Design No. F-C-1002, F-C-1010, F-C-1059, F Rating 1 & 2 hour.
8. Framed Walls:
   a. UL Design No. W-L-1001, W-L-1049, W-L-1054, F Rating 1 & 2 hour.
   b. UL Design No. W-L-1001, W-L-1172, F Rating 3 hour.

C. Firestopping at Metallic Pipe, Conduit, or Tubing Penetrations, of diameter 4 inches or less; for multiple penetrations: Any material meeting requirements.
1. Concrete Floors 5 inches in thickness or less:
   a. UL Design No. C-AJ-1092, C-AJ-1047, C-AJ-1140, F Rating 1 & 2 hour.
   b. UL Design No. C-AJ-1234, F Rating 3 hour.
2. Concrete Floors 5 inches in thickness or greater:
   a. UL Design No. C-AJ-1003, F Rating 1 & 2 hour.
3. Roof Slabs 5 inches in thickness or less:
   a. UL Design No. C-AJ-1092, C-AJ-1047, C-AJ-1140, F Rating 1 & 2 hour.
   b. UL Design No. C-AJ-1234, F Rating 3 hour.
4. Roof Slabs 5 inches in thickness or greater:
   a. UL Design No. C-AJ-1003, F Rating 1 & 2 hour.
5. Concrete/Masonry Walls 8 inches in thickness or less:
   a. UL Design No. C-AJ-1092, C-AJ-1047, C-AJ-1140, F Rating 1 & 2 hour.
   b. UL Design No. C-AJ-1234, F Rating 3 hour.
6. Concrete/Masonry Walls 8 inches in thickness or greater:
   a. UL Design No. C-AJ-1003, F Rating 1 & 2 hour.
7. Framed Floors:
   a. UL Design No. F-C-1065, F-C-1066, F Rating 1 & 2 hour.

8. Framed Walls:
    a. UL Design No. W-L-1001, W-L-1049, W-L-54, F Rating 1 & 2 hour.
    b. UL Design No. W-L-1001, W-L-1172, F Rating 3 & 4 hour.

D. Firestopping at Non-Metallic Pipe, Conduit, or Tubing Penetrations, of diameter 4 inches or less; for single penetrations: Any material meeting requirements.
1. Concrete Floors 5 inches in thickness or less:
    a. UL Design No. C-AJ-2143, C-AJ-2063, C-AJ-2271, F Rating 1 & 2 hour.
    b. UL Design No. C-AJ-2117, C-AJ-2038, C-AJ-2271, F Rating 3 hour.
2. Concrete Floors 5 inches in thickness or greater:
    a. UL Design No. C-AJ-2001, C-AJ-2002, F Rating 1 & 2 hour.
    b. UL Design No. C-AJ-2001, C-AJ-2002, F Rating 3 & 4 hour.
3. Roof Slabs 5 inches in thickness or less:
    a. UL Design No. C-AJ-2143, C-AJ-2063, C-AJ-2271, F Rating 1 & 2 hour.
    b. UL Design No. C-AJ-2117, C-AJ-2038, C-AJ-2271, F Rating 3 hour.
4. Roof Slabs 5 inches in thickness or greater:
    a. UL Design No. C-AJ-2001, C-AJ-2002, F Rating 1 & 2 hour.
    b. UL Design No. C-AJ-2001, C-AJ-2002, F Rating 3 & 4 hour.
5. Concrete/Masonry Walls 8 inches in thickness or less:
    a. UL Design No. C-AJ-2143, C-AJ-2063, C-AJ-2271, F Rating 1 & 2 hour.
    b. UL Design No. C-AJ-2117, C-AJ-2038, C-AJ-2271, F Rating 3 hour.
6. Concrete/Masonry Walls 8 inches in thickness or greater:
    a. UL Design No. C-AJ-2001, C-AJ-2002, F Rating 1 & 2 hour.
    b. UL Design No. C-AJ-2001, C-AJ-2002, F Rating 3 & 4 hour.
7. Framed Floors:
    a. UL Design No. F-C-2024, F-C-2020, F-C-2025, F Rating 1 & 2 hour.
8. Framed Walls:
    a. UL Design No. W-L-2162, W-L-2047, W-L-2075, F Rating 1 & 2 hour.
    b. UL Design No. W-L-2162, W-L-2195, F Rating 3 hour.

E. Firestopping at Non-Metallic Pipe, Conduit, or Tubing Penetrations, of diameter 4 inches or less; for multiple penetrations: Any material meeting requirements.
1. Concrete Floors 5 inches in thickness or less:
    a. UL Design No. C-AJ-2093, C-AL-2140, F Rating 1 & 2 hour.
    b. UL Design No. C-AJ-2092, F Rating 3 hour.
2. Roof Slabs 5 inches in thickness or less:
    a. UL Design No. C-AJ-2093, C-AL-2140, F Rating 1 & 2 hour.
    b. UL Design No. C-AJ-2092, F Rating 3 hour.
3. Concrete/Masonry Walls 8 inches in thickness or less:
    a. UL Design No. C-AJ-2093, C-AL-2140, F Rating 1 & 2 hour.
    b. UL Design No. C-AJ-2092, F Rating 3 hour.
4. Framed Floors:
    a. UL Design No. F-C-2115, F-C-2129, F-C-2158, F Rating 1 & 2 hour.
5. Framed Walls:
    a. UL Design No. C-AJ-2021, W-L-2032, F Rating 1 & 2 hour.

F. Firestopping at Cable Tray Penetrations: Any material meeting requirements.
1. Concrete Floors 5 inches in thickness or less:
    a. UL Design No. C-AJ-4003, C-AJ-4020, C-AJ-4017, F Rating 1 & 2 hour.
    b. UL Design No. C-AJ-4003, C-AJ-4020, C-AJ-4017, F Rating 3 hour.
2. Roof Slabs 5 inches in thickness or less:
    a. UL Design No. C-AJ-4003, C-AJ-4020, C-AJ-4017, F Rating 1 & 2 hour.
    b. UL Design No. C-AJ-4003, C-AJ-4020, C-AJ-4017, F Rating 3 hour.
3. Concrete/Masonry Walls 8 inches in thickness or less:
    a. UL Design No. C-AJ-4003, C-AJ-4020, C-AJ-4017, F Rating 1 & 2 hour.
    b. UL Design No. C-AJ-4003, C-AJ-4020, C-AJ-4017, F Rating 3 hour.
4. Framed Walls:
    a. UL Design No. W-L-4004, W-L-4005, W-L-4011, F Rating 1 & 2 hour.

G. Firestopping at Cable Penetrations, not in Conduit or Cable Tray: Any material meeting requirements.
   1. Concrete Floors 5 inches in thickness or less:
      a. UL Design No. C-AJ-3030, C-AJ-3133, C-AJ-3072, F Rating 1 & 2 hour.
      b. UL Design No. C-AJ-3030, C-AJ-3023, C-AJ-3072, F Rating 3 hour.
   2. Concrete Floors 5 inches in thickness or greater:
      a. UL Design No. C-BK-3001, C-BK-3002, F Rating 1 & 2 hour.
      b. UL Design No. C-BK-3001, C-BK-3002, F Rating 3 hour.
   3. Roof Slabs 5 inches in thickness or less:
      a. UL Design No. C-AJ-3030, C-AJ-3133, C-AJ-3072, F Rating 1 & 2 hour.
      b. UL Design No. C-AJ-3030, C-AJ-3023, C-AJ-3072, F Rating 3 hour.
   4. Roof Slabs 5 inches in thickness or greater:
      a. UL Design No. C-BK-3001, C-BK-3002, F Rating 1 & 2 hour.
      b. UL Design No. C-BK-3001, C-BK-3002, F Rating 3 hour.
   5. Concrete/Masonry Walls 8 inches in thickness or less:
      a. UL Design No. C-AJ-3030, C-AJ-3133, C-AJ-3072, F Rating 1 & 2 hour.
      b. UL Design No. C-AJ-3030, C-AJ-3023, C-AJ-3072, F Rating 3 hour.
   6. Concrete/Masonry Walls 8 inches in thickness or greater:
      a. UL Design No. C-BK-3001, C-BK-3002, F Rating 1 & 2 hour.
      b. UL Design No. C-BK-3001, C-BK-3002, F Rating 3 hour.
   7. Framed Floors:
      a. UL Design No. F-C-3002, F-C-3045, F-C-3012, F Rating 1 & 2 hour.
   8. Framed Walls:
      a. UL Design No. W-L-3110, W-L-3076, W-L-3065, F Rating 1 & 2 hour.
      b. UL Design No. W-L-3139, F Rating 3 hour.

H. Firestopping at Insulated Piping: Any material meeting requirements.
   1. Concrete Floors 5 inches in thickness or less:
      a. UL Design No. C-AJ-5001, C-AJ-5058, C-AJ-5045, F Rating 1 & 2 hour.
      b. UL Design No. C-AJ-5001, C-AJ-5058, C-AJ-5061, F Rating 3 hour.
   2. Concrete Floors 5 inches in thickness or greater:
      a. UL Design No. C-BK-5001, C-BK-5002, F Rating 1 & 2 hour.
      b. UL Design No. C-BK-5001, C-BK-5002, F Rating 3 hour.
   3. Roof Slabs 5 inches in thickness or less:
      a. UL Design No. C-AJ-5001, C-AJ-5058, C-AJ-5045, F Rating 1 & 2 hour.
      b. UL Design No. C-AJ-5001, C-AJ-5058, C-AJ-5061, F Rating 3 hour.
   4. Roof Slabs 5 inches in thickness or greater:
      a. UL Design No. C-BK-5001, C-BK-5002, F Rating 1 & 2 hour.
      b. UL Design No. C-BK-5001, C-BK-5002, F Rating 3 hour.
   5. Concrete/Masonry Walls 8 inches in thickness or less:
      a. UL Design No. C-AJ-5001, C-AJ-5058, C-AJ-5045, F Rating 1 & 2 hour.
      b. UL Design No. C-AJ-5001, C-AJ-5058, C-AJ-5061, F Rating 3 hour.
   6. Concrete/Masonry Walls 8 inches in thickness or greater:
      a. UL Design No. C-AJ-5001, C-AJ-5058, C-AJ-5045, F Rating 1 & 2 hour.
      b. UL Design No. C-AJ-5001, C-AJ-5058, C-AJ-5061, F Rating 3 hour.
   7. Framed Floors:
      a. UL Design No. F-C-5038, F-C-5055, F-C-5029, F Rating 1 & 2 hour.
   8. Framed Walls:
      a. UL Design No. W-L-5011, W-L-5014, W-L-5029, F Rating 1 & 2 hour.
      b. UL Design No. W-L-5101, W-L-5023, W-L-5085, F Rating 3 hour.

I. Firestopping at Miscellaneous Electrical Penetrants such as Busducts: Any material meeting requirements.
   1. Concrete Floors 5 inches in thickness or less:
      a. UL Design No. C-AJ-6002, C-AJ-6003, C-AJ-6006, F Rating 1 & 2 hour.
      b. UL Design No. C-AJ-6002, C-AJ-6003, C-AJ-6006, F Rating 3 hour.

2. Roof Slabs 5 inches in thickness or less:
   a. UL Design No. C-AJ-6002, C-AJ-6003, C-AJ-6006, F Rating 1 & 2 hour.
   b. UL Design No. C-AJ-6002, C-AJ-6003, C-AJ-6006, F Rating 3 hour.
3. Concrete/Masonry Walls 8 inches in thickness or less:
   a. UL Design No. C-AJ-6002, C-AJ-6003, C-AJ-6006, F Rating 1 & 2 hour.
   b. UL Design No. C-AJ-6002, C-AJ-6003, C-AJ-6006, F Rating 3 hour.
4. Framed Walls:
   a. UL Design No. W-L-6002, W-L-6001, W-L-6004, F Rating 1 & 2 hour.

J. Firestopping at Miscellaneous Mechanical Penetrants such as Air Ducts: Any material meeting requirements.
1. Concrete Floors 5 inches in thickness or less:
   a. UL Design No. C-AJ-7013, C-AJ-7047, F Rating 1 & 2 hour.
   b. UL Design No. C-AJ-7003, C-AJ-7046, F Rating 3 hour.
2. Roof Slabs 5 inches in thickness or less:
   a. UL Design No. C-AJ-7013, C-AJ-7047, F Rating 1 & 2 hour.
   b. UL Design No. C-AJ-7003, C-AJ-7046, F Rating 3 hour.
3. Concrete/Masonry Walls 8 inches in thickness or less:
   a. UL Design No. C-AJ-7013, C-AJ-7047, F Rating 1 & 2 hour.
   b. UL Design No. C-AJ-7003, C-AJ-7046, F Rating 3 hour.
4. Framed Floors:
   a. UL Design No. F-C-7001, F-C-7002, F-C-7013, F Rating 1 & 2 hour.
5. Framed Walls:
   a. UL Design No. W-L-7041, W-L-7025, W-L-7040, F Rating 1 & 2 hour.

K. Firestopping at Groupings of penetrations including any combination of items above: Any material meeting requirements.
1. Concrete Floors 5 inches in thickness or less:
   a. UL Design No. C-AJ-8001, C-AJ-8016, C-AJ-8041, F Rating 1 & 2 hour.
   b. UL Design No. C-AJ-8001, C-AJ-8016, C-AJ-8041, F Rating 3 hour.
2. Roof Slabs 5 inches in thickness or less:
   a. UL Design No. C-AJ-8001, C-AJ-8016, C-AJ-8041, F Rating 1 & 2 hour.
   b. UL Design No. C-AJ-8001, C-AJ-8016, C-AJ-8041, F Rating 3 hour.
3. Concrete/Masonry Walls 8 inches in thickness or less:
   a. UL Design No. C-AJ-8001, C-AJ-8016, C-AJ-8041, F Rating 1 & 2 hour.
   b. UL Design No. C-AJ-8001, C-AJ-8016, C-AJ-8041, F Rating 3 hour.
4. Framed Walls:
   a. UL Design No. W-L-8013, W-L-8016, F Rating 1 & 2 hour.
   b. UL Design No. W-L-8014, W-L-8015, F Rating 3 hour.

L. Firestopping between Edge of Floor Slab and Curtain Wall (without Penetrations): Glass fiber or mineral fiber safing insulation; UL Design No.F-C-7001, F Rating 1 hour.

M. Temporary Firestopping: Intumescent pillows; UL Design No. C-AJ-2020, F Rating 1-1/2 hour; provide at locations indicated on drawings.

2.2 MATERIALS

A. Manufacturers:
1. 3M Fire Protection Products.
2. Firestop Systems, Inc.
3. Hilti Construction Chemicals, Inc.
4. Isolatek International.
5. Johns Mansville International, Inc.
6. Specified Technologies, Inc.
7. Tremco.
8. Substitutions: See Section 01600 - Product Requirements.

B. Elastomeric Silicone Firestopping: Single component silicone elastomeric compound and compatible silicone sealant. Type required for tested assembly design.
1. Color: Dark grey.

C. Fibered Compound Firestopping: Formulated compound mixed with incombustible non-asbestos fibers. Type required for tested assembly design.
   1. Color: Dark grey.
D. Fiber Packing Material: Mineral fiber packing insulation. Type required for tested assembly design.
E. Foil Tape: Nominal 3 mil. thick pressure sensitive aluminum foil tape. Type required for tested assembly design.
F. Firestop Devices: Mechanical device with incombustible filler and galvanized steel jacket, collar, and flanged stops. Type required for tested assembly design.
G. Intumescent Composite Sheet: Rigid panels consisting of aluminum-foil-faced elastomeric sheet bonded to galvanized steel sheet. Type required for tested assembly design.
H. Hangers: Minimum 1 inch wide strips of minimum 0.034 inch (20 gauge) galvanized steel sheet. Type required for tested assembly design.
I. Fire Spray: Sprayable, flexible, water-based coating that is water-resistant. Type required for tested assembly design.
J. Caulks: Single component, water-based, non-flammable, paintable coating with non-sag and low shrinkage characteristics. Type required for tested assembly design.
K. Mortars: Prepackaged, dry mixes consisting of a blend of inorganic binders, hydraulic cement, fillers, and lightweight aggregate formulated for mixing with water at Project site to form a nonshrinking, homogeneous mortar. Type required for tested assembly design.
L. Primers, Sleeves, Forms, and Accessories: Type required for tested assembly design.

PART 3 – EXECUTION

3.1 EXAMINATION
A. Verify openings are ready to receive the work of this section.

3.2 PREPARATION
A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter which may affect bond of firestopping material.
B. Remove incompatible materials which may affect bond.
C. Priming: Prime substrates where recommended in writing by through-penetration firestop system manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.

3.3 INSTALLATION
A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.

3.4 CLEANING AND PROTECTION
A. Clean adjacent surfaces of firestopping materials.
B. Protect adjacent surfaces from damage by material installation.

END OF SECTION

SECTION 07900

JOINT SEALERS

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Sealants and joint backing.

1.2 RELATED SECTIONS
A. Section 08800 – Glazing: Glazing sealants and accessories.
B. Section 09260 – Gypsum Board Assemblies: Acoustic Sealant.

1.3 REFERENCES
A. ASTM C 834 - Standard Specification for Latex Sealants; 2000.
B. ASTM C 919 - Standard Practice for Use of Sealants in Acoustical Applications; 2002.
C. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants; 2002.
D. ASTM C 1193 - Standard Guide for Use of Joint Sealants; 2000.
E. ASTM D 1667 - Standard Specification for Flexible Cellular Materials--Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam); 1997.

1.4 SUBMITTALS
A. See Section 01300 - Administrative Requirements, for submittal procedures.
B. Product Data: Provide data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.

1.5 QUALITY ASSURANCE
A. Applicator Qualifications: Company specializing in performing the work of this section with minimum 3 years experience and approved by manufacturer.

1.6 ENVIRONMENTAL REQUIREMENTS
A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.7 WARRANTY
A. See section 01780 – Closeout Submittals, for additional warranty requirements.
B. Correct defective work within a five year period after the Date of Substantial Completion.
C. Warranty: Include coverage for installed sealants and accessories which fail to achieve airtight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 – PRODUCTS

2.1 MANUFACTUERS
A. Silicone Sealants:
   1. Bostik Findley; www.bostikfindley-us.com.
   2. GE Plastics: www.geplastics.com.
   3. Pecora Corporation: www.pecora.com.
   4. Sonneborn, ChemRex, Inc; www.chemrex.com.
   5. Dow Corning: www.dowcorning.com
   6. Tremco, Inc: www.tremcosealants.com.
   7. Substitutions: See Section 01600 - Product Requirements.
B. Polyurethane Sealants:
   1. Bostik Findley; www.bostikfindley-us.com.
   2. Pecora Corporation: www.pecora.com.
   3. Sonneborn, ChemRex, Inc; www.chemrex.com.
   4. Tremco, Inc: www.tremcosealants.com.
   5. Substitutions: See Section 01600 - Product Requirements.

C. Butyl Sealants:
   1. Bostik Findley; www.bostikfindley-us.com.
   2. Pecora Corporation: www.pecora.com.
   3. TEC Specialty Products Inc.
   4. Tremco, Inc: www.tremcosealants.com.
   5. Substitutions: See Section 01600 - Product Requirements.
D. Preformed Compressible Foam Sealers:
   1. Emseal Joint Systems, Ltd: www.emseal.com.
   2. Sandell Manufacturing Company, Inc: www.sandellmfg.com.
   3. Polytite Manufacturing Corporation: www.polytite.com.
   4. Substitutions: See Section 01600 - Product Requirements.

2.2 SEALANTS

A. Type S1 - General Purpose Exterior Sealant: Polyurethane; ASTM C 920, Grade NS, Class 25, Uses M, G, and A; single component.
   1. Color: As selected by Architect from Manufacturer's full line of colors.
   2. Applications:
      a. Control, expansion and soft joints in masonry.
      b. Joints between concrete and other materials.
      c. Joints between metal frames and other materials.
      d. Other exterior joints for which no other sealant is indicated.
B. Type S2 - General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C 834, Type OP, Grade NF single component, paintable.
   1. Color: As selected by Architect from Manufacturer's full line of colors.
   2. Applications:
      a. Interior wall and ceiling control joints.
      b. Joints between door and window frames and wall surfaces.
      c. Other interior joints for which no other sealant is indicated.
C. Type S3 - Acoustical Sealant: Butyl or acrylic sealant; ASTM C 920, Grade NS, Class 12-1/2, Uses M and A; single component, solvent release curing, non-skinning.
   1. Color: N/A.
   2. Applications:
      a. For concealed locations only.
      b. Sealant bead between top stud runner and structure; and between bottom stud track and floor.
D. Type S4 - Interior Floor Joint Sealant: Polyurethane, self-leveling; ASTM C 920, Grade P, Class 25, Uses T, M and A; single component.
   1. Color: As selected by Architect from Manufacturer's full line of colors.
   2. Applications:
      a. Approved by manufacturer for wide joints up to 1-1/2 inches.
      b. Expansion joints in floors.
E. Type S5 - Concrete Paving Joint Sealant: Polyurethane, self-leveling; ASTM C 920, Class 25, Uses T, I, M and A; single component.
   1. Color: As selected by Architect from Manufacturer's full line of colors.
   2. Applications:
      a. Joints in sidewalks and vehicular paving.
      b. Compressible filler joints adjacent to foundations.

2.3 ACCESSORIES

A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
C. Joint Backing: Round foam rod compatible with sealant; ASTM D 1667, closed cell PVC; oversized 30 to 50 percent larger than joint width.

D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 – EXECUTION

3.1 EXAMINATION
A. Verify that substrate surfaces are ready to receive work.
B. Verify that joint backing and release tapes are compatible with sealant.

3.2 PREPARATION
A. Remove loose materials and foreign matter which might impair adhesion of sealant.
B. Clean and prime joints in accordance with manufacturer's instructions.
C. Perform preparation in accordance with manufacturer's instructions and ASTM C 1193.
D. Protect elements surrounding the work of this section from damage or disfigurement.

3.3 INSTALLATION
A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
B. Perform installation in accordance with ASTM C 1193.
C. Perform acoustical sealant application work in accordance with ASTM C 919.
D. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
E. Install bond breaker where joint backing is not used.
F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
G. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
H. Tool joints concave.

3.4 CLEANING
A. Clean adjacent soiled surfaces.

3.5 PROTECTION OF FINISHED WORK
A. Protect sealants until cured.

3.6 SCHEDULE
A. Exterior Joints for Which No Other Sealant Type is Indicated: Type S1; colors as selected.
B. Control and Expansion Joints in Paving: Type S5.
C. Exterior Wall Expansion Joints: Type S1.
D. Joints Between Exterior Metal Frames and Adjacent Work (except masonry): Type S1.
E. Interior Joints for Which No Other Sealant is Indicated: Type S2.
F. Control and Expansion Joints in Interior Concrete Slabs and Floors: Type S4.
G. In STC-Rated Walls, Between Metal Stud Track/Runner and Adjacent Construction: Type S3.
H. Joints Between Plumbing Fixtures and Walls and Floors, and Between Countertops and Walls: Type S2.

END OF SECTION

SECTION 08211

FLUSH WOOD DOORS

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Flush wood doors; flush configuration; fire rated and non-rated.

1.2 RELATED SECTIONS
C. Section 08710 - Door Hardware.
D. Section 08800 - Glazing.
E. Section 09900 - Paints and Coatings

1.3 REFERENCES
A. AWI (QSI) - Architectural Woodwork Quality Standards Illustrated; Architectural Woodwork Institute; 1997, Seventh Edition, Version 1.0.
B. NFPA 80 - Standard for Fire Doors and Fire Windows; National Fire Protection Association; 1999.
C. UL (BMD) - Building Materials Directory; Underwriters Laboratories Inc.; current edition.
D. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; 1998.

1.4 SUBMITTALS
A. See Section 01300 - Administrative Requirements for submittal procedures.
B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.
C. Shop Drawings: Illustrate door opening criteria, elevations, sizes, types, swings, undercuts required, special beveling, special blocking for hardware, factory machining criteria, factory finishing criteria, identify cutouts for glazing.

1.5 QUALITY ASSURANCE – NOT USED

1.6 REGULATORY REQUIREMENTS
A. Installed Fire Rated Door and Transom Panel Assembly: Conform to NFPA 80 for fire rated class as indicated.

1.7 DELIVERY, STORAGE, AND PROTECTION
A. Package, deliver and store doors in accordance with specified quality standard.
B. Accept doors on site in manufacturer's packaging. Inspect for damage.
C. Protect doors with resilient packaging sealed with heat shrunk plastic. Do not store in damp or wet areas; or in areas where sunlight might bleach veneer. Seal top and bottom edges with tinted sealer if stored more than one week. Break seal on site to permit ventilation.

1.8 PROJECT CONDITIONS
A. Coordinate the work with door opening construction, door frame and door hardware installation.

1.9 WARRANTY
A. See Section 01780 - Closeout Submittals for additional warranty requirements.
B. Provide warranty for the following term:
C. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials and telegraphing core construction.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Veneer Doors:
   1. Algoma Hardwoods, Algoma, WI.
   2. Eggers Industries, Two Rivers, WI.www.eggersindustries.com.
   3. Marshfield DoorSystems, Inc: www.marshfielddoors.com. (formerly Weyerhaeuser Door Division)
   4. Oshkosh Architectural Door Company, Oskosh, WI
   5. V.T. Industries, Holstein, IA
   6. Substitutions: See Section 01600 - Product Requirements.

2.2 DOORS AND PANELS

A. All Doors: See drawings for locations and additional requirements.
B. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.
   1. Provide solid core doors at all locations unless otherwise noted.
   2. Fire Rated Doors: Tested to ratings indicated on drawings in accordance with UL 10C or UBC Standard 7-2-97 ("positive pressure"); UL labeled.

2.3 DOOR AND PANEL CORES

A. Non-Rated Solid Core and 20 Minute Rated Doors: AWI Architectural Woodwork Quality Standards Illustrated, Section 1300, Type PC - Particleboard; Grade 1-LD-1.
B. Fire Rated Doors: Mineral core, Type FD, plies and faces as indicated above.

2.4 DOOR FACINGS

A. Wood Veneer Facing for Transparent Finish: Species as specified above, veneer grade as specified by quality standard, plain sliced, book veneer match, running assembly match; unless otherwise indicated.
   1. Vertical Edges: Same species as face veneer.
B. Interior Doors - Veneer: red oak species, veneer grade as specified by door quality standard, plain sliced, with slip matched grain, for transparent finish.
C. Facing Adhesive: Type I - waterproof.

2.5 ACCESSORIES

A. Glazing Stops: Wood, of same species as door facing, butted corners; prepared for countersink style tamper proof screws.

2.6 DOOR CONSTRUCTION

A. Fabricate doors in accordance with door quality standard specified.
B. Fabricate fire rated doors in accordance with UL requirements. Attach fire rating label to door.
C. Meeting Options for (Non-Rated) Double Doors: No Bevel
D. Provide solid blocks at lock edge for hardware reinforcement.
   1. Provide solid blocking for other through bolted hardware.
E. Vertical Exposed Edge of Stiles - Veneer Faces: Of same species as veneer facing.
F. Fit door edge trim to edge of stiles after applying veneer facing.
G. Bond edge banding to cores.
H. Transom Meeting Edge Options: Non-Rabbeted
I. Provide edge clearances in accordance with AWI Quality Standards Illustrated Section 1700.

2.7 FACTORY FINISHING

A. Factory finish doors in accordance with AWI Quality Standards Illustrated, Section 1500 to the following finish designations:
   1. Transparent Finish: TR-6, transparent catalyzed polyurethane, Custom quality, Semi-Gloss sheen.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Verify existing conditions before starting work.
B. Verify that opening sizes and tolerances are acceptable.
C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.2 INSTALLATION

A. Install doors in accordance with manufacturer's instructions and specified quality standard.
   1. Install fire-rated doors in accordance with NFPA 80, Warnock Hersey, and UL requirements.
B. Trim non-rated door width by cutting equally on both jamb edges.
C. Trim door height by cutting bottom edges to a maximum of 3/4 inch (19 mm).
D. Use machine tools to cut or drill for hardware.
E. Pilot drill screw and bolt holes.
F. Coordinate installation of doors with installation of frames and hardware.
G. Coordinate installation of glazing.

3.3 INSTALLATION TOLERANCES

A. Conform to specified quality standard for fit and clearance tolerances.
B. Conform to specified quality standard for maximum diagonal distortion.

3.4 ADJUSTING

A. Adjust doors for smooth and balanced door movement.
B. Adjust closers for full closure.

3.5 SCHEDULE - See Drawings

END OF SECTION

SECTION 08255

FRP FLUSH DOOR SYSTEMS

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Fiberglass reinforced polyester (FRP) flush doors with aluminum frames.

1.2 RELATED SECTIONS
A. Section 08710 - Door Hardware.

1.3 REFERENCES
A. AAMA 1503-98 - Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections.
B. ANSI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors and Hardware Reinforcings.
C. ASTM B 117 - Operating Salt Spray (Fog) Apparatus.
D. ASTM B 209 - Aluminum and Aluminum-Alloy Sheet and Plate.
E. ASTM B 221 - Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
F. ASTM D 256 - Determining the Pendulum Impact Resistance of Notched Specimens of Plastics.
G. ASTM D 543 - Evaluating the Resistance of Plastics to Chemical Reagents.
H. ASTM D 570 - Water Absorption of Plastics.
I. ASTM D 638 - Tensile Properties of Plastics.
J. ASTM D 790 - Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
K. ASTM D 1308 - Effect of Household Chemicals on Clear and Pigmented Organic Finishes
L. ASTM D 1621 - Compressive Properties of Rigid Cellular Plastics.
M. ASTM D 1623 - Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics.
N. ASTM D 2126 - Response of Rigid Cellular Plastics to Thermal and Humid Aging.
O. ASTM D 2583 - Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor.
P. ASTM D 5420 – Impact Resistance of Flat Rigid Plastic Specimens by Means of a Falling Weight.
Q. ASTM D 6670-01 - Standard Practice for Full-Scale Chamber Determination of Volatile Organic Emissions from Indoor Materials/Products.
R. ASTM E 84 - Surface Burning Characteristics of Building Materials.
S. ASTM E 90 - Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.
T. ASTM E 283 - Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
U. ASTM E 330 - Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
V. ASTM E 331 - Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.
W. ASTM F 476 - Security of Swinging Door Assemblies.
X. ASTM F 1642-04 – Standard Test Method for Glazing Systems Subject to Air blast Loading
Y. NWWDA T.M. 7-90 – Cycle Slam Test Method
Z. SFBC PA 201 - Impact Test Procedures.
AA. SFBC PA 203 - Criteria for Testing Products Subject to Cyclic Wind Pressure Loading.
BB. SFBC 3603.2 (b)(5) - Forced Entry Resistance Test.

1.4 PERFORMANCE REQUIREMENTS
A. General: Provide door assemblies that have been designed and fabricated to comply with specified performance requirements, as demonstrated by testing manufacturer's corresponding standard systems.
B. Air Infiltration: For a single door 3’-0” x 7’-0”, test specimen shall be tested in accordance with ASTM E 283 at pressure differential of 6.24 psf. Door shall not exceed 0.90 cfm per linear foot of perimeter crack.
C. Water Resistance: For a single door 3’-0” x 7’-0”, test specimen shall be tested in accordance with ASTM E 331 at pressure differential of 7.50 psf. Door shall not have water leakage.

D. Swinging Door Cycle Test, Doors and Frames, ANSI A250.4: Minimum of 25,000,000 cycles.
E. Cycle Slam Test Method, NWWDA T.M. 7-90: Minimum 5,000,000 Cycles.
F. Sound Transmission, Exterior Doors, STC, ASTM E 90: Minimum of 25.
G. Thermal Transmission, Exterior Doors, U-Value, AAMA 1503-98: Maximum of 0.29 BTU/hr x sf x degrees F. Minimum of 55 CRF value.
H. Surface Burning Characteristics, FRP Doors and Panels, ASTM E 84:
   1. Flame Spread: Maximum of 200, Class C.
   2. Smoke Developed: Maximum of 450, Class C.
I. Surface Burning Characteristics, Class A Option On Interior Faces of FRP Exterior Panels and Both Faces of FRP Interior Panels, ASTM E 84:
   1. Flame Spread: Maximum of 25.
   2. Smoke Developed: Maximum of 450.
J. Impact Strength, FRP Doors and Panels, Nominal Value, ASTM D 256: 15.0 foot-pounds per inch of notch.
K. Tensile Strength, FRP Doors and Panels, Nominal Value, ASTM D 638: 14,000 psi.
L. Flexural Strength, FRP Doors and Panels, Nominal Value, ASTM D 790: 21,000 psi.
M. Water Absorption, FRP Doors and Panels, Nominal Value, ASTM D 570: 0.20 percent after 24 hours.
N. Indentation Hardness, FRP Doors and Panels, Nominal Value, ASTM D 2583: 55.
O. Gardner Impact Strength, FRP Doors and Panels, Nominal Value, ASTM D 5420: 120 in-lb.
P. Abrasion Resistance, Face Sheet, Taber Abrasion Test, 25 Cycles at 1,000 Gram Weight with CS-17 Wheel: Maximum of 0.029 average weight loss percentage.
Q. Stain Resistance, ASTM D 1308: Face sheet unaffected after exposure to red cabbage, tea, and tomato acid. Stain removed easily with mild abrasive or FRP cleaner when exposed to crayon and crankcase oil.
R. Chemical Resistance, ASTM D 543. Excellent rating.
   1. Acetic acid, Concentrated.
   2. Ammonium Hydroxide, Concentrated.
   3. Citric Acid, 10%.
   4. Formaldehyde.
   5. Hydrochloric Acid, 10%
   6. Sodium hypochlorite, 4 to 6 percent solution.
S. Compressive Strength, Foam Core, Nominal Value, ASTM D 1621: 79.9 psi.
T. Compressive Modulus, Foam Core, Nominal Value, ASTM D 1621: 370 psi
U. Tensile Adhesion, Foam Core, Nominal Value, ASTM D 1623: 45.3 psi
V. Thermal and Humid Aging, Foam Core, Nominal Value, 158 Degrees F and 100 Percent Humidity for 14 Days, ASTM D 2126: Minus 5.14 percent volume change.

1.5 SUBMITTALS

A. Product Data: Submit manufacturer's product data, including description of materials, components, fabrication, finishes, and installation.
B. Shop Drawings: Submit manufacturer's shop drawings, including elevations, sections, and details, indicating dimensions, tolerances, materials, fabrication, doors, panels, framing, hardware schedule, and finish.
C. Samples:
   1. Door: Submit manufacturer's sample of door showing face sheets, core, framing, and finish.
   2. Color: Submit manufacturer's samples of standard colors of doors and frames.
D. Test Reports: Submit certified test reports from qualified independent testing agency indicating doors comply with specified performance requirements.
E. Manufacturer's Project References: Submit list of successfully completed projects including project name and location, name of architect, and type and quantity of doors manufactured.
F. Maintenance Manual: Submit manufacturer's maintenance and cleaning instructions for doors, including maintenance and operating instructions for hardware.
G. Warranty: Submit manufacturer's standard warranty.

1.6 QUALITY ASSURANCE

A. Manufacturer's Qualifications:
   1. Continuously engaged in manufacturing of doors of similar type to that specified, with a minimum of 25 years successful experience.
   2. Door and frame components from same manufacturer.
   3. Evidence of a compliant documented quality management system.

1.7 DELIVERY, STORAGE, AND PROTECTION

A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying opening door mark and manufacturer.
B. Storage: Store materials in clean, dry area indoors in accordance with manufacturer's instructions.
C. Handling: Protect materials and finish from damage during handling and installation.

1.8 WARRANTY

A. Warrant doors, frames, and factory hardware against failure in materials and workmanship, including excessive deflection, faulty operation, defects in hardware installation, and deterioration of finish or construction in excess of normal weathering.
B. Warranty Period: Ten years starting on date of shipment. In addition, a limited lifetime (while the door is in its specified application in its original installation) warranty covering: failure of corner joinery, core deterioration, delamination or bubbling of door skin.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Special-Lite, Inc., www.special-lite.com.
B. Simon Door Company, LLC; www.simondoor.com
C. Substitutions: See Section 01600 – Product Requirements

2.2 FRP FLUSH DOORS

A. Model: SL-17 Flush Doors with SpecLite3 fiberglass reinforced polyester (FRP) face sheets.
B. Door Opening Size: As indicated on the Drawings.
C. Construction:
   1. Door Thickness: 1-3/4 inches.
   2. Stiles and Rails: Aluminum extrusions made from prime-equivalent billet that is produced from 100% reprocessed 6063-T5 alloy recovered from industrial processes, minimum of 2-5/16-inch depth.
   3. Corners: Mitered.
   4. Provide joinery of 3/8-inch diameter full-width tie rods through extruded splines top and bottom integral to standard tubular shaped stiles and rails reinforced to accept hardware as specified.
   5. Securing Internal Door Extrusions: 3/16-inch angle blocks and locking hex nuts for joinery. Welds, glue, or other methods are not acceptable.
   6. Furnish extruded stiles and rails with integral reglets to accept face sheets. Lock face sheets into place to permit flush appearance.
   7. Rail caps or other face sheet capture methods are not acceptable.
   8. Extrude top and bottom rail legs for interlocking continuous weather bar.
   9. Meeting Stiles: Pile brush weatherseals. Extrude meeting stile to include integral pocket to accept pile brush weatherseals.
   10. Bottom of Door: Install bottom weather bar with nylon brush weatherstripping into extruded interlocking edge of bottom rail.
   11. Glue: Use of glue to bond sheet to core or extrusions is not acceptable.

D. Face Sheet:
   1. Material: FRP, 0.120-inch thickness, finish color throughout.
   2. Protective coating: Abuse-resistant engineered surface. Provide FRP with protective coating, or equal.
   3. Texture: To chosen by Architect from manufacturer's full texture line.
   4. Color: To chosen by Architect from manufacturer's full color line.
   5. Adhesion: The use of glue to bond face sheet to foam core is prohibited.
E. Core:
   1. Material: Poured-in-place polyurethane foam.
   2. Density: Minimum of 5 pounds per cubic foot.
   3. R-Value: Minimum of 9.
F. Hardware:
   1. Premachine doors in accordance with templates from specified hardware manufacturers and hardware schedule.
   2. Factory install hardware.

2.3 MATERIALS

A. Aluminum Members:
   1. Aluminum extrusions made from prime-equivalent billet that is produced from 100% reprocessed 6063-T5 alloy recovered from industrial processes: ASTM B 221.
   2. Sheet and Plate: ASTM B 209.
   3. Alloy and Temper: As required by manufacturer for strength, corrosion resistance, application of required finish, and control of color.
B. Components: Door and frame components from same manufacturer.
C. Fasteners:
   1. Material: Aluminum, 18-8 stainless steel, or other noncorrosive metal.
   2. Compatibility: Compatible with items to be fastened.
   3. Exposed Fasteners: Screws with finish matching items to be fastened.

2.4 FABRICATION

A. Sizes and Profiles: Required sizes for door and frame units, and profile requirements shall be as indicated on the Drawings.
B. Coordination of Fabrication: Field measure before fabrication and show recorded measurements on shop drawings.
C. Assembly:
   1. Complete cutting, fitting, forming, drilling, and grinding of metal before assembly.
   2. Remove burrs from cut edges.
D. Welding: Welding of doors or frames is not acceptable.
E. Fit:
   1. Maintain continuity of line and accurate relation of planes and angles.
   2. Secure attachments and support at mechanical joints with hairline fit at contacting members.

2.5 ALUMINUM DOOR FRAMING SYSTEMS

A. Tubular Framing:
   1. Size and Type: As indicated on the Drawings.
   2. Materials: Aluminum extrusions made from prime-equivalent billet that is produced from 100% reprocessed 6063-T5 alloy recovered from industrial processes, 1/8-inch minimum wall thickness.
   3. Applied Door Stops: 0.625-inch high, with screws and weatherstripping. Door stop shall incorporate pressure gasketing for weathering seal. Counterpunch fastener holes in door stop to preserve full metal thickness under fastener head.
   4. Frame Members: Box type with 4 enclosed sides. Open-back framing is not acceptable.
   5. Caulking: Caulk joints before assembling frame members.

6. Joints:
   a. Secure joints with fasteners.
   b. Provide hairline butt joint appearance.
7. Field Fabrication: Field fabrication of framing using stick material is not acceptable.
8. Anchors:
   a. Anchors appropriate for wall conditions to anchor framing to wall materials.
   b. Door Jamb and Header Mounting Holes: Maximum of 24-inch centers.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine areas to receive doors. Notify Architect of conditions that would adversely affect installation or subsequent use. Do not proceed with installation until unsatisfactory conditions are corrected.

3.2 PREPERATION

A. Ensure openings to receive frames are plumb, level, square, and in tolerance.

3.3 INSTALLATION

A. Install doors in accordance with manufacturer's instructions.
B. Install doors plumb, level, square, true to line, and without warp or rack.
C. Anchor frames securely in place.
D. Separate aluminum from other metal surfaces with bituminous coatings or other means approved by Architect.
E. Install exterior doors to be weathertight in closed position.
F. Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Architect.
G. Remove and replace damaged components that cannot be successfully repaired as determined by Architect.

3.4 ADJUSTING

A. Adjust doors, hinges, and locksets for smooth operation without binding.

3.5 CLEANING AND PROTECTION

A. Clean doors promptly after installation in accordance with manufacturer's instructions.
B. Do not use harsh cleaning materials or methods that would damage finish.
C. Protect installed doors to ensure that, except for normal weathering, doors will be without damage or deterioration at time of substantial completion.

END OF SECTION

SECTION 08410

METAL-FRAMED STOREFRONTS

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Aluminum-framed storefront, with vision glass.
B. Aluminum doors and frames.
C. Perimeter sealant.

1.2 RELATED SECTIONS
A. Section 07900 - Joint Sealers: Perimeter sealant and back-up materials.
B. Section 08710 - Door Hardware: Hardware items other than specified in this section.
C. Section 08800 - Glazing: Glass and glazing accessories.

1.3 REFERENCES
A. AAMA CW-10 - Care and Handling of Architectural Aluminum From Shop to Site; American Architectural Manufacturers Association; 1997.
B. ASTM E 283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 1991 (Reapproved 1999).
C. ASTM E 331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference; 2000.
D. ASTM E 1105 - Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference; 2000.

1.4 PERFORMANCE REQUIREMENTS
A. Design and size components to withstand the following load requirements without damage or permanent set, when tested in accordance with ASTM E 330, using loads 1.5 times the design wind loads and 10 second duration of maximum load.
   1. Member Deflection: Limit member deflection to flexure limit of glass in any direction, with full recovery of glazing materials.
B. System Assembly: Accommodate without damage to components or deterioration of seals, movement within system, movement between system and peripheral construction, dynamic loading and release of loads, deflection of structural support framing.
C. Movement: Accommodate movement between storefront and perimeter framing and deflection of lintel, without damage to components or deterioration of seals.
D. Air Infiltration: Limit air infiltration through assembly to 0.06 cu ft/min/sq ft of wall area, measured at a reference differential pressure across assembly of 1.57 psf as measured in accordance with ASTM E 283.
E. Vapor Seal: Limit vapor seal with interior atmospheric pressure of 1 inch (25 mm) sp, 72 degrees F (22 degrees C), 40 Percent RH without seal failure.
F. Water Leakage: None, when measured in accordance with ASTM E 331 with a test pressure difference of 2.86 lbf/sq ft.
G. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
H. Expansion/Contraction: Provide for expansion and contraction within system components caused by cycling temperature range of 170 degrees F over a 12 hour period without causing detrimental effect to system components, anchorages, and other building elements.

1.5 SUBMITTALS
A. See Section 01300 - Administrative Requirements, for submittal procedures.
B. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related Work, expansion and contraction joint location and details, and field welding required.

1.6 QUALITY ASSURANCE - NOT USED

1.7 DELIVERY, STORAGE, AND PROTECTION
A. Handle products of this section in accordance with AAMA CW-10.
B. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings which bond to aluminum when exposed to sunlight or weather.

1.8 ENVIRONMENTAL REQUIREMENTS
A. Do not install sealants when ambient temperature is less than 40 degrees F. Maintain this minimum temperature during and 48 hours after installation.

1.9 WARRANTY
A. See Section 01780 - Closeout Submittals, for additional warranty requirements.
B. Correct defective Work within a five-year period after Date of Substantial Completion.
C. Provide five-year manufacturer warranty against failure of glass seal on insulating glass units, including interpane dusting or misting. Include provision for replacement of failed units.

PART 2 – PRODUCTS

2.1 MANUFACTURERS
A. Basis of Design: Kawneer Company, Inc.; Product TriFab451UT (Thermal) www.kawneer.com.
B. Substitutions: See Section 01600 - Product Requirements.

2.2 COMPONENTS
A. Aluminum-Framed Storefront: Factory fabricated, factory finished aluminum framing members with infill, and related flashings, anchorage and attachment devices.
   1. Finish: Class I color anodized.
B. Aluminum Framing Members: Tubular aluminum sections, thermally broken with interior section insulated from exterior, drainage holes and internal weep drainage system.
   1. Framing members for interior applications need not be thermally broken.
   2. Glazing stops: Flush.
   3. Cross-Section: As indicated on drawings.
C. Doors: Glazed aluminum.
   1. Thickness: 1-3/4 inches.
   2. Top Rail: 5 inches wide.
   3. Vertical Stiles: 5 inches wide.
   4. Bottom Rail: 6 ½” inches wide.
   5. Glazing Stops: Square.
   6. Finish: Same as storefront.

2.3 GLASS AND GLAZING MATERIALS
A. Glass: Specified in Section 08800 and on drawings.
B. Glazing Materials: Dense EPDM wedge type gasket exterior and interior, to suit applications and achieve weather, moisture and air infiltration requirements.

2.4 HARDWARE
A. Weatherstripping: Wool pile, continuous and replaceable; provide on all doors.
B. Sill Sweep Strips: Resilient seal type, retracting, of neoprene; provide on all doors.
C. Threshold: Refer to Spec Section 08710.
D. Hinges: Refer to Spec Section 08710.
E. Exit Devices: Refer to Spec Section 08710 Door Hardware.
F. Closers: Refer to Spec Section 08710 Door Hardware.
G. Locks: Refer to Spec Section 08710 Door Hardware.

2.5 SEALANT MATERIALS

A. Sealant and Backing Materials – refer to Section 07900.

2.6 FABRICATION

A. Fabricate components with minimum clearances and shim spacing around perimeter of assembly, yet enabling installation and dynamic movement of perimeter seal.
B. Accurately fit and secure joints and corners. Make joints flush, hairline, and weatherproof.
C. Prepare components to receive anchor devices. Fabricate anchors.
D. Arrange fasteners and attachments to conceal from view.
E. Prepare components with internal reinforcement for door hardware.
F. Reinforce framing members for imposed loads.

2.7 FINISHES

A. Exposed Aluminum Surfaces: AA M10 C21, A41, anodized to Class I; Clear anodized color.
B. Finish of Exposed Aluminum shall be compliant with the performance standards set forth in AAMA Specification 2604, High Performance Organic Coatings on Aluminum.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Section 01700: Verification of existing conditions before starting work.
B. Verify dimensions, tolerances, and method of attachment with other work.
C. Verify wall openings and adjoining air and vapor seal materials are ready to receive work of this section.

3.2 INSTALLATION

A. Install wall assembly in accordance with manufacturer's instructions.
B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.
C. Provide alignment attachments and shims to permanently fasten system to building structure.
D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
E. Provide thermal isolation where components penetrate or disrupt building insulation.
F. Install flashings. Turn up ends and edges; seal to adjacent work to form water tight end dam.
G. Coordinate attachment and seal of perimeter air and vapor barrier materials.
H. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
I. Install operating sash to sash manufacturer's installation requirements.
J. Install flashings, full opening width, consisting of one piece. If width of opening requires additional pieces, splice per manufacturer's instructions.
K. Set thresholds in bed of mastic and secure.
L. Install hardware using physical hardware and templates provided.
M. Install glass in accordance with Section 08800, utilizing glazing method required to achieve performance criteria.
N. Install Perimeter Sealant according to the requirements of Section 07900.

3.3 ERECTION TOLERANCES

A. Section 01400: Tolerances.
B. Maximum Variation from Plumb: 1/16 inch every 3 feet non-cumulative or 1/16 inch per 10 feet, whichever is less
C. Maximum Misalignment of Two Adjoining Members Abutting in Plane: 1/32 inch.

3.4 ADJUSTING

A. Adjust operating hardware for smooth operation.

3.5 CLEANING

A. Remove protective material from pre-finished aluminum surfaces.
B. Wash down surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths. Take care to remove dirt from corners. Wipe surfaces clean.
C. Remove excess sealant employing a method acceptable to sealant manufacturer and finish supplier.

3.6 PROTECTION OF FINISHED WORK

A. Protect finished work from damage.

END OF SECTION

SECTION 08710

DOOR HARDWARE

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Lock cylinders for doors for which hardware is specified in other sections.
B. Hardware for all doors.

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

1.3 SUMMARY
A. Section includes:
   1. Mechanical and electrified door hardware for:
      a. Swinging doors.
   2. Electronic access control system components, including:
      a. Electronic access control devices.
   3. Field verification, preparation and modification of existing doors and frames to receive new door hardware.
   4. The intent of the hardware specification is to specify the hardware for interior and exterior doors, and to establish a type, continuity, and standard of quality. However, it is the contractor's responsibility to thoroughly review existing conditions, schedules, specifications, drawings, and other Contract Documents to verify the suitability of the hardware specified.

B. Exclusions: Unless specifically listed in hardware sets, hardware is not specified in this section for:
   1. Windows
   2. Cabinets (casework), including locks in cabinets
   3. Signage
   4. Toilet accessories
   5. Overhead doors
   6. Shower doors
   7. Access doors and panels
   8. Conduit, junction boxes & wiring

C. Related Sections:
   1. Division 01 Section "Alternates" for alternates affecting this section.
   2. Division 07 Section "Joint Sealants" for sealant requirements applicable to threshold installation specified in this section.
   3. Division 08 Section "Openings" for doors and frames
   4. Division 08 Section "Entrances and Storefront" for hardware requirements applicable to installation of hardware to entrance doors
   5. Division 08 Section "Fire Rated Glass and Framing Systems" for requirements for aluminum opening fire rated hardware
   6. Division 09 sections for touchup, finishing or refinishing of existing openings modified by this section.

1.4 REFERENCES
A. UL - Underwriters Laboratories
   1. UL 10B - Fire Test of Door Assemblies
   2. UL 10C - Positive Pressure Test of Fire Door Assemblies
   3. UL 1784 - Air Leakage Tests of Door Assemblies
   4. UL 294 - Standard for Access Control System Units
   5. UL 305 - Panic Hardware

B. DHI - Door and Hardware Institute
   1. Sequence and Format for the Hardware Schedule
   2. Recommended Locations for Builders Hardware
   3. Key Systems and Nomenclature

C. ANSI - American National Standards Institute
   1. ANSI/BHMA A156.1 - A156.29, and ANSI/BHMA A156.31 - Standards for Hardware and Specialties
   2. ICC/ANSI A117.1 - 2017 – Specifications for making buildings and facilities usable by physically handicapped people
   3. ANSI/BHMA A156.28 “Recommended Practices for Keying Systems”
D. NFPA – National Fire Protection Association
   1. NFPA 70 – National Electrical Code
   2. NFPA 80 – Fire Doors and Windows
   3. NFPA 105 – Smoke and Draft Control Door Assemblies
   4. NFPA 252 – Fire Test of Door Assemblies
E. WHI – Warnock Hersey Incorporated
F. SDI – Steel Door Institute
G. WI – Woodwork Institute
H. AWI – Architectural Woodwork Institute
I. NAAMM – National Association of Architectural Metal Manufacturers
J. Local applicable codes

1.5 SUBMITTALS

A. General:
   1. Submit in accordance with Conditions of Contract and Division 01 requirements.
   2. Highlight, encircle, or otherwise specifically identify on submittals deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.
   3. Prior to forwarding submittal, comply with procedures for verifying existing door and frame compatibility for new hardware, as specified in PART 3, “EXAMINATION” article, herein.
B. Action Submittals:
   1. Product Data: Technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
   2. Riser and Wiring Diagrams: After final approval of hardware schedule, submit details of electrified door hardware, indicating:
      a. Wiring Diagrams: For power, signal, and control wiring and including:
         1) Details of interface of electrified door hardware and building safety and security systems.
         2) Schematic diagram of systems that interface with electrified door hardware.
         3) Point-to-point wiring.
         4) Risers.
   3. Samples for Verification: If requested by Architect, submit production sample or sample installations of each type of exposed hardware unit in finish indicated, and tagged with full description for coordination with schedule.
      a. Samples will be returned to supplier. Units that are acceptable to Architect may, after final check of operations, be incorporated into Work, within limitations of key coordination requirements.
   4. Door Hardware Schedule: Submit schedule with hardware sets in vertical format. Indicate complete designations of each item required for each door or opening, include:
      a. Door Index; include door number, heading number, and Architects hardware set number.
      b. Quantity, type, function, style, size, and finish of each hardware item.
      c. Name and manufacturer of each item.
      d. Fastenings and other pertinent information.
      e. Location of each hardware set cross-referenced to indications on Drawings.
      f. Explanation of all abbreviations, symbols, and codes contained in schedule.
      g. Mounting locations for hardware.
      h. Door and frame sizes and materials.

i. Operational Description of openings with any electrified hardware (locks, exits, electromagnetic locks, electric strikes, automatic operators, door position switches, magnetic holders or closer/holder units, and access control components). Operational description should include operational descriptions for: egress, ingress (access), and fire/smoke alarm connections.
   1) Submittal Sequence: Submit door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate fabrication of other work that is critical in Project construction schedule.

5. Key Schedule:
   a. After Keying Conference, provide keying schedule listing levels of keying as well as explanation of key system's function, key symbols used and door numbers controlled.
   b. Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.
   c. Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.
   d. Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion.
      1) Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.
   e. Prepare key schedule by or under supervision of supplier, detailing Owner’s final keying instructions for locks.
6. Templates: After final approval of hardware schedule, provide templates for doors, frames and other work specified for door hardware installation.

C. Informational Submittals:
1. Qualification Data: For Supplier, Installer and Architectural Hardware Consultant.
2. Certificates of Compliance:
   a. UL listings for fire-rated hardware and installation instructions if requested by Architect or Authority Having Jurisdiction.
   b. Installer Training Meeting Certification: Letter of compliance, signed by Contractor, attesting to completion of installer training meeting specified in “QUALITY ASSURANCE” article, herein.
   c. Electrified Hardware Coordination Conference Certification: Letter of compliance, signed by Contractor, attesting to completion of electrified hardware coordination conference, specified in “QUALITY ASSURANCE” article, herein.
3. Warranty: Special warranty specified in this Section.

D. Closeout Submittals:
1. Operations and Maintenance Data: Provide in accordance with Division 01 and include:
   a. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
   b. Catalog pages for each product.
   c. Factory order acknowledgement numbers (for warranty and service)
   d. Parts list for each product.
   e. Final approved hardware schedule, edited to reflect conditions as-installed.
   f. Final keying schedule
   g. Copies of floor plans with keying nomenclature
   h. As-installed wiring diagrams for each opening connected to power, both low voltage and 110 volts.
   i. Copy of warranties including appropriate reference numbers for manufacturers to identify project.

1.6 QUALITY ASSURANCE

A. If discrepancy between drawings and scheduled material in this section, bid the more expensive of the two choices, note the discrepancy in the submittal and request direction from Architect for resolution.

B. Supplier Qualifications and Responsibilities: Recognized architectural hardware supplier with record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that provides certified Architectural Hardware Consultant (AHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.
   1. Warehousing Facilities: In Project's vicinity.
   2. Scheduling Responsibility: Preparation of door hardware and keying schedules.
   3. Coordination Responsibility: Assist in coordinating installation of electronic security hardware with Architect and electrical engineers and provide installation and technical data to Architect and other related subcontractors.

C. Architectural Hardware Consultant Qualifications: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:
   1. For door hardware, DHI-certified, Architectural Hardware Consultant (AHC).
   2. Can provide installation and technical data to Architect and other related subcontractors.
   3. Can inspect and verify components are in working order upon completion of installation.
   4. Capable of coordinating installation of electrified hardware with Architect and electrical engineers.

D. Single Source Responsibility: Obtain each type of door hardware from single manufacturer.
   1. Bid and submit manufacturer’s updated/improved item if scheduled item is discontinued.

E. Fire-Rated Door Openings: Provide door hardware for fire-rated openings that complies with NFPA 80 and requirements of authorities having jurisdiction. Provide only items of door hardware that are listed products tested by Underwriters Laboratories, Intertek Testing Services, or other testing and inspecting organizations acceptable to authorities having jurisdiction for use on types and sizes of doors indicated, based on testing at positive pressure and according to NFPA 252 or UL 10C and in compliance with requirements of fire-rated door and door frame labels.

F. Electrified Door Hardware: Listed and labeled as defined in NFPA 70, Article 100, by testing agency acceptable to authorities having jurisdiction.

G. Accessibility Requirements: For door hardware on doors in an accessible route, comply with governing accessibility regulations cited in “REFERENCES” article, herein.

H. Keying Conference
   1. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:
      a. Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
      b. Preliminary key system schematic diagram.
      c. Requirements for key control system.
      d. Requirements for access control.
      e. Address for delivery of keys.

I. Pre-installation Conference
   1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
   2. Inspect and discuss preparatory work performed by other trades.
   3. Inspect and discuss electrical roughing-in for electrified door hardware.
   4. Review sequence of operation for each type of electrified door hardware.
   5. Review required testing, inspecting, and certifying procedures.

J. Coordination Conferences:
   1. Installation Coordination Conference: Prior to hardware installation, schedule and hold meeting to review questions or concerns related to proper installation and adjustment of door hardware.

2. Electrified Hardware Coordination Conference: Prior to ordering electrified hardware, schedule and hold meeting to coordinate door hardware with security, electrical, doors and frames, and other related suppliers.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site.
B. Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.
   1. Deliver each article of hardware in manufacturer's original packaging.
C. Project Conditions:
   1. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.
   2. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.
D. Protection and Damage:
   1. Promptly replace products damaged during shipping.
   2. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work.
   3. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.
E. Deliver keys and permanent cores to Owner.

1.8 COORDINATION

A. Existing Openings: Where existing doors, frames and/or hardware are to remain, field verify existing functions, conditions and preparations and coordinate to suit opening conditions and to provide proper door operation. If conflict between the specified/scheduled hardware and existing conditions, submit request for direction from Architect. Include date of jobsite visit in the submittal.
B. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete.
C. Installation Templates: Distribute for doors, frames, and other work specified to be factory or shop prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
D. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.
E. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.
F. Existing Openings: Where existing doors, frames and/or hardware are to remain, field verify existing functions, conditions and preparations and coordinate to suit opening conditions and to provide proper door operation.

1.9 WARRANTY

A. Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.
   1. Closers:
      a. Mechanical: 30 years
   2. Exit Devices:
      a. Mechanical: 3 years.
   3. Locksets:
      a. Mechanical: 3 years.
      b. Electrified: 1 year.
   4. Continuous Hinges: Lifetime warranty.
   5. Key Blanks: Lifetime

6. Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.

B. See Section 01780 - Closeout Submittals, for additional warranty requirements.

1.10 MAINTENANCE

A. Maintenance Tools: Furnish complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. The Owner requires use of certain products for their unique characteristics and project suitability to ensure continuity of existing and future performance and maintenance standards. After investigating available product offerings, the Awarding Authority has elected to prepare proprietary specifications. These products are specified with the notation: “No Substitute.”
   1. Where “No Substitute” is noted, substitution requests for other products will not be considered.
1. Approval of manufacturers and/or products other than those listed as “Scheduled Manufacturer” or “Basis of Design” shall be in accordance per spec section 01600 - Product Requirements.

B. In the individual article for the product category items, shall be in accordance with the QUALITY ASSURANCE article, herein.

C. Approval of products is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer’s product.

D. Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect's approval in accordance with substitution procedure in spec section

2.2 MATERIALS

A. Fasteners
   1. Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation.
   2. Furnish screws for installation with each hardware item. Finish exposed (exposed under any condition) screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.
   3. Provide concealed fasteners for hardware units exposed when door is closed except when no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work unless thru-bolts are required to fasten hardware securely. Review door specification and advise Architect if thru-bolts are required.
   4. Install hardware with fasteners provided by hardware manufacturer.

B. Modification and Preparation of Existing Doors: Where existing door hardware is indicated to be removed and reinstalled.
   1. Provide necessary fillers, Dutchmen, reinforcements, and fasteners, compatible with existing materials, as required for mounting new opening hardware and to cover existing door and frame preparations.
   2. Use materials which match materials of adjacent modified areas.
   3. When modifying existing fire-rated openings, provide materials permitted by NFPA 80 as required to maintain fire-rating.

C. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.
   1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.

D. Cable and Connectors: Hardwired Electronic Access Control Lockset and Exit Device Trim:
   1. Data: 24AWG, 4 conductor shielded, Belden 9843, 9841 or comparable.
   2. DC Power: 18 AWG, 2 conductor, Belden 8760 or comparable.
   3. Provide type of data and DC power cabling required by access control device manufacturer for this installation.
   4. Where scheduled in the hardware sets, provide each item of electrified hardware and wire harnesses with sufficient number and wire gauge with standardized Molex plug connectors to accommodate electric function of specified hardware. Provide Molex connectors that plug directly into connectors from harnesses, electric locking and power transfer devices. Provide through-door wire harness for each electrified locking device installed in a door and wire harness for each electrified hinge, electrified continuous hinge, electrified pivot, and electric power transfer for connection to power supplies.

2.3 HINGES

A. Manufacturers and Products:
   1. Scheduled Manufacturer and Product: Ives 5BB series. Basis of Design.
B. Requirements:
   1. Provide hinges conforming to ANSI/BHMA A156.1.
   2. 1-3/4 inch (44 mm) thick doors, up to and including 36 inches (914 mm) wide:
      a. Exterior: Standard weight, bronze or stainless steel, 4-1/2 inches (114 mm) high
      b. Interior: Standard weight, steel, 4-1/2 inches (114 mm) high
      c. Interior: Heavy weight steel, all doors with closers or overhead stops
   3. 1-3/4 inch (44 mm) thick doors 36 inches (914 mm) wide and over:
      a. Exterior: Heavy weight, bronze/stainless steel, 5 inches (127 mm) high
      b. Interior: Heavy weight, steel, 5 inches (127 mm) high
   4. 2 inches or thicker doors:
      a. Exterior: Heavy weight, bronze or stainless steel, 5 inches (127 mm) high
      b. Interior: Heavy weight, steel, 5 inches (127 mm) high
   5. Provide three hinges per door leaf for doors 90 inches (2286 mm) or less in height, and one additional hinge for each 30 inches (762 mm) of additional door height.
   6. Where new hinges are specified for existing doors or existing frames, provide new hinges of identical size to hinge preparation present in existing door or existing frame.
   7. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
      a. Steel Hinges: Steel pins
      b. Non-Ferrous Hinges: Stainless steel pins
      c. Out-Swinging Exterior Doors: Non-removable pins
      d. Out-Swinging Interior Lockable Doors: Non-removable pins
      e. Interior Non-lockable Doors: Non-rising pins
   8. Width of hinges: 4-1/2 inches (114 mm) at 1-3/4 inch (44 mm) thick doors, and 5 inches (127 mm) at 2 inches (51 mm) or thicker doors. Adjust hinge width as required for door, frame, trim and wall conditions to allow proper degree of opening.

2.4 ELECTRIC POWER TRANSFER

A. Manufacturers:
   1. Scheduled Manufacturer: Von Duprin EPT-10. Basis of Design.
B. Requirements:
   1. Provide power transfer with electrified options as scheduled in the hardware sets. Provide with number and gage of wires sufficient to accommodate electric function of specified hardware.
   2. Locate electric power transfer per manufacturer’s template and UL requirements, unless interference with operation of door or other hardware items.

2.5 FLUSH BOLTS

A. Manufacturers:
   1. Scheduled Manufacturer: Ives. Basis of Design.

B. Requirements:
   1. Provide automatic, constant latching, and manual flush bolts with forged bronze or stainless-steel face plates, extruded brass levers, and with wrought brass guides and strikes. Provide 12 inch (305 mm) steel or brass rods at doors up to 90 inches (2286 mm) in height. For doors over 90 inches (2286 mm) in height increase top rods by 6 inches (152 mm) for each additional 6 inches (152 mm) of door height. Provide dust-proof strikes at each bottom flush bolt.

2.6 MORTISE LOCKS

A. Manufacturers and Products:
   1. Scheduled Manufacturer and Product: Schlage L9000 series. No substitute.

B. Requirements:
   1. Provide mortise locks conforming to ANSI/BHMA A156.13 Series 1000, Grade 1, and UL Listed for 3 hour fire doors.
   2. Indicators: Where specified, provide indicator window measuring a minimum 2 inch x 1/2 inch with 180 degree visibility. Provide messages color-coded with full text and/or symbols, as scheduled, for easy visibility.
      a. Inside Security Indicator: Provide indicator above cylinder or thumbturn for visibility during lockdown that identifies the outside trim as locked/unlocked status of the door.
      b. Outside Occupancy Indicator: Provide indicator above cylinder or emergency release for visibility while operating the lock that identifies an occupied/unoccupied status of the lock or latch.
   3. Provide locks manufactured from heavy gauge steel, containing components of steel with a zinc dichromate plating for corrosion resistance.
   4. Provide lock case that is multi-function and field reversible for handing without opening case. Cylinders: Refer to “KEYING” article, herein.
   5. Provide locks with standard 2-3/4 inches (70 mm) backset with full 3/4 inch (19 mm) throw stainless steel mechanical anti-friction latchbolt. Provide deadbolt with full 1 inch (25 mm) throw, constructed of stainless steel.
   6. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
   7. Provide electrified options as scheduled in the hardware sets. Where scheduled, provide switches and sensors integrated into the locks and latches.
   8. Provide motor based electrified locksets with electrified options as scheduled in the hardware sets and comply with the following requirements:
      a. Universal input voltage – single chassis accepts 12 or 24V DC to allow for changes in the field without changing lock chassis.
      b. Fail Safe/Fail Secure – changing mode between electrically locked (fail safe) and electrically unlocked (fail secure) is field selectable without opening the lock case
      c. Low maximum current draw – maximum 0.4 amps to allow for multiple locks on a single power supply.
      d. Low holding current – maximum 0.01 amps to produce minimal heat, eliminate “hot levers” in electrically locked applications, and to provide reliable operation in wood doors that provide minimal ventilation and air flow.
      e. Request to Exit Switch (RX) –
         1) Modular Design – provide electrified locks capable of using, adding, or changing a modular RX switch without opening the lock case.
         2) Monitoring – where scheduled, provide a request to exit (RX) switch that detects rotation of the inside lever.
      f. Connections – provide quick-connect Molex system standard.
   9. Lever Trim: Solid brass, bronze, or stainless steel, cast or forged in design specified, with wrought roses and external lever spring cages. Provide thru-bolted levers with 2-piece spindles.

a. Lever Design: Schlage 06N.
b. Tactile Warning (Knurling): Where required by authority having jurisdiction. Provide on levers on exterior (secure side) of doors serving rooms considered to be hazardous.

2.7 EXIT DEVICES

A. Manufacturers and Products:
1. Scheduled Manufacturer and Product: Von Duprin 99/33A series. No substitute.

B. Requirements:
1. Provide exit devices tested to ANSI/BHMA A156.3 Grade 1 and UL listed for Panic Exit or Fire Exit Hardware.
2. Cylinders: Refer to “KEYING” article, herein.
3. Provide touchpad type exit devices, fabricated of brass, bronze, stainless steel, or aluminum, plated to standard architectural finishes to match balance of door hardware.
4. Touchpad must extend a minimum of one half of door width. No plastic inserts are allowed in touchpads.
5. Provide exit devices with deadlatching feature for security and for future addition of alarm kits and/or other electrified requirements.
6. Provide flush end caps for exit devices.
7. Provide exit devices with manufacturer’s approved strikes.
8. Provide exit devices cut to door width and height. Install exit devices at height recommended by exit device manufacturer, allowable by governing building codes, and approved by Architect.
9. Mount mechanism case flush on face of doors, or provide spacers to fill gaps behind devices. Where glass trim or molding projects off face of door, provide glass bead kits.
10. Provide cylindrical or hex-key dogging as specified at non fire-rated openings.
11. Removable Mullions: 2 inches (51 mm) x 3 inches (76 mm) steel tube. Where scheduled as keyed removable mullion, provide type that can be removed by use of a keyed cylinder, which is self-locking when re-installed.
12. Provide factory drilled weep holes for exit devices used in full exterior application, highly corrosive areas, and where noted in hardware sets.
13. Provide electrified options as scheduled.
14. Concealed Vertical Cable Exit Devices: provide cable-actuated concealed vertical latch system in two-point for non-rated or fire rated wood doors up to a 90 minute rating and less bottom latch (LBL) configuration for non-rated or fire rated wood doors up to 20 minute rating. Vertical rods not permitted.
    a. Cable: Stainless steel with abrasive resistant coating. Conduit and core wire ends snap into latch and center slides without use of tools.
    b. Wood Door Prep: Maximum 1 inch x 1.1875 inch x 3.875 inches top latch pocket and 1 inch x 1.1875 inch x 5 inches bottom latch pocket which does not require the use of a metal wrap or edge for non-rated or fire rated wood doors up to a 45 minute rating.
    c. Latchbolts and Blocking Cams: Manufactured from sintered metal low carbon copper-infiltrated steel, with molybdenum disulfide low friction coating.
    d. Top Latchbolt: Minimum 0.38 inch (10 mm) and greater than 90 degree engagement with strike to prevent door and frame separation under high static load.
    e. Bottom Latchbolt: Minimum of 0.44 inch (11 mm) engagement with strike.
    f. Product Cycle Life: 1,000,000 cycles.
    g. Latch Operation: Top and bottom latch operate independently of each other. Top latch fully engages top strike even when bottom latch is compromised. Separate trigger mechanisms not permitted.
    h. Latch release does not require separate trigger mechanism.
    i. Cable and latching system characteristics:
        1) Installed independently of exit device installation, and capable of functioning on door prior to device and trim installation.
        2) Connected to exit device at single point in steel and aluminum doors, and two points for top and bottom latches in wood doors.

3) Bottom latch height adjusted, from single point for steel and aluminum doors and two points for wood doors, after system is installed and connected to exit device, while door is hanging
4) Bottom latch position altered up and down minimum of 2 inches (51 mm) in steel and aluminum doors without additional adjustment. Bottom latch deadlocks in every adjustment position in wood doors.
5) Top and bottom latches in steel and aluminum doors and top latch in wood doors may be removed while door is hanging.

15. Top latch mounting: double or single tab mount for steel doors, face mount for aluminum doors eliminating requirement of tabs, and double tab mount for wood doors.
16. Provide exit devices with optional trim designs to match other lever and pull designs used on the project.
17. Tactile Warning (Knurling): Where required by authority having jurisdiction. Provide on levers on exterior (secure side) of doors serving rooms considered to be hazardous.

2.8 CYLINDERS

A. Manufacturers:
   1. Scheduled Manufacturer: Schlage. No substitute.
B. Requirements:
   1. Provide interchangeable cylinders/cores to match Owner's existing key system, compliant with ANSI/BHMA A156.5; latest revision; cylinder face finished to match lockset, manufacturer's series as indicated. Refer to "KEYING" article, herein.
   2. Provide the following keyway: Schlage E – verify with owner.
C. Construction Keying:
   1. Replaceable Construction Cores
      a. Provide temporary construction cores replaceable by permanent cores, furnished in accordance with the following requirements.
         1) 3 construction control keys
         2) 12 construction change (day) keys.
      b. Owner or Owner's Representative will replace temporary construction cores with permanent cores.

2.9 KEYING

A. Provide a factory registered keying system, complying with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.
B. Provide cylinders/cores keyed into Owner's existing factory registered keying system.
C. Comply with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.
D. Requirements:
   1. Provide permanent cylinders/cores keyed by the manufacturer according to the following key system.
      a. Master Keying system as directed by the Owner.
   2. Forward bitting list and keys separately from cylinders, by means as directed by Owner. Failure to comply with forwarding requirements will be cause for replacement of cylinders/cores involved at no additional cost to Owner.
   3. Provide keys with the following features:
      a. Material: Nickel silver; minimum thickness of .107-inch (2.3mm)
      b. Patent Protection: Keys and blanks protected by one or more utility patent(s).
   4. Identification:
      a. Mark permanent cylinders/cores and keys with applicable blind code per DHI publication "Keying Systems and Nomenclature" for identification. Do not provide blind code marks with actual key cuts.
      b. Identification stamping provisions must be approved by the Architect and Owner.

c. Stamp cylinders/cores and keys with Owner's unique key system facility code as established by the manufacturer; key symbol and embossed or stamped with "DO NOT DUPLICATE" along with the "PATENTED" or patent number to enforce the patent protection.
d. Failure to comply with stamping requirements will be cause for replacement of keys involved at no additional cost to Owner.
e. Forward permanent cylinders/cores to Owner, separately from keys, by means as directed by Owner.

5. Quantity: Furnish in the following quantities.
   a. Change (Day) Keys: 3 per cylinder/core.
   b. Permanent Control Keys: 3.
   c. Master Keys: 6.

2.10 KEY CONTROL SYSTEM

A. Manufacturers:
   1. Scheduled Manufacturer: Telkee.
   2. Acceptable Manufacturers: HPC, Lund.

B. Requirements:
   1. Provide key control system, including envelopes, labels, tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet, all as recommended by system manufacturer, with capacity for 150% of number of locks required for Project.
      a. Provide complete cross index system set up by hardware supplier, and place keys on markers and hooks in cabinet as determined by final key schedule.
      b. Provide hinged-panel type cabinet for wall mounting.

2.11 DOOR CLOSERS

A. Manufacturers and Products:
   1. Scheduled Manufacturer and Product: LCN 4040XP series. No substitute.

B. Requirements:
   1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. ISO 9000 certify closers. Stamp units with date of manufacture code.
   2. Provide door closers with fully hydraulic, full rack and pinion action with high strength cast iron cylinder, and full complement bearings at shaft.
   3. Cylinder Body: 1-1/2 inch (38 mm) diameter with 3/4 inch (19 mm) diameter double heat-treated pinion journal.
   4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
   5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.
   6. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck.
   7. Provide closers with solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers.
   8. Pressure Relief Valve (PRV) Technology: Not permitted.
   9. Finish for Closer Cylinders, Arms, Adapter Plates, and Metal Covers: Powder coating finish which has been certified to exceed 100 hours salt spray testing as described in ANSI Standard A156.4 and ASTM B117, or has special rust inhibitor (SRI).
   10. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

2.12 DOOR TRIM

A. Manufacturers:
   1. Scheduled Manufacturer: Ives. Basis of Design.
B. Requirements:
   1. Provide push plates 4 inches (102 mm) wide by 16 inches (406 mm) high by 0.050 inch (1 mm) thick and beveled 4 edges. Where width of door stile prevents use of 4 inches (102 mm) wide plate, adjust width to fit.
   2. Provide push bars of solid bar stock, diameter and length as scheduled. Provide push bars of sufficient length to span from center to center of each stile. Where required, mount back to back with pull.
   3. Provide offset pulls of solid bar stock, diameter and length as scheduled. Where required, mount back to back with push bar.
   4. Provide flush pulls as scheduled. Where required, provide back-to-back mounted model.
   5. Provide pulls of solid bar stock, diameter and length as scheduled. Where required, mount back to back with push bar.
   6. Provide pull plates 4 inches (102 mm) wide by 16 inches (406 mm) high by 0.050 inch (1 mm) thick, beveled 4 edges, and prepped for pull. Where width of door stile prevents use of 4 inches (102 mm) wide plate, adjust width to fit.
   7. Provide wire pulls of solid bar stock, diameter and length as scheduled.
   8. Provide decorative pulls as scheduled. Where required, mount back to back with pull.

2.13 PROTECTION PLATES

A. Manufacturers:
   1. Scheduled Manufacturer: Ives. Basis of Design.
B. Requirements:
   1. Provide kick plates, mop plates, and armor plates minimum of 0.050 inch (1 mm) thick, beveled four edges as scheduled. Furnish with sheet metal or wood screws, finished to match plates.
   2. Sizes of plates:
      a. Kick Plates: 10 inches (254 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs
      b. Mop Plates: 4 inches (102 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs
      c. Armor Plates: 36 inches (914 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs

2.14 DOOR STOPS AND HOLDERS

A. Manufacturers:
   1. Scheduled Manufacturer: Ives. Basis of Design.
B. Provide door stops at each door leaf:
   1. Provide wall stops wherever possible. Provide convex type where mortise type locks are used and concave type where cylindrical type locks are used.
   2. Where a wall stop cannot be used, provide universal floor stops for low or high rise options.
   3. Where wall or floor stop cannot be used, provide medium duty surface mounted overhead stop.

2.15 THRESHOLDS, SEALS, DOOR SWEEPS, AUTOMATIC DOOR BOTTOMS, AND GASKETING

A. Manufacturers:
   1. Scheduled Manufacturer: Zero International. Basis of Design.
B. Requirements:
   1. Provide thresholds, weather-stripping (including door sweeps, seals, and astragals) and gasketing systems (including smoke, sound, and light) as specified and per architectural details. Match finish of other items.

2. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.
3. Size of thresholds:
   a. Saddle Thresholds: 1/2 inch (13 mm) high by jamb width by door width
   b. Bumper Seal Thresholds: 1/2 inch (13 mm) high by 5 inches (127 mm) wide by door width
4. Provide door sweeps, seals, astragals, and auto door bottoms only of type where resilient or flexible seal strip is easily replaceable and readily available.

2.16 SILENCERS

A. Manufacturers:
   1. Scheduled Manufacturer: Ives. Basis of Design.
B. Requirements:
   1. Provide "push-in" type silencers for hollow metal or wood frames.
   2. Provide one silencer per 30 inches (762 mm) of height on each single frame, and two for each pair frame.
   3. Omit where gasketing is specified.

2.17 LATCH PROTECTORS

A. Manufacturers:
   1. Scheduled Manufacturer: Ives. Basis of Design.
B. Provide stainless steel latch protectors of type required to function with specified lock.

2.18 FINISHES

A. Finish: exterior and aluminum storefront doors - BHMA 626/652 (US26D); except:
   1. Hinges at Exterior Doors: BHMA 630 (US32D)
   2. Push Plates, Pulls, and Push Bars: BHMA 630 (US32D)
   3. Protection Plates: BHMA 630 (US32D)
   4. Overhead Stops and Holders: BHMA 630 (US32D)
   5. Door Closers: Powder Coat to Match
   6. Wall Stops: BHMA 630 (US32D)
   7. Latch Protectors: BHMA 630 (US32D)
   8. Weatherstripping: Clear Anodized Aluminum
   9. Thresholds: Mill Finish Aluminum
B. Finish: all interior doors match existing
   1. Bailly Elementary School
      a. BHMA 612/639 (US10)
   2. Chesterton Middle School
      a. BHMA 613 or 643e/716 (US10B)

PART 3 – EXECUTION

3.1 EXAMINATION

A. Field verify existing conditions, existing doors and frames receiving new hardware. Verify that new hardware is compatible with existing door and frame preparation and existing conditions.
B. Prior to installation of hardware, examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance.
C. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Where on-site modification of doors and frames is required:
   1. Carefully remove existing door hardware and components being reused. Clean, protect, tag, and store in accordance with storage and handling requirements specified herein.
   2. Field modify and prepare existing door and frame for new hardware being installed.
   3. When modifications are exposed to view, use concealed fasteners, when possible.
   4. Prepare hardware locations and reinstall in accordance with installation requirements for new door hardware and with:
      a. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.
      b. Wood Doors: DHI WDHS.5 "Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors."
      c. Doors in rated assemblies: NFPA 80 for restrictions on on-site door hardware preparation.

3.3 INSTALLATION

A. Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.
   1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
   2. Custom Steel Doors and Frames: HMMA 831.
   3. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
B. Install each hardware item in compliance with manufacturer’s instructions and recommendations, using only fasteners provided by manufacturer.
C. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.
D. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.
E. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
F. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.
G. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.
H. Lock Cylinders: Install construction cores to secure building and areas during construction period.
   1. Replace construction cores with permanent cores as indicated in keying section.
   2. Furnish permanent cores to Owner for installation.
I. Wiring: Coordinate with Division 26, ELECTRICAL sections for:
   1. Conduit, junction boxes and wire pulls.
   2. Connections to and from power supplies to electrified hardware.
   3. Connections to fire/smoke alarm system and smoke evacuation system.
   4. Connection of wire to door position switches and wire runs to central room or area, as directed by Architect.
   5. Testing and labeling wires with Architect’s opening number.
J. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.
K. Door Closers: Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Mount closers so they are not visible in corridors, lobbies and other public spaces unless approved by Architect.
L. Closer/Holders: Mount closer/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.

M. Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings or in equipment room, or alternate location as directed by Architect.
N. Thresholds: Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."
O. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.
P. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
Q. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.
R. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

3.4 FIELD QUALITY CONTROL

A. Engage qualified manufacturer trained representative to perform inspections and to prepare inspection reports.
   1. Representative will inspect door hardware and state in each report whether installed work complies with or deviates from requirements, including whether door hardware is properly installed and adjusted.

3.5 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
   1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.
B. Occupancy Adjustment: Approximately three to six months after date of Substantial Completion, Installer's Architectural Hardware Consultant must examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure proper function of doors and door hardware.

3.6 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.
B. Clean operating items as necessary to restore proper function and finish.
C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

3.7 DOOR HARDWARE SCHEDULE

A. Hardware items are referenced in the following hardware. Refer to the above-specifications for special features, options, cylinders/keying, and other requirements.
B. Hardware Sets:

Hardware Sets – Chesterton Middle School

Hardware Group No. 01 - CMS
Provide each PR door(s) with the following:

NOTE:	EXISTING DOOR / EXISTING FRAME - ALL HDW TO REMAIN

Hardware Group No. 02 - CMS
Provide each PR door(s) with the following:

6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	ALUM REMOVABLE MULLION	5654B AB	628	VON
2	EA	PANIC HARDWARE	99-EO-SNB	626	VON
2	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
2	EA	SURFACE CLOSER	4040XP SCUSH SRI TBSRT	689	LCN
2	EA	PA MOUNTING PLATE - AS REQUIRED	4040XP-18PA SRI	689	LCN
2	EA	CUSH SHOE SUPPORT - AS REQUIRED	4040XP-30	689	LCN
2	EA	BLADE STOP SPACER - AS REQUIRED	4040XP-61	689	LCN
1	EA	RAIN DRIP - AS REQUIRED	142AA	AA	ZER
1	EA	SEALS	BY DOOR/ FRAME MANUF.		B/O
2	EA	DOOR SWEEP	39A	A	ZER
1	EA	HD THRESHOLD	655A-V3-226	A	ZER
		NOTE:	FURNISH 5BB1HW 5" X 4.5" HINGES @ DOORS OVER 3'0" WIDE		

Hardware Group No. 03 - CMS
Provide each PR door(s) with the following:

6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	ALUM REMOVABLE MULLION	5654B AB	628	VON
2	EA	PANIC HARDWARE	99-EO-SNB	626	VON
2	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
2	EA	SURFACE CLOSER	4040XP SCUSH TBSRT	689	LCN
2	EA	PA MOUNTING PLATE - AS REQUIRED	4040XP-18PA	689	LCN
2	EA	CUSH SHOE SUPPORT - AS REQUIRED	4040XP-30	689	LCN
2	EA	BLADE STOP SPACER - AS REQUIRED	4040XP-61	689	LCN
1	EA	SEALS	BY DOOR/ FRAME MANUF.		B/O
		NOTE:	FURNISH 5BB1HW 5" X 4.5" HINGES @ DOORS OVER 3'0" WIDE		

Hardware Group No. 04 - CMS
Provide each PR door(s) with the following:

6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	ALUM REMOVABLE MULLION	5654B AB	628	VON
1	EA	PANIC HARDWARE	99-EO W/CYL HOLE-L/TRIM-SNB (ACTIVE LEAF)	626	VON
1	EA	PANIC HARDWARE	99-EO-SNB	626	VON
1	EA	FSIC RIM CYLINDER	20-057 ICX W/CONST. CORE	626	SCH

1	EA	FISC PERMANENT CORE	23-030 VKC	626	SCH
2	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
2	EA	SURFACE CLOSER	4040XP SCUSH SRI TBSRT	689	LCN
2	EA	PA MOUNTING PLATE - AS REQUIRED	4040XP-18PA SRI	689	LCN
2	EA	CUSH SHOE SUPPORT - AS REQUIRED	4040XP-30	689	LCN
2	EA	BLADE STOP SPACER - AS REQUIRED	4040XP-61	689	LCN
1	EA	RAIN DRIP - AS REQUIRED	142AA	AA	ZER
1	EA	SEALS	BY DOOR/ FRAME MANUF.		B/O
2	EA	DOOR SWEEP	39A	A	ZER
1	EA	HD THRESHOLD	655A-V3-226	A	ZER
1	EA	WIRE HARNESS CONNECTOR IN DOOR - LENGTH AS REQUIRED	CON -		SCH
1	EA	WIRE HARNESS CONNECTOR - IN FRAME TO POWER SUPPLY	CON-6W		SCH
1	EA	CREDENTIAL READER	BY SECTION 28 13 00		B/O
2	EA	DOOR CONTACT	679-05 TYPE AS REQ	WHT	SCE
1	EA	POWER SUPPLY	BY SECTION 28 13 00		B/O
		NOTE:	FURNISH 5BB1HW 5" X 4.5" HINGES @ DOORS OVER 3'0" WIDE		

OPERATIONAL DESCRIPTION: ENTRANCE BY CREDENTIAL READER OR MANUAL KEY OVER-RIDE. ALWAYS FREE EGRESS. FAIL SECURE.

Hardware Group No. 05 - CMS
Provide each PR door(s) with the following:

6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	POWER TRANSFER	EPT10 CON (ACTIVE LEAF ONLY)	689	VON
1	EA	ALUM REMOVABLE MULLION	5654B AB	628	VON
1	EA	PANIC HARDWARE	99-EO-SNB (ON INACTIVE LHR LEAF)	626	VON
1	EA	ELEC PANIC HARDWARE	RX-LC-QEL-99-EO W/CYL HOLE-990-CON-SNB 24 VDC (ON ACTIVE LEAF ONLY)	626	VON
1	EA	FSIC RIM CYLINDER	20-057 ICX W/CONST. CORE	626	SCH
1	EA	FISC PERMANENT CORE	23-030 VKC	626	SCH
2	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
2	EA	SURFACE CLOSER	4040XP SCUSH SRI TBSRT	689	LCN
2	EA	PA MOUNTING PLATE - AS REQUIRED	4040XP-18PA SRI	689	LCN
2	EA	CUSH SHOE SUPPORT - AS REQUIRED	4040XP-30	689	LCN
2	EA	BLADE STOP SPACER - AS REQUIRED	4040XP-61	689	LCN

1	EA	RAIN DRIP - AS REQUIRED	142AA	AA	ZER
1	EA	SEALS	BY DOOR/ FRAME MANUF.		B/O
2	EA	DOOR SWEEP	39A	A	ZER
1	EA	HD THRESHOLD	655A-V3-226	A	ZER
1	EA	WIRE HARNESS CONNECTOR IN DOOR - LENGTH AS REQUIRED	CON -		SCH
1	EA	WIRE HARNESS CONNECTOR - IN FRAME TO POWER SUPPLY	CON-6W		SCH
1	EA	CREDENTIAL READER	BY SECTION 28 13 00		B/O
2	EA	DOOR CONTACT	679-05 TYPE AS REQ	WHT	SCE
1	EA	POWER SUPPLY	BY SECTION 28 13 00		B/O
		NOTE:	FURNISH 5BB1HW 5" X 4.5" HINGES @ DOORS OVER 3'0" WIDE		

OPERATIONAL DESCRIPTION: ENTRANCE BY CREDENTIAL READER OR MANUAL KEY OVER-RIDE. ALWAYS FREE EGRESS. FAIL SECURE.

Hardware Group No. 06 - CMS
Provide each PR door(s) with the following:

6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	POWER TRANSFER	EPT10 CON (ACTIVE LEAF ONLY)	689	VON
1	EA	ALUM REMOVABLE MULLION	5654B AB	628	VON
1	EA	PANIC HARDWARE	99-EO-SNB (ON INACTIVE LHR LEAF)	626	VON
1	EA	ELEC PANIC HARDWARE	RX-LC-QEL-99-EO W/CYL HOLE-990-CON-SNB 24 VDC (ON ACTIVE LEAF ONLY)	626	VON
1	EA	FSIC RIM CYLINDER	20-057 ICX W/CONST. CORE	626	SCH
1	EA	FISC PERMANENT CORE	23-030 VKC	626	SCH
2	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
2	EA	SURFACE CLOSER	4040XP SCUSH TBSRT	689	LCN
2	EA	PA MOUNTING PLATE - AS REQUIRED	4040XP-18PA	689	LCN
2	EA	CUSH SHOE SUPPORT - AS REQUIRED	4040XP-30	689	LCN
2	EA	BLADE STOP SPACER - AS REQUIRED	4040XP-61	689	LCN
1	EA	SEALS	BY DOOR/ FRAME MANUF.		B/O
1	EA	WIRE HARNESS CONNECTOR IN DOOR - LENGTH AS REQUIRED	CON -		SCH
1	EA	WIRE HARNESS CONNECTOR - IN FRAME TO POWER SUPPLY	CON-6W		SCH
1	EA	CREDENTIAL READER	BY SECTION 28 13 00		B/O
1	EA	DOOR CONTACT	679-05 TYPE AS REQ	WHT	SCE
1	EA	POWER SUPPLY	BY SECTION 28 13 00		B/O

		NOTE:	FURNISH 5BB1HW 5" X 4.5" HINGES @ DOORS OVER 3'0" WIDE		

OPERATIONAL DESCRIPTION: ENTRANCE BY CREDENTIAL READER OR MANUAL KEY OVER-RIDE. ALWAYS FREE EGRESS. FAIL SECURE.

Hardware Group No. 07 - CMS
Provide each SGL door(s) with the following:

1	EA	PANIC HARDWARE	99-EO-SNB	626	VON
1	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
1	EA	SURFACE CLOSER	4040XP SCUSH SRI TBSRT	689	LCN
1	EA	PA MOUNTING PLATE - AS REQUIRED	4040XP-18PA SRI	689	LCN
1	EA	CUSH SHOE SUPPORT - AS REQUIRED	4040XP-30	689	LCN
1	EA	BLADE STOP SPACER - AS REQUIRED	4040XP-61	689	LCN
		NOTE:	EXISTING DOOR / EXISTING FRAME -BALANCE OF HDW TO REMAIN		

EXISTING OPENING - NEW EXIT AND NEW CLOSER ON ONE LEAF ONLY - BALANCE OF HARDWARE TO REMAIN.

Hardware Group No. 08 - CMS
Provide each PR door(s) with the following:

2	EA	PANIC HARDWARE	99-EO-SNB	626	VON
1		NOTE:	EXISTING DOOR / EXISTING FRAME -BALANCE OF HDW TO REMAIN		

NEW EXITS ONLY - BALANCE OF HARDWARE TO REMAIN.

Hardware Group No. 09 - CMS
Provide each SGL door(s) with the following:

1	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	ELEC PANIC HARDWARE	RX-LC-QEL-99-EO W/CYL HOLE-990-CON-SNB 24 VDC	626	VON
1	EA	FSIC RIM CYLINDER	20-057 ICX W/CONST. CORE	626	SCH
1	EA	FISC PERMANENT CORE	23-030 VKC	626	SCH
1	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
1	EA	SURFACE CLOSER	4040XP SCUSH SRI TBSRT	689	LCN
1	EA	PA MOUNTING PLATE - AS REQUIRED	4040XP-18PA SRI	689	LCN
1	EA	CUSH SHOE SUPPORT - AS REQUIRED	4040XP-30	689	LCN
1	EA	BLADE STOP SPACER - AS REQUIRED	4040XP-61	689	LCN
1	EA	SEALS	BY DOOR/ FRAME MANUF.		B/O
1	EA	DOOR SWEEP	39A	A	ZER
1	EA	HD THRESHOLD	655A-V3-226	A	ZER

1	EA	WIRE HARNESS CONNECTOR IN DOOR - LENGTH AS REQUIRED	CON -		SCH
1	EA	WIRE HARNESS CONNECTOR - IN FRAME TO POWER SUPPLY	CON-6W		SCH
1	EA	CREDENTIAL READER	BY SECTION 28 13 00		B/O
1	EA	DOOR CONTACT	679-05 TYPE AS REQ	WHT	SCE
1	EA	POWER SUPPLY	BY SECTION 28 13 00		B/O

OPERATIONAL DESCRIPTION: ENTRANCE BY CREDENTIAL READER, SECURITY SYSTEM OR MANUAL KEY OVER-RIDE. ALWAYS FREE EGRESS. FAIL SECURE.

Hardware Group No. 10 - CMS
Provide each SGL door(s) with the following:

1	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	ELEC PANIC HARDWARE	RX-LC-QEL-98-EO W/CYL HOLE-L/TRIM-CON-SNB 24 VDC	626	VON
1	EA	FSIC RIM CYLINDER	20-057 ICX W/CONST. CORE	626	SCH
1	EA	FISC PERMANENT CORE	23-030 VKC	626	SCH
1	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
1	EA	SURFACE CLOSER	4040XP SCUSH SRI TBSRT	689	LCN
1	EA	PA MOUNTING PLATE - AS REQUIRED	4040XP-18PA SRI	689	LCN
1	EA	CUSH SHOE SUPPORT - AS REQUIRED	4040XP-30	689	LCN
1	EA	BLADE STOP SPACER - AS REQUIRED	4040XP-61	689	LCN
1	EA	SEALS	BY DOOR/ FRAME MANUF.		B/O
1	EA	DOOR SWEEP	39A	A	ZER
1	EA	HD THRESHOLD	655A-V3-226	A	ZER
1	EA	WIRE HARNESS CONNECTOR IN DOOR - LENGTH AS REQUIRED	CON -		SCH
1	EA	WIRE HARNESS CONNECTOR - IN FRAME TO POWER SUPPLY	CON-6W		SCH
1	EA	CREDENTIAL READER	BY SECTION 28 13 00		B/O
1	EA	DOOR CONTACT	679-05 TYPE AS REQ	WHT	SCE
1	EA	POWER SUPPLY	BY SECTION 28 13 00		B/O

OPERATIONAL DESCRIPTION: ENTRANCE BY CREDENTIAL READER, SECURITY SYSTEM OR MANUAL KEY OVER-RIDE. ALWAYS FREE EGRESS. FAIL SECURE.

Hardware Group No. 11 - CMS
Provide each SGL door(s) with the following:

1	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	PANIC HARDWARE	99-EO-SNB	626	VON
1	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
1	EA	SURFACE CLOSER	4040XP SCUSH SRI TBSRT	689	LCN
1	EA	PA MOUNTING PLATE - AS REQUIRED	4040XP-18PA SRI	689	LCN

1	EA	CUSH SHOE SUPPORT - AS REQUIRED	4040XP-30	689	LCN
1	EA	BLADE STOP SPACER - AS REQUIRED	4040XP-61	689	LCN
1	EA	SEALS	BY DOOR/ FRAME MANUF.		B/O
1	EA	DOOR SWEEP	39A	A	ZER
1	EA	HD THRESHOLD	655A-V3-226	A	ZER

Hardware Group No. 12 - CMS
Provide each SGL door(s) with the following:

1	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	PANIC HARDWARE	LD-99-NL-OP-110MD-SNB	626	VON
1	EA	FSIC RIM CYLINDER	20-057 ICX W/CONST. CORE	626	SCH
1	EA	FISC PERMANENT CORE	23-030 VKC	626	SCH
1	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
1	EA	SURFACE CLOSER	4040XP SCUSH SRI TBSRT	689	LCN
1	EA	PA MOUNTING PLATE - AS REQUIRED	4040XP-18PA SRI	689	LCN
1	EA	CUSH SHOE SUPPORT - AS REQUIRED	4040XP-30	689	LCN
1	EA	BLADE STOP SPACER - AS REQUIRED	4040XP-61	689	LCN
1	EA	SEALS	BY DOOR/ FRAME MANUF.		B/O
1	EA	DOOR SWEEP	39A	A	ZER
1	EA	HD THRESHOLD	655A-V3-226	A	ZER

Hardware Group No. 13 - CMS
Provide each PR door(s) with the following:

6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	ALUM REMOVABLE MULLION	5654B AB	628	VON
2	EA	PANIC HARDWARE	99-EO-SNB	626	VON
2	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
2	EA	SURFACE CLOSER	4040XP SCUSH SRI TBSRT	689	LCN
2	EA	PA MOUNTING PLATE - AS REQUIRED	4040XP-18PA SRI	689	LCN
2	EA	CUSH SHOE SUPPORT - AS REQUIRED	4040XP-30	689	LCN
2	EA	BLADE STOP SPACER - AS REQUIRED	4040XP-61	689	LCN
1	EA	RAIN DRIP - AS REQUIRED	142AA	AA	ZER
1	EA	SEALS	BY DOOR/ FRAME MANUF.		B/O
2	EA	DOOR SWEEP	39A	A	ZER
1	EA	HD THRESHOLD	655A-V3-226	A	ZER
		NOTE:	FURNISH 5BB1HW 5" X 4.5" HINGES @ DOORS OVER 3'0" WIDE		

Hardware Group No. 14 - CMS
Provide each PR door(s) with the following:

6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
2	EA	MANUAL FLUSH BOLT	FB458	626	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	STOREROOM W/DEADBOLT	L9480T 06N	626	SCH
1	EA	FISC PERMANENT CORE	23-030 VKC	626	SCH
1	EA	SURFACE CLOSER	4040XP SCUSH SRI TBSRT (ACTIVE LEAF ONLY)	689	LCN
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS	630	IVE
1	EA	GASKETING SET/SILENCERS - AS REQUIRED	188SBK PSA/SILENCERS - AT NON-RATED DOORS	BK	ZER
2	EA	DOOR SWEEP	39A	A	ZER
1	EA	ASTRAGAL	41AA	AA	ZER
1	EA	HD THRESHOLD	655A-V3-226	A	ZER
		NOTE:	FURNISH 5BB1HW 5" X 4.5" HINGES @ DOORS OVER 3'0" WIDE		

Hardware Group No. 15 - CMS
Provide each PR door(s) with the following:

6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	PANIC HARDWARE	9949-EO-SNB	626	VON
1	EA	PANIC HARDWARE	9949-L-NL-06-SNB	626	VON
1	EA	FSIC RIM CYLINDER	20-057 ICX W/CONST. CORE	626	SCH
1	EA	FISC PERMANENT CORE	23-030 VKC	626	SCH
2	EA	SURFACE CLOSER	4040XP DEL SRI TBSRT	689	LCN
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS	630	IVE
1	EA	RAIN DRIP - AS REQUIRED	142AA	AA	ZER
1	EA	GASKETING SET	188SBK PSA	BK	ZER
1	EA	ASTRAGAL SET	328BK-S	BK	ZER
2	EA	DOOR SWEEP	39A	A	ZER
1	EA	HD THRESHOLD	655A-V3-226	A	ZER
		NOTE:	FURNISH 5BB1HW 5" X 4.5" HINGES @ DOORS OVER 3'0" WIDE		

Hardware Group No. 16 - CMS
Provide each PR door(s) with the following:

6	EA	HINGE	5BB1HW 4.5 X 4.5 - NRP AT OUTSWINGING DRS	652	IVE
1	EA	PANIC HARDWARE	9949-EO-SNB	626	VON
1	EA	PANIC HARDWARE	9949-L-NL-06-SNB	626	VON
1	EA	FSIC RIM CYLINDER	20-057 ICX W/CONST. CORE	626	SCH
1	EA	FISC PERMANENT CORE	23-030 VKC	626	SCH
2	EA	SURFACE CLOSER	4040XP TBSRT (MOUNT OUTSIDE POOL AREA)	689	LCN

	EA	SEALS	BY DOOR/ FRAME MANUF.		B/O
		NOTE:	FURNISH 5BB1HW 5" X 4.5" HINGES @ DOORS OVER 3'0" WIDE		

Hardware Group No. 17 - CMS
Provide each SGL door(s) with the following:

3	EA	HINGE	5BB1 4.5 X 4.5	F643E/ 716	IVE
1	EA	OFFICE/ENTRY LOCK	L9050T 06N 09-544	643e	SCH
1	EA	FISC PERMANENT CORE	23-030 VKC	606	SCH
1	EA	DOOR STOP - AS REQUIRED	FS436/WS401 CCV	643E/7 16	IVE
1	EA	GASKETING SET/SILENCERS - AS REQUIRED	188SBK PSA/SILENCERS - AT NON-RATED DOORS	BK	ZER
		NOTE:	FURNISH 5BB1HW 5" X 4.5" HINGES @ DOORS OVER 3'0" WIDE		

FURNISH NEW HINGES REWORK FRAME AND BLANK ONE HINGE.

Hardware Group No. 18 - CMS
Provide each SGL door(s) with the following:

3	EA	HINGE	5BB1 4.5 X 4.5	F643E/ 716	IVE
1	EA	STOREROOM LOCK	L9080T 06N	643e	SCH
1	EA	FISC PERMANENT CORE	23-030 VKC	606	SCH
1	EA	DOOR STOP - AS REQUIRED	FS436/WS401 CCV	643E/7 16	IVE
1	EA	GASKETING SET/SILENCERS - AS REQUIRED	188SBK PSA/SILENCERS - AT NON-RATED DOORS	BK	ZER
		NOTE:	FURNISH 5BB1HW 5" X 4.5" HINGES @ DOORS OVER 3'0" WIDE		

Hardware Group No. 19 - CMS
Provide each SGL door(s) with the following:

3	EA	HINGE	5BB1 4.5 X 4.5	F643E/ 716	IVE
1	EA	STOREROOM LOCK	L9080T 06N	643e	SCH
1	EA	FISC PERMANENT CORE	23-030 VKC	606	SCH
1	EA	DOOR STOP - AS REQUIRED	FS436/WS401 CCV	643E/7 16	IVE
1	EA	GASKETING SET/SILENCERS - AS REQUIRED	188SBK PSA/SILENCERS - AT NON-RATED DOORS	BK	ZER
		NOTE:	FURNISH 5BB1HW 5" X 4.5" HINGES @ DOORS OVER 3'0" WIDE		

FURNISH NEW HINGES REWORK FRAME AND BLANK ONE HINGE.

Hardware Group No. 20 - CMS
Provide each SGL door(s) with the following:

3	EA	HINGE	5BB1 4.5 X 4.5	F643E/716	IVE
1	EA	STOREROOM LOCK	L9080T 06N	643e	SCH
1	EA	FISC PERMANENT CORE	23-030 VKC	606	SCH
1	EA	OH STOP	90SE	613	GLY
1	EA	DOOR STOP - AS REQUIRED	FS436/WS401 CCV	643E/716	IVE
1	EA	GASKETING SET/SILENCERS - AS REQUIRED	188SBK PSA/SILENCERS - AT NON-RATED DOORS	BK	ZER
		NOTE:	FURNISH 5BB1HW 5" X 4.5" HINGES @ DOORS OVER 3'0" WIDE		

Hardware Group No. 21 - CMS
Provide each SGL door(s) with the following:

3	EA	HINGE	5BB1 4.5 X 4.5	F643E/716	IVE
1	EA	STOREROOM LOCK	L9080T 06N	643e	SCH
1	EA	FISC PERMANENT CORE	23-030 VKC	606	SCH
1	EA	SURFACE CLOSER	4040XP EDA TBSRT	695	LCN
1	EA	KICK PLATE	8400 10" X 1 1/2" LDW B-CS	613	IVE
1	EA	DOOR STOP - AS REQUIRED	FS436/WS401 CCV	643E/716	IVE
1	EA	GASKETING SET/SILENCERS - AS REQUIRED	188SBK PSA/SILENCERS - AT NON-RATED DOORS	BK	ZER
		NOTE:	FURNISH 5BB1HW 5" X 4.5" HINGES @ DOORS OVER 3'0" WIDE		

NEW DOOR / EXISTING FRAME - FURNISH HINGE FILLER PLATES ON EXISTING DUTCH DOOR FRAME - PROVIDE 3 NEW HINGES REWORK FRAME AND BLANK ONE HINGE.

Hardware Group No. 22 - CMS
Provide each SGL door(s) with the following:

3	EA	HINGE	5BB1HW 4.5 X 4.5 - NRP AT OUTSWINGING DRS	652	IVE
1	EA	STOREROOM LOCK	L9080T 06N	626	SCH
1	EA	FISC PERMANENT CORE	23-030 VKC	626	SCH
1	EA	SURFACE CLOSER	4040XP SCUSH TBSRT	689	LCN
1	EA	KICK PLATE	8400 10" X 1 1/2" LDW B-CS	630	IVE
1	EA	GASKETING SET/SILENCERS - AS REQUIRED	188SBK PSA/SILENCERS - AT NON-RATED DOORS	BK	ZER
		NOTE:	FURNISH 5BB1HW 5" X 4.5" HINGES @ DOORS OVER 3'0" WIDE		

Hardware Group No. 23 - CMS
Provide each SGL door(s) with the following:

3	EA	HINGE	5BB1 4.5 X 4.5	F643E/716	IVE
1	EA	STOREROOM LOCK	L9080T 06N	643e	SCH
1	EA	FISC PERMANENT CORE	23-030 VKC	606	SCH
1	EA	SURFACE CLOSER	4040XP SCUSH TBSRT	695	LCN
1	EA	KICK PLATE	8400 10" X 1 1/2" LDW B-CS	613	IVE
1	EA	DOOR STOP - AS REQUIRED	FS436/WS401 CCV	643E/716	IVE
1	EA	GASKETING SET/SILENCERS - AS REQUIRED	188SBK PSA/SILENCERS - AT NON-RATED DOORS	BK	ZER
		NOTE:	FURNISH 5BB1HW 5" X 4.5" HINGES @ DOORS OVER 3'0" WIDE		

NEW DOOR / EXISTING FRAME - FURNISH HINGE FILLER PLATES ON EXISTING DUTCH DOOR FRAME - PROVIDE 3 NEW HINGES REWORK FRAME AND BLANK ONE HINGE.

Hardware Group No. 24 – CMS
Provide each SGL door(s) with the following:

3	EA	HINGE	5BB1 4.5 X 4.5	F643E/716	IVE
1	EA	CLASSROOM SECURITY W/INDICATOR	L9071T 06N L283-711	626	SCH
2	EA	FISC PERMANENT CORE	23-030 VKC	626	SCH
1	EA	DOOR STOP - AS REQUIRED	FS436/WS401 CCV	626	IVE
1	EA	GASKETING SET/SILENCERS - AS REQUIRED	188SBK PSA/SILENCERS - AT NON-RATED DOORS	BK	ZER
		NOTE:	FURNISH 5BB1HW 5" X 4.5" HINGES @ DOORS OVER 3'0" WIDE		

Hardware Group No. 25 - CMS
Provide each SGL door(s) with the following:

3	EA	HINGE	5BB1HW 4.5 X 4.5 - NRP AT OUTSWINGING DRS	F643E/716	IVE
1	EA	CYL X TURN DEAD LOCK	L460T L583-363	613	SCH
1	EA	FISC PERMANENT CORE	23-030 VKC	606	SCH
1	EA	PUSH PLATE	8200 4" X 16" CFC	613	IVE
1	EA	PULL PLATE	8302 10" 4" X 16" CFT	613	IVE
1	EA	SURFACE CLOSER	4040XP EDA TBSRT	695	LCN
1	EA	KICK PLATE	8400 10" X 1 1/2" LDW B-CS	613	IVE
1	EA	DOOR STOP - AS REQUIRED	FS436/WS401 CCV	643E/716	IVE
1	EA	GASKETING SET	188SBK PSA	BK	ZER

SECTION 08710

DOOR HARDWARE

Hardware Group No. 26 - CMS
Provide each SGL door(s) with the following:

		NOTE:	EXISTING DOOR / EXISTING FRAME - ALL HDW TO REMAIN		

Hardware Group No. 27 - CMS
Provide each PR door(s) with the following:

6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	ALUM REMOVABLE MULLION	5654B AB	628	VON
2	EA	PANIC HARDWARE	33A-EO-299	626	VON
1	EA	PANIC HARDWARE	33A-L-06SS	626	VON
2	EA	SURFACE CLOSER	4040XP SCUSH SRI TBSRT	689	LCN
2	EA	PA MOUNTING PLATE - AS REQUIRED	4040XP-18PA SRI	689	LCN
2	EA	CUSH SHOE SUPPORT - AS REQUIRED	4040XP-30	689	LCN
2	EA	BLADE STOP SPACER - AS REQUIRED	4040XP-61	689	LCN
1	EA	RAIN DRIP - AS REQUIRED	142AA	AA	ZER
1	EA	SEALS	BY DOOR/ FRAME MANUF.		B/O
2	EA	DOOR SWEEP	39A	A	ZER
1	EA	HD THRESHOLD	655A-V3-226	A	ZER
		NOTE:	FURNISH 5BB1HW 5" X 4.5" HINGES @ DOORS OVER 3'0" WIDE		

<u>Hardware Sets – Bailly Elementary School (Alternate Bid)</u>

Hardware Group No. 01 - BES
Provide each PR door(s) with the following:

6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	REMOVABLE MULLION	5654 AB	628	VON
2	EA	PANIC HARDWARE	99-EO-SNB	626	VON
2	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
2	EA	SURFACE CLOSER	4040XP SCUSH SRI TBSRT	689	LCN
2	EA	PA MOUNTING PLATE - AS REQUIRED	4040XP-18PA SRI	689	LCN
2	EA	CUSH SHOE SUPPORT - AS REQUIRED	4040XP-30	689	LCN
2	EA	BLADE STOP SPACER - AS REQUIRED	4040XP-61	689	LCN
1	EA	RAIN DRIP - AS REQUIRED	142AA	AA	ZER
1	EA	SEALS	BY DOOR/ FRAME MANUF.		B/O
2	EA	DOOR SWEEP	39A	A	ZER
1	EA	HD THRESHOLD	655A-V3-226	A	ZER
		NOTE:	FURNISH 5BB1HW 5" X 4.5" HINGES @ DOORS OVER 3'0" WIDE		

SECTION 08710

DOOR HARDWARE

Hardware Group No. 02 - BES
Provide each PR door(s) with the following:

6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	639	IVE
1	EA	FIRE RATED REMOVABLE MULLION	KR9954 STAB	689	VON
1	EA	FIRE EXIT HARDWARE	99-EO W/CYL HOLE-F-L/TRIM-SNB	US10	VON
1	EA	FIRE EXIT HARDWARE	99-EO-F-SNB	606	VON
1	EA	FSIC RIM CYLINDER	20-057 ICX	606	SCH
1	EA	FSIC MORTISE CYLINDER - MULLION	20-061 ICX 36-083	606	SCH
2	EA	FISC PERMANENT CORE	23-030 VKC	606	SCH
2	EA	90 DEG OFFSET PULL	8190HD 10" O	606	IVE
2	EA	SURFACE CLOSER	4040XP EDA MC TBWMS	US11	LCN
2	EA	KICK PLATE	8400 10" X 2" LDW B-CS	612	IVE
1	EA	GASKETING SET	188SBK 17FT PSA	BK	ZER
		NOTE:	FURNISH 5BB1HW 5" X 4.5" HINGES @ DOORS OVER 3'0" WIDE		

Hardware Group No. 03 - BES
Provide each PR door(s) with the following:

6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	POWER TRANSFER	EPT10 CON (ACTIVE LEAF ONLY)	689	VON
1	EA	FIRE RATED REMOVABLE MULLION	KR9954 STAB	689	VON
1	EA	PANIC HARDWARE	99-EO-SNB (ON INACTIVE LHR LEAF)	626	VON
1	EA	ELEC PANIC HARDWARE	RX-LC-QEL-99-EO W/CYL HOLE-990-CON-SNB 24 VDC (ON ACTIVE LEAF ONLY)	626	VON
1	EA	FSIC RIM CYLINDER	20-057 ICX	626	SCH
1	EA	FISC PERMANENT CORE	23-030 VKC	626	SCH
2	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
2	EA	SURFACE CLOSER	4040XP SCUSH SRI TBSRT	689	LCN
2	EA	PA MOUNTING PLATE - AS REQUIRED	4040XP-18PA SRI	689	LCN
2	EA	CUSH SHOE SUPPORT - AS REQUIRED	4040XP-30	689	LCN
2	EA	BLADE STOP SPACER - AS REQUIRED	4040XP-61	689	LCN
1	EA	RAIN DRIP - AS REQUIRED	142AA	AA	ZER
1	EA	SEALS	BY DOOR/ FRAME MANUF.		B/O
2	EA	DOOR SWEEP	39A	A	ZER
1	EA	HD THRESHOLD	655A-V3-226	A	ZER
		NOTE:	FURNISH 5BB1HW 5" X 4.5" HINGES @ DOORS OVER 3'0" WIDE		

Hardware Group No. 04 - BES
Provide each SGL door(s) with the following:

1	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	ELEC PANIC HARDWARE	RX-LC-QEL-98-EO W/CYL HOLE-L/TRIM-CON-SNB 24 VDC	US26D	VON
1	EA	FSIC RIM CYLINDER	20-057 ICX	626	SCH
1	EA	FISC PERMANENT CORE	23-030 VKC	626	SCH
1	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
1	EA	SURFACE CLOSER	4040XP SCUSH SRI TBSRT	689	LCN
1	EA	PA MOUNTING PLATE - AS REQUIRED	4040XP-18PA SRI	689	LCN
1	EA	CUSH SHOE SUPPORT - AS REQUIRED	4040XP-30	689	LCN
1	EA	BLADE STOP SPACER - AS REQUIRED	4040XP-61	689	LCN
1	EA	SEALS	BY DOOR/ FRAME MANUF.		B/O
1	EA	DOOR SWEEP	39A	A	ZER
1	EA	HD THRESHOLD	655A-V3-226	A	ZER
1	EA	WIRE HARNESS CONNECTOR IN DOOR - LENGTH AS REQUIRED	CON-50		SCH
1	EA	WIRE HARNESS CONNECTOR - IN FRAME TO POWER SUPPLY	CON-6W		SCH
1	EA	CREDENTIAL READER	BY SECTION 28 13 00		B/O
1	EA	DOOR CONTACT	679-05	WHT	SCE
1	EA	POWER SUPPLY	BY SECTION 28 13 00		B/O

OPERATIONAL DESCRIPTION: ENTRANCE BY CREDENTIAL READER, SECURITY SYSTEM OR MANUAL KEY OVER-RIDE. ALWAYS FREE EGRESS. FAIL SECURE.

Hardware Group No. 05 - BES
Provide each SGL door(s) with the following:

1	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	ELEC PANIC HARDWARE	RX-LC-QEL-98-EO W/CYL HOLE-L/TRIM-CON-SNB 24 VDC	US26D	VON
1	EA	FSIC RIM CYLINDER	20-057 ICX	626	SCH
1	EA	FISC PERMANENT CORE	23-030 VKC	626	SCH
1	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
1	EA	SURFACE CLOSER	4040XP DEL SCUSH SRI TBSRT	689	LCN
1	EA	PA MOUNTING PLATE - AS REQUIRED	4040XP-18PA SRI	689	LCN
1	EA	CUSH SHOE SUPPORT - AS REQUIRED	4040XP-30	689	LCN
1	EA	BLADE STOP SPACER - AS REQUIRED	4040XP-61	689	LCN
1	EA	SEALS	BY DOOR/ FRAME MANUF.		B/O
1	EA	DOOR SWEEP	39A	A	ZER
1	EA	HD THRESHOLD	655A-V3-226	A	ZER

1	EA	WIRE HARNESS CONNECTOR IN DOOR - LENGTH AS REQUIRED	CON-50		SCH
1	EA	WIRE HARNESS CONNECTOR - IN FRAME TO POWER SUPPLY	CON-6W		SCH
1	EA	CREDENTIAL READER	BY SECTION 28 13 00		B/O
1	EA	DOOR CONTACT	679-05	WHT	SCE
1	EA	POWER SUPPLY	BY SECTION 28 13 00		B/O

OPERATIONAL DESCRIPTION: ENTRANCE BY CREDENTIAL READER, SECURITY SYSTEM OR MANUAL KEY OVER-RIDE. ALWAYS FREE EGRESS. FAIL SECURE.

Hardware Group No. 06 - BES
Provide each SGL door(s) with the following:

1	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	PANIC HARDWARE	LD-99-EO-SNB	626	VON
1	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
1	EA	SURFACE CLOSER	4040XP SCUSH SRI TBSRT	689	LCN
1	EA	PA MOUNTING PLATE - AS REQUIRED	4040XP-18PA SRI	689	LCN
1	EA	CUSH SHOE SUPPORT - AS REQUIRED	4040XP-30	689	LCN
1	EA	BLADE STOP SPACER - AS REQUIRED	4040XP-61	689	LCN
1	EA	SEALS	BY DOOR/ FRAME MANUF.		B/O
1	EA	DOOR SWEEP	39A	A	ZER
1	EA	HD THRESHOLD	655A-V3-226	A	ZER

Hardware Group No. 07 - BES
Provide each SGL door(s) with the following:

1	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	PANIC HARDWARE	99-EO-SNB	626	VON
1	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
1	EA	SURFACE CLOSER	4040XP SCUSH SRI TBSRT	689	LCN
1	EA	PA MOUNTING PLATE - AS REQUIRED	4040XP-18PA SRI	689	LCN
1	EA	CUSH SHOE SUPPORT - AS REQUIRED	4040XP-30	689	LCN
1	EA	BLADE STOP SPACER - AS REQUIRED	4040XP-61	689	LCN
1	EA	SEALS	BY DOOR/ FRAME MANUF.		B/O
1	EA	DOOR SWEEP	39A	A	ZER
1	EA	HD THRESHOLD	655A-V3-226	A	ZER

SECTION 08710

DOOR HARDWARE

Hardware Group No. 08 - BES
Provide each SGL door(s) with the following:

1	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	PANIC HARDWARE	99-EO-SNB	626	VON
1	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
1	EA	SURFACE CLOSER	4040XP SCUSH TBSRT	689	LCN
1	EA	PA MOUNTING PLATE - AS REQUIRED	4040XP-18PA	689	LCN
1	EA	CUSH SHOE SUPPORT - AS REQUIRED	4040XP-30	689	LCN
1	EA	BLADE STOP SPACER - AS REQUIRED	4040XP-61	689	LCN
1	EA	SEALS	BY DOOR/ FRAME MANUF.		B/O

Hardware Group No. 09 - BES
Provide each PR door(s) with the following:

6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
2	EA	MANUAL FLUSH BOLT	FB458	626	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	STOREROOM W/DEADBOLT	L9480T 06N	626	SCH
1	EA	FISC PERMANENT CORE	23-030 VKC	626	SCH
1	EA	LOCK GUARD	LG10	630	IVE
1	EA	SURFACE CLOSER	4040XP SCUSH SRI TBSRT (ACTIVE LEAF ONLY)	689	LCN
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS	630	IVE
1	EA	GASKETING SET	188SBK 18FT PSA	BK	ZER
2	EA	DOOR SWEEP	39A	A	ZER
1	EA	ASTRAGAL	41AA 84" (2134MM)	AA	ZER
1	EA	HD THRESHOLD	655A-V3-226	A	ZER
		NOTE:	FURNISH 5BB1HW 5" X 4.5" HINGES @ DOORS OVER 3'0" WIDE		

Hardware Group No.10 - BES
Provide each SGL door(s) with the following:

		NOTE:	REUSE EXISTING HINGES		
		NOTE:	REUSE EXISTING LOCK		
1	EA	ELECTRIC STRIKE - FAIL SECURE VOLTAGE AS REQUIRED - SGL DOOR - HMF	6211 FSE DS CON 12/16/24/28 VAC/VDC	630	VON
1	EA	SURF. AUTO OPERATOR WITH MOUNTING PLATE - VOLTAGE - AS REQUIRED	9531 MS 115V	ANCLR	LCN
2	EA	ACTUATOR, WALL MOUNT	8310-853	630	LCN

1	EA	KICK PLATE	8400 10" X 1 1/2" LDW B-CS	612	IVE
1	EA	FLOOR OR WALL STOP AS REQUIRED	FS436	626	IVE
1	EA	GASKETING SET	188SBK 18FT PSA	BK	ZER

INSTALLATION NOTE: REUSE EXISTING DOOR, MODIFY FRAME FOR NEW HARDWARE AS REQUIRED.

OPERATIONAL DESCRIPTION: ENTRANCE BY ACTUATOR OR MANUAL LEVER. ACTUATOR OPERATES AUTO OPERATOR. AUTO OPERATOR UNLOCKS ELECT STRIKE.

Hardware Group No. 11 - BES
Provide each SGL door(s) with the following:

		NOTE:	NEW DOOR / EXISTING FRAME - REUSE EXISTING HDW		

Hardware Group No. 12 - BES
Provide each SGL door(s) with the following:

3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	639	IVE
1	EA	POWER TRANSFER	EPT10 CON	695	VON
1	EA	EU MORTISE LOCK	L9092TEU 06N CON 12/24 VDC	612	SCH
1	EA	FISC PERMANENT CORE	23-030 VKC	606	SCH
1	EA	SURFACE CLOSER	4040XP EDA MC TBWMS	US11	LCN
1	EA	KICK PLATE	8400 10" X 1 1/2" LDW B-CS	612	IVE
1	EA	DOOR STOP - AS REQUIRED	FS436	612	IVE
1	EA	GASKETING SET	188SBK 18FT PSA	BK	ZER
1	EA	WIRE HARNESS CONNECTOR IN DOOR - LENGTH AS REQUIRED	CON-50		SCH
1	EA	WIRE HARNESS CONNECTOR - IN FRAME TO POWER SUPPLY	CON-6W		SCH
1	EA	REMOTE RELEASE	BY SECTION 28 13 00		B/O
1	EA	CREDENTIAL READER	BY SECTION 28 13 00		B/O
1	EA	DOOR CONTACT	679-05	WHT	SCE
1	EA	POWER SUPPLY	BY SECTION 28 13 00		B/O

OPERATIONAL DESCRIPTION: ENTRANCE BY CREDENTIAL READER OR MANUAL KEY OVER-RIDE. REMOTE RELEASE TO UNLOCK DOOR ALLOWING ENTRY. ALWAYS FREE EGRESS. FAIL SECURE.

END OF SECTION

SECTION 08800

GLAZING

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Glass and plastic glazing.
B. Glazing compounds and accessories.

1.2 RELATED SECTIONS
A. Section 07900 - Joint Sealers: Sealant and back-up material.
B. Section 08410 - Metal-Framed Storefronts.

1.3 REFERENCES
A. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings, Safety Performance Specifications and Methods of Test; 1984 (R1994).
B. ASTM C 864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 1999.
C. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants; 2002.
D. ASTM C 1036 - Standard Specification for Flat Glass; 2001.
E. ASTM C 1048 - Standard Specification for Heat-Treated Flat Glass--Kind HS, Kind FT Coated and Uncoated Glass; 1997b.
F. ASTM C 1193 - Standard Guide for Use of Joint Sealants; 2000.
G. GANA (GM) - GANA Glazing Manual; Glass Association of North America; 1997.
H. GANA (SM) - FGMA Sealant Manual; Glass Association of North America; 1990.

1.4 PERFORMANCE REQUIREMENTS
A. Provide glass and glazing materials for continuity of building enclosure vapor retarder and air barrier:
   1. In conjunction with materials described in Section 07260 and 07900.
   2. To utilize the inner pane of multiple pane sealed units for the continuity of the air barrier and vapor retarder seal.
   3. To maintain a continuous air barrier and vapor retarder throughout the glazed assembly from glass pane to heel bead of glazing sealant.

1.5 SUBMITTALS
A. See Section 01300 - Administrative Requirements, for submittal procedures.
B. Product Data on Glass Types: Provide structural, physical and environmental characteristics, size limitations, and special handling or installation requirements.
C. Product Data on Glazing Compounds: Provide chemical, functional, and environmental characteristics, limitations, special application requirements. Identify available colors.
D. Samples: Submit two samples 12 x 12 inch in size of glass units.
E. Certificates: Certify that products meet or exceed specified requirements.
F. Manufacturer's Certificate: Certify that sealed insulated glass meets or exceeds specified requirements.

1.6 QUALITY ASSURANCE
A. Perform Work in accordance with GANA Glazing Manual and FGMA Sealant Manual for glazing installation methods. Maintain one copy on site.
B. Installer Qualifications: Company specializing in performing the work of this section with minimum five years documented experience.

1.7 PRE-INSTALLATION MEETING
A. Convene one week before starting work of this section.

1.8 ENVIRONMENTAL REQUIREMENTS

A. Do not install glazing when ambient temperature is less than 50 degrees F.
B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.9 WARRANTY

A. See Section 01780 - Closeout Submittals, for additional warranty requirements.
B. Provide a five year warranty to include coverage for sealed glass units from seal failure, interpane dusting or misting, and replacement of same.

PART 2 – PRODUCTS

2.1 FLAT GLASS MATERIALS

A. Manufacturers:
   1. Guardian Industries Corporation: www.guardian.com.
   2. Pilkington Building Products North America: www.pilkington.com.
   3. Visteon Glass Systems: www.visteon.com
   4. Substitutions: Refer to Section 01600 - Product Requirements.
B. Exterior Glass (Type E-1): Insulated, Clear, Fully-tempered Vision Glass
   1. Basis of Design: Solarban 60 (Low E coating) on Solorgray 6mm (2); Air 1/2" (12.7mm); 1/4" (6mm) Clear Glass.
      a. Indoor lite – Clear Glass.
      b. Outdoor lite – Solorgray with a second surface Solorban 60.
         1) Design intent is to match to the existing window tint.
         2) Contractor to verify in-field.
      c. All surfaces of exposed lites to be fully, horizontally tempered and comply with ASTM E774 and ASTM E773;
      d. Glazing unit to provide the following:
         1) Thickness: 1”
         2) Light Transmission: 35%
         3) Winter U-Value: 0.29
         4) Summer U-Value: 0.27
         5) Shading Coefficient: 0.29
         6) Solar heat gain Coefficient: 0.25
      e. Typical Vision glass for all exterior applications.
C. Vision Glass (Type I-1): Clear; fully tempered with horizontal tempering.
   1. Comply with ASTM C 1036, Type I, transparent flat, Class 1 clear, Quality Q3 (glazing select) and ASTM C 1048.
   2. Comply with ANSI Z97.1.
D. Exterior Laminated Glass (Type E-2):
   1. Basis of Design: Solarban 60 (Low E coating on surface 2) on ¼” (6mm) clear glass; ½” air space; 7/16” clear laminated glass.
   2. Indoor lite – 7/16” clear laminated glass (3/16" Clear - 0.060" Clear PVB - 3/16" Clear).
   3. Outdoor lite – Clear glass with Solorban 60 on second surface.
   4. All surfaces of exposed lites to be fully, horizontally tempered and comply with ASTM E774 and ASTM E773;
   5. Glazing unit to provide the following:
      a. Thickness: 1.151”
      b. Light Transmission: 69%
      c. Winter U-Value: 0.28
      d. Solar heat Gain Coefficient: 0.39

2.2 GLAZING COMPOUNDS

A. Manufacturers:
   1. Dow Corning Corp: www.dowcorning.com
   2. GE Plastics: www.geplastics.com
   3. Pecora Corporation: www.Pecora.com
   4. Substitutions: Refer to Section 01600 - Product Requirements.

B. Silicone Sealant: Single component; chemical curing; capable of water immersion without loss of properties; non-bleeding, non-staining; ASTM C 920, Type S, Grade NS, Class 25, Uses M, A, and G; cured Shore A hardness of 15 to 25; color as selected.

2.3 GLAZING ACCESSORIES

A. Setting Blocks: Neoprene, 80 to 90 Shore A durometer hardness, ASTM C 864 Option I. Length of 0.1 inch for each square foot of glazing or minimum 4 inch x width of glazing rabbet space minus 1/16 inch x height to suit glazing method and pane weight and area.

B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness, ASTM C 864 Option I. Minimum 6 inch long x one half the height of the glazing stop x thickness to suit application, self adhesive on one face.

C. Glazing Tape: Preformed butyl compound with integral resilient tube spacing device; 10 to 15 Shore A durometer hardness; coiled on release paper; 3/8 inch size; black color.

2.4 GLAZING COMPOUNDS

A. Manufacturers:
   1. Dow Corning Corp: www.dowcorning.com
   2. GE Plastics: www.geplastics.com
   3. Pecora Corporation: www.Pecora.com
   4. Substitutions: Refer to Section 01600 - Product Requirements.

B. Silicone Sealant: Single component; chemical curing; capable of water immersion without loss of properties; non-bleeding, non-staining; ASTM C 920, Type S, Grade NS, Class 25, Uses M, A, and G; cured Shore A hardness of 15 to 25; color as selected.

2.5 GLAZING ACCESSORIES

A. Setting Blocks: Neoprene, 80 to 90 Shore A durometer hardness, ASTM C 864 Option I. Length of 0.1 inch for each square foot of glazing or minimum 4 inch x width of glazing rabbet space minus 1/16 inch x height to suit glazing method and pane weight and area.

B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness, ASTM C 864 Option I. Minimum 6 inch long x one half the height of the glazing stop x thickness to suit application, self adhesive on one face.

C. Glazing Tape: Preformed butyl compound with integral resilient tube spacing device; 10 to 15 Shore A durometer hardness; coiled on release paper; 3/8 inch size; black color.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Verify that openings for glazing are correctly sized and within tolerance.

B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and ready to receive glazing.

3.2 PREPARATION

A. Clean contact surfaces with solvent and wipe dry.

B. Install sealants in accordance with ASTM C 1193 and FGMA Sealant Manual.

3.3 INSTALLATION - INTERIOR DRY METHOD (TAPE AND TAPE)

A. Cut glazing tape to length and set against permanent stops, projecting 1/16 inch (1.6 mm) above sight line.
B. Place setting blocks at 1/4 points with edge block no more than 6 inches from corners.
C. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.
D. Place glazing tape on free perimeter of glazing in same manner described above.
E. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.
F. Knife trim protruding tape.

3.4 CLEANING

A. Remove glazing materials from finish surfaces.
B. Remove labels after Work is complete.
C. Clean glass and adjacent surfaces.

3.5 PROTECTION OF FINISHED WORK

A. After installation, mark pane with an 'X' by using removable plastic tape or paste.

END OF SECTION

SECTION 09260

GYPSUM BOARD ASSEMBLIES

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Metal stud wall framing.
B. Metal channel ceiling framing.
C. Gypsum wallboard.
D. Joint treatment and accessories.

1.2 RELATED SECTIONS
A. Section 06100 – Rough Carpentry: Building framing system and Gypsum sheathing.
B. Section 06114 - Wood Blocking and Curbing: Wood blocking for support of wall-mounted equipment.

1.3 REFERENCES
A. Unless noted otherwise, the most current issue of the reference shall be used.
B. ASTM C 645 - Standard Specification for Nonstructural Steel Framing Members.
C. ASTM C 665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
D. ASTM C 754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
E. Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
F. GA-600 - Fire Resistance Design Manual; Gypsum Association.

1.4 SUBMITTALS
A. See Section 01300 - Administrative Requirements, for submittal procedures.
B. Product Data: Provide data on metal framing, gypsum board, accessories, and joint finishing system.
C. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.

1.5 QUALITY ASSURANCE
A. Perform in accordance with ASTM C 840. Comply with requirements of GA-600 for fire-rated assemblies.
B. Applicator Qualifications: Company specializing in performing gypsum board application and finishing, with minimum five years of documented experience.

1.6 REGULATORY REQUIREMENTS
A. Conform to applicable code for fire rated assemblies as indicated on drawings.

PART 2 – PRODUCTS

2.1 METAL FRAMING MATERIALS
A. Metal Framing Manufacturers:
   1. Clark Dietrich Building Systems; www.clarkdietrich.com
   2. Marino-Ware; www.marinoware.com.
   3. Telling Industries; www.buildstrong.com
   4. Substitutions: See Section 01600 - Product Requirements.
B. Metal Framing Connectors and Accessories:
   1. Same manufacturer as framing.
C. Non-Load bearing Framing System Components: ASTM C 645; galvanized sheet steel, of size and properties necessary to comply with ASTM C 754 for the spacing indicated unless exceeded herein, with maximum deflection of wall framing of L/240 at 5 psf. All interior framing shall be a minimum of 20 gauge.
   1. Studs: C shaped with knurled faces.

2. Runners: U shaped, sized to match studs.
3. Ceiling Channels: C shaped.
4. Furring: Hat-shaped sections, minimum depth of 7/8 inch.

D. Shaft Wall Studs and Accessories: ASTM C 645; galvanized sheet steel, of size and properties necessary to comply with ASTM C 754 and specified performance requirements.
E. Ceiling Hangers: Type and size as specified in ASTM C 754 for spacing required.
F. Partition Head to Structure Connections: Provide mechanical anchorage devices that accommodate deflection using slotted holes, screws and anti-friction bushings, preventing rotation of studs while maintaining structural performance of partition.
   1. Material: ASTM A 653/A 653M steel sheet, SS Grade 50, with G60/Z180 hot dipped galvanized coating.

2.2 GYPSUM BOARD MATERIALS

A. Manufacturers:
   1. Georgia Pacific Gypsum Corporation; www.gp.com.
   2. National Gypsum Company; www.nationalgypsum.com.
   3. USG Corporation; www.usg.com.
   4. Lafarge North America Inc.; www.lafargenorthamerica.com
   5. Substitutions: See Section 01600 - Product Requirements.
B. Gypsum Wallboard: ASTM C 36/C 36M and ASTM C 1396/C 1396M. Sizes to minimize joints in place; ends square cut.
   1. Thickness: 5/8 inch.
   2. Edges: Tapered.
C. Water-Resistant Gypsum Backing Board: ASTM C 630/C 630M and ASTM C 1396/C 1396M; ends square cut.
D. Fiber Reinforced Gypsum Board for Partition Walls: Laminated ply panel with reinforced gypsum core with multiple ply abrasion resistant paper on front, back and long edges
   1. Thickness: 5/8 in.
   2. Width: 4 ft.
   3. Length: maximum available length in place
   4. Edges: ends square cut, beveled edges
   5. Impact Resistance: Board shall show no failure and withstand 17 impacts when tested in accordance with ASTM E 695, modified.
   6. Indentation Resistance: Not less than the following loads to produce the indicated depth of surface indentation when tested in accordance with ASTM D 1037, modified:
      a. 0.100 in.: 232 lbs.
   7. 3M Surface Abrasion Resistance: Not greater than the following depths when tested using the indicated number of cycles in accordance with ASTM D 4977, modified:
      a. 100: 0.000 in.
   8. Taber Surface Abrasion Resistance: Not greater than the following depths when tested using the indicated number of cycles in accordance with ASTM D 4060, modified:
      a. 50: 0.004 in.
   9. Impact/Penetration Resistance Rating: Not less than 36 ft.-lbs. When tested in accordance with ASTM D 2394, modified.

2.3 ACCESSORIES

A. Acoustic Insulation: ASTM C 665; preformed glass fiber, friction fit type, unfaced. Thickness of 3-1/2 inches unless indicated otherwise.
B. Acoustic Sealant: Non-hardening, non-skinning, for use in conjunction with gypsum board.
C. Finishing Accessories: ASTM C 1047, galvanized steel or rolled zinc, unless otherwise indicated.
D. Joint Materials: ASTM C 475 and as recommended by gypsum board manufacturer for project conditions.
   1. Tape: 2 inch wide, creased paper tape for joints and corners, except as otherwise indicated.
E. Screws: ASTM C 1002; self-piercing tapping type; cadmium-plated for exterior locations.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Verify that project conditions are appropriate for work of this section to commence.

3.2 FRAMING INSTALLATION

A. Metal Framing: Comply with ASTM C 754 and manufacturer's instructions.
B. Suspended Ceilings and Soffits: Space framing and furring members as indicated.
   1. Level ceiling system to a tolerance of 1/1200.
   2. Laterally brace entire suspension system.
C. Studs: Space studs as permitted by standard.
   1. Extend partition framing to structure where indicated and to ceiling in other locations.
   2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
   3. Partitions Terminating at Structure: Attach top runner to structure, maintain clearance between top of studs and structure, and connect studs to track using specified mechanical devices in accordance with manufacturer's instructions; verify free movement of top of stud connections; do not leave studs unattached to track.
D. T intersections: Construct T intersections by using minimum of three studs with top, bottom and intermediate blocking or four full studs. Lock all walls together by fastening framing members together at 16 inches on center vertically. Walls secured through Gypsum materials only shall not be permitted.
E. Corners: Construct corners using minimum of three studs with top, bottom and intermediate blocking or four full studs. Lock all walls together by fastening framing members together at 16 inches on center vertically. Walls secured through Gypsum materials only shall not be permitted.
F. Openings: Install minimum double studs at wall openings, sides, top and bottom at door and window jambs and all other openings.
G. Standard Wall Furring: Install at concrete and masonry walls scheduled to receive gypsum board, not more than 4 inches from floor and ceiling lines and abutting walls. Secure in place on alternate channel flanges at maximum 24 inches on center.
   1. Orientation: Vertical.
   2. Spacing: As indicated.
H. Acoustic Furring: Install resilient channels at maximum 24 inches on center. Locate joints over framing members.
I. Furring for Fire Ratings: Install as required for fire resistance ratings indicated and to GA-600 requirements.
J. Blocking: Install blocking for support of plumbing fixtures, toilet partitions, wall cabinets, wood frame openings, toilet accessories, hardware, and other wall mounted items. Comply with Section 06100 for wood blocking.

3.3 ACOUSTIC ACCESSORIES INSTALLATION

A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.
B. Acoustic Sealant: Install in accordance with manufacturer's instructions.

3.4 GYPSUM BOARD INSTALLATION

A. Comply with ASTM C 840. Install to minimize butt end joints, especially in highly visible locations.
B. Single Layer Non-Rated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
C. Single Layer Fire-Rated: Install gypsum board vertically, with ends and edges occurring over firm bearing.
D. Installation on Metal Framing: Use screws for attachment of all gypsum board.

3.5 INSTALLATION OF TRIM AND ACCESSORIES

A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
   1. Not more than 30 feet apart on walls and ceilings over 50 feet long.
B. Corner Beads: Install at external corners, using longest practical length.
C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials and as indicated on drawings.

3.6 JOINT TREATMENT

A. Finish gypsum board in scheduled areas in accordance with levels defined in ASTM C 840 and as scheduled below.
B. Fill and finish joints and corners of cementitious backing board as recommended by manufacturer.

3.7 TOLERANCES

A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

3.8 FINISH LEVEL SCHEDULE

A. Level 1: Above finished ceilings concealed from view.
B. Level 2: Utility areas and areas behind cabinetry.
C. Level 3: Walls scheduled to receive textured wall finish.
D. Level 4: Walls and ceilings scheduled to receive flat or eggshell paint finish.
E. Level 5: Walls and ceilings scheduled to receive semi-gloss or gloss paint finish.

END OF SECTION

SECTION 09650

RESILIENT FLOORING

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Resilient base.
B. Installation accessories.
C. Subfloor preparation.

1.2 RELATED SECTIONS
A. Section 06100 - Rough Carpentry; subflooring.

1.3 REFERENCES
A. Unless noted otherwise, the most current issue of the reference shall be used.
B. ASTM F 1066 - Standard Specification for Vinyl Composition Floor Tile.
C. FS RR-T-650 - Treads, Metallic and Nonmetallic, Skid Resistant; Federal Specifications and Standards.

1.4 SUBMITTALS
A. See Section 01300 - Administrative Requirements, for submittal procedures.
B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
C. Selection Samples: Submit manufacturer's complete set of color samples for Architect's initial selection.
D. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.

1.5 DELIVERY, STORAGE, AND PROTECTION
A. Deliver materials in labeled packages. Store and handle in strict compliance with manufacturer's recommendations. Protect from damage due to weather, excessive temperatures, and construction operations.
B. Deliver materials sufficiently in advance of installation to condition materials to room temperature prior to installation.
C. Protect roll materials from damage by storing on end.

1.6 QUALITY ASSURANCE
A. Manufacturer: Provide resilient flooring manufactured by a firm with a minimum of 10 years experience in the fabrication of resilient flooring of types equivalent to those specified. Manufacturers proposed for use, which are not named in this Section, shall submit evidence of ability to meet performance requirements specified not less than 10 days prior to bid date.
B. Color Matching: Provide resilient flooring products, including wall base and accessories, from one manufacturer to ensure color matching.
C. Manufacturer capable of providing field service representation.
D. Installer's Qualifications: Installer experienced (minimum of 2 years) to perform work of this section who has specialized in the installation of work similar to that required for this project and who is acceptable to the product manufacturer.
E. Materials: For each type of material required for the work of this Section, provide primary materials which are the products of one manufacturer. Provide secondary materials which are acceptable to the manufacturer of the primary materials. Comply with applicable regulations regarding VOC (volatile organic compound) content of adhesives.

1.7 ENVIRONMENTAL REQUIREMENTS
A. Maintain temperature in storage area between 55 degrees F and 90 degrees F.
B. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Maintain a temperature of 68 degrees F plus or minus 5 degrees F in spaces to receive resilient flooring. Specified temperature shall be maintained at least 48 hours before, during, and 48 hours after installation.

1.8 WARRANTY

A. Provide manufacturer's standard one-year warranty against defects in manufacturing and workmanship of resilient flooring products. Provide manufacturer's standard limited wear warranty/conductivity warranty as specified under each product as applicable.

1.9 EXTRA MATERIALS

A. See Section 01600 - Product Requirements, for additional provisions.
B. Provide 25 lineal feet of base - type and color specified.

PART 2 – PRODUCTS

2.1 MATERIALS - BASE

A. Manufacturers:
   1. Armstrong World Industries, Inc.; www.armstrong.com
   2. Flexco Floors; www.flexcofloors.com
   3. Burke Flooring: www.burkeflooring.com
   4. Johnsonite, Inc.; www.johnsonite.com
   5. Roppe Corp.; www.roppe.com
   6. Nora: www.norarubber.com
   7. Substitutions: See Section 01600 - Product Requirements.
B. Resilient Base: ASTM F 1861, Type TS rubber, vulcanized thermoset; top set Style A and as follows:
   1. Profile: **Cove**
   2. Height: **4 inch.**
   3. Thickness: 0.125 inch thick.
   4. Finish: Satin.
   5. Length: Roll.
   6. Color: Color as selected from manufacturer's standards.
   7. Accessories: Premolded external corners, internal corners, and end stops.

2.2 ACCESSORIES

A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.
B. Primers and Adhesives: Waterproof; types recommended by flooring manufacturer.
C. Moldings and Edge Strips: Metal unless noted otherwise.
D. Filler for Coved Base: Plastic.
E. Sealer and Wax: Types recommended by flooring manufacturer

PART 3 – EXECUTION

3.1 INSTALLATION - BASE

A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.
B. Install base on solid backing. Bond tightly to wall and floor surfaces.

3.2 CLEANING

A. Remove excess adhesive from floor, base, and wall surfaces without damage.

3.3 PROTECTION OF FINISHED WORK

A. Prohibit traffic on resilient flooring for 48 hours after installation.

END OF SECTION

SECTION 09685

CARPET TILE

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Carpet tile, trowelable adhesives.
B. Carpet tile, non-trowelable adhesives.

1.2 REFERENCES
A. Unless noted otherwise, the most current issue of the Reference shall be used.
B. ASTM D 2859 – Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering materials.
C. ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
D. ASTM E 648 – Standard test Methods for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.
E. CRI 104 - Standard for Installation of Commercial Textile Floorcovering Materials; Carpet and Rug Institute.
F. CRI (GLA) – Green Label testing Program – Approved Adhesive Products; www.carpet-rug.com.
G. CRI (GLC) – Green Label Testing Program – Approved Product Categories for Carpet; www.carpet-rug.com.
H. CRI (GLP) – Green Label Plus Carpet Testing Program – Approved Products; www.carpet-rug.org.
I. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; National Fire Protection Association.

1.3 SUBMITTALS
A. See Section 01300 - Administrative Requirements, for submittal procedures.
B. Shop Drawings: Indicate layout of joints, direction of carpet pile, and tile color locations.
C. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.
D. Samples: Submit two carpet tiles illustrating color and pattern design for each carpet color selected by Architect.
E. Manufacturer’s Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention
F. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.
G. For initial selection of colors and patterns, submit samples in form of actual sections of carpet tile including accessories, showing full range of colors and patterns available, for each type of carpet tile required.
H. Submit manufacturer’s certified test results to show that carpet meets or exceeds product performance specification criteria for carpet testing requirements (i.e. see section 2.3 flame, smoke, Aachen test, etc).

1.4 QUALITY ASSURANCE
A. Manufacturer’s Qualifications: Company specializing in manufacturing specified carpet tile with minimum three years documented experience.
B. Installers shall have documented five year's experience as an Installer of at least 10 projects of similar size and complexity to this project. Workmen shall be experienced and skilled craftsmen.
C. Source Quality Control: Prior to carpet tiles being shipped to project, ensure that manufacturer has tested all carpet and provided written certification that all carpet construction meets or exceeds each minimum of the project specifications.

1.5 ENVIRONMENTAL REQUIREMENTS
A. Store materials in area of installation for minimum period of 24 hours prior to installation.

1.6 EXTRA MATERIALS

A. See Section 01600 - Product Requirements, for additional provisions.
B. Provide ten (10) carpet tiles of each color and pattern selected.

1.7 DELIVERY, STORAGE, AND PROTECTION

A. Deliver carpeting materials in sealed cartons for carpet tile and sealed containers for related materials. Deliver, store and handle all materials in a manner to prevent damage to materials and previous construction. Store in a safe, dry location, out of the way of other construction as directed. Material must be stored at least 68 degree F. (20 degree C.) for 3 days prior to installation.

1.8 WARRANTY

A. Manufacturer's Warranty:
   1. Provide warranties by Carpet Manufacturer agreeing to replace defective materials during one (1) year warranty period following substantial completion. Also submit the following agreed upon warranties (chair pads not required):
   2. Wear - Surface fiber wear shall not be more than 10% by weight in 15 years.
   3. Static - Carpet will remain static generation at less than 3.0 kV at 70º F, and 20% R.H. for a period no less than 15 years.
   4. No edge ravel, backing separation for a period no less than 15 years
   5. No Dimensional Instability, i.e. shrinkage, stretching, curling and doming which adversely affect the ability of the tile to lay flat for a period no less than 15 years. See Aachen Test.
   6. Antimicrobial preservation properties warranted to be ≥ 90% effective for a period no less than 15 years.
B. Installing contractor shall rework any defective carpet handling or installation workmanship during one (1) year warranty period following substantial completion.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Basis of Design:
   1. Tandus Centiva; www.tandus-centiva.com.
B. Or Equal from Acceptable Manufacturers:
   1. Interface; interface.com
   2. Mohawk Group; www.mohawkgroup.com.
   3. Shaw Contract; www.shawcontract.com
   4. Substitutions: See Section 01600 - Product Requirements.
C. Products indicated are provided by specified manufacturer. All acceptable manufacturers shall provide products equal in color range, pattern range, performance data, and style to those specified and shall meet or exceed all minimum specifications listed.

2.2 MATERIALS

A. Basis of Design Carpet Tile: Interface - Product must meet or exceed all of the following minimum specifications:

B. **(CPT-1)** Basis of Design Carpet Tile: Tandus Centiva. Product must meet or exceed all of the following minimum specifications:
   1. Pattern/Color: Assertive Action #04837, Forge #26213 with ER3 backing, or approved equal.
   2. Installation Method: Ashlar.
   3. Tile Size: 24” x 24” tile module.
   4. Yarn System: TDX Nylon.
   5. Gauge: 1/10.
   6. Finish Pile Height: .187 inches avg.
   7. Face yarn weight: 29 oz/ sq yd.

8. Total Recycled Content: 49.3%.
9. CRI Green Label Plus: GLP1366.
10. ISO Requirements: Product must be produced by manufacturer that is ISO 9001 and ISO 14001 certified.

C. **CPT 2 (field at Bailly):**
1. Field Pattern/Color: AE311, Collelction: Aerial, Style#: 138830AK00, Color: 104673 Iron or approved equal.
2. Installation Method: **Ashlar**
3. Tile Size: 25cm x 1m
4. Yarn System: 100% recycled Content Type 6 Nylon
5. Construction: Tufted Textured Loop
6. Color System: 100% Solution Dyed
7. Finish Pile Height: 0.1 inches.
8. Pile Density: 5,567
9. Backing: GlasBac Tile
10. Soil Release / Stain Protection: Protekt
11. Lifetime Anti-Microbial: Intercept
12. Total Recycled Content: 76%
13. CRI Green Label Plus: #GLP0820
14. ISO Requirements: Product must be produced by manufacturer that is ISO 9001 and ISO 14001 certified.

D. **CPT 3 (accent at Bailly):**
1. Field Pattern/Color: AE311, Collection: Viva Colores Style#: 101153, Color: Cereza or approved equal.
2. Installation Method: **Ashlar**
3. Tile Size: 50cm x50cm
4. Yarn System: 100% recycled Content Type 6 Nylon
5. Construction: Tufted Textured Loop
6. Color System: 100% Solution Dyed
7. Finish Pile Height: 0.15 inches.
8. Pile Density: 6,416
9. Backing: GlasBac Tile
10. Soil Release / Stain Protection: Protekt
11. Lifetime Anti-Microbial: Intercept
12. Total Recycled Content: 82%
13. CRI Green Label Plus: #GLP0820
14. ISO Requirements: Product must be produced by manufacturer that is ISO 9001 and ISO 14001 certified.

2.3 REGULATORY REQUIREMENTS

A. Proposed flooring must meet CRI Green Label Plus, State of Washington Protocol Environmental Safety Test, and GSA Antimicrobial Certification.
B. Flammability Test Requirements:

Carpet Flammability	
1. Pill Test (ASTM D2859 or CPSC FF-1-70)	Passes
2. Radiant Panel Test (ASTM E648)	$\geq$ 0.45 watts/cm^2, Class 1
Smoke Density (ASTM E662)	$\leq$ 450 Flaming Mode
Dimensional Stability (Aachen Method Din 54318)	$\leq$ 0.1% change
Static Generation at 70º F (AATCC 134 w/ neolite)	$\leq$ 2.5 kV at 20% R.H.
Lightfastness (AATCC 16E)	4.0 after 60 hours
Crocking (AATCC 165)	4.0 wet, dry
Cold Water Bleed (AATCC 107)	4.0
Gas Fade (AATCC 23)	4.0
Ozone Fade (AATCC 109)	4.0
Antimicrobial (AATCC 174, Part II)	$\geq$ 95.0% reduction
Fungicidal (AATCC 174, Part III)	No growth
Soil/Stain Protection (AATCC 175-1991)	$\geq$ 8.0 on the Red 40 Stain Scale

2.4 TRIM AND ACCESSORIES

A. Sub-Floor Filler: White premix latex; type recommended by flooring material manufacturer.
B. Trowelable Adhesive Installation: Waterproof type recommended and approved by respective carpet manufacturer for use with their materials under site installation conditions. Low VOC adhesives required.
C. Edge Finishing: Provide rubber reducer/transition strip at all exposed edges. Color to be selected by Architect from manufacturer's full range.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Verify that sub-floor and wall surfaces are smooth and flat within manufacturer's tolerances and are ready to receive carpet tile.
B. Verify that sub-floor and wall surfaces are dust-free, and free of substances which would impair bonding of adhesive materials to sub-floor surfaces.
C. Verify that concrete sub-floor surfaces are ready for carpet tile installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within limits recommended by carpet tile manufacturer and adhesive materials manufacturer.
    1. Repeat tests until results indicate conditions are within manufacturer's tolerances.
D. Verify locations of existing floor-mounted utilities.
E. Thoroughly inspect all sub-floors before commencement work. Notify Owner in writing immediately of all conditions which will prevent producing satisfactory work.
F. Repair floor defects and irregularities prior to installation.
G. Installation of materials constitutes Contractor's acceptance of previous construction and his assumption of responsibility for all unacceptable finished work caused by previous conditions

3.2 PREPARATION

A. Before starting installation remove all paint, sealers or wax from sub-floor by sanding and scraping.
B. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler.
C. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.
D. Vacuum clean substrate.

3.3 INSTALLATION

A. Install carpet tile in accordance with manufacturer's instructions and CRI 104.
B. Blend carpet from different cartons to ensure minimal variation in color match.
C. Install tiles such that seams are not obvious in the finish work.
D. Provide an installation free of visual imperfections, adhesives, seam cement smears and other foreign matter.
E. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.
F. Set parallel to building lines, and center pattern within space.
G. Locate change of color or pattern between rooms under door centerline.
H. Fully adhere carpet tile to substrate.
I. Trim carpet tile neatly at walls and around interruptions.
J. Complete installation of edge strips, concealing exposed edges.

3.4 CLEANING

A. Upon completion of work thoroughly inspect entire installation. Remove all defective work and replace with perfect materials.
B. Cut off and trim all loose threads. Remove all visible adhesives, seam cement and scraps. Clean all carpet with an upright beater bar type vacuum cleaner.
C. Remove all rubbish, debris, containers and all excess materials not selected by Owner for its retention and legally dispose of off the Owner's premises.
D. Repair all damage to the Owner's property resulting from carpet work. Clean, repair or replace all damage as directed.
E. Clean and vacuum carpet surfaces. Leave premises in clean, accepted condition.

3.5 PROTECTION OF FINISHED WORK

A. Provide and maintain proper protection of finished carpet areas. Do not stack carpet tile cartons higher than is recommended by manufacturer.

END OF SECTION

SECTION 09900

PAINTS AND COATINGS

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Surface preparation.
B. Field application of paints, stains, varnishes, and other coatings.
C. See Schedule - Surfaces to be Finished, at end of Section.

1.2 REFERENCES
A. Unless noted otherwise, the most current issue of the reference shall be used.
B. ASTM D 16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications.

1.3 DEFINITIONS
A. Conform to ASTM D 16 for interpretation of terms used in this section.

1.4 SUBMITTALS
A. See Section 01300 - Administrative Requirements, for submittal procedures.
B. Samples: Submit two paper chip samples, 4 x 4 inch in size illustrating range of colors and textures available for each surface finishing product scheduled.

1.5 QUALITY ASSURANCE
A. Applicator Qualifications: Company specializing in performing the work of this section with minimum five years experience.

1.6 REGULATORY REQUIREMENTS
A. Comply with applicable code for flame and smoke rating requirements for products and finishes.

1.7 MOCK-UP
A. See Section 01400 - Quality Requirements, for general requirements for mock-up.
B. Provide 8’ x 8’ panel as directed by Architect, illustrating special coating color, texture and finish.
C. Provide door frame assembly illustrating paint color, texture and finish.
D. Approved mock-up may remain as part of the work. Rejected mock-up must be re-done.

1.8 DELIVERY, STORAGE, AND PROTECTION
A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.9 ENVIRONMENTAL REQUIREMENTS
A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
B. Do not apply exterior coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
C. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.
D. Minimum Application Temperature for Varnish Finishes: 65 degrees F for interior or exterior, unless required otherwise by manufacturer's instructions.
E. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

1.10 EXTRA MATERIALS

A. See Section 01600 - Product Requirements, for additional provisions.
B. Supply 1 gallon of each color; store where directed.
C. Label each container with color in addition to the manufacturer's label.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Paints:
   1. Glidden Professional; www.gliddenprofessional.com
   2. Benjamin Moore & Co.; www.benjaminmoore.com
   3. PPG Pittsburgh Paints: www.ppg.com
   4. Sherwin-Williams Co: www.sherwin-williams.com
B. Transparent Finishes:
   1. Glidden Professional; www.gliddenprofessional.com
   2. Benjamin Moore & Co.; www.benjaminmoore.com
   3. PPG Pittsburgh Paints: www.ppg.com
   4. Sherwin-Williams Co: www.sherwin-williams.com
C. Stains:
   1. Glidden Professional; www.gliddenprofessional.com
   2. Benjamin Moore & Co.; www.benjaminmoore.com
   3. PPG Pittsburgh Paints: www.ppg.com
   4. Sherwin-Williams Co: www.sherwin-williams.com
D. Primer Sealers:
   1. Glidden Professional; www.gliddenprofessional.com
   2. Benjamin Moore & Co.; www.benjaminmoore.com
   3. PPG Pittsburgh Paints: www.ppg.com
   4. Sherwin-Williams Co: www.sherwin-williams.com
E. Block Fillers:
   1. Glidden Professional; www.gliddenprofessional.com
   2. Benjamin Moore & Co.; www.benjaminmoore.com
   3. PPG Pittsburgh Paints: www.ppg.com
   4. Sherwin-Williams Co: www.sherwin-williams.com
F. Substitutions: See Section 01600 - Product Requirements.

2.2 PAINTS AND COATINGS – GENERAL

A. Paints and Coatings: Ready mixed, except field-catalyzed coatings. Prepare pigments:
   1. To a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating.
   2. For good flow and brushing properties.
   3. Capable of drying or curing free of streaks or sags.

2.3 PAINT SYSTEMS - EXTERIOR

A. Paint ME-OP-3A - Ferrous Metals, Unprimed, Alkyd, 3 Coat:
   1. One coat of alkyd primer.
      a. Glidden Professional: 4360-XXXX Devguard Low VOC Multi-Purpose Tank & Structural Primer.
      b. Benjamin Moore & Co.: P06 Super Spec HP® Alkyd Metal Primer
      c. Sherwin-Williams Kem Bond HS, B50WZ Series
   2. Semi-gloss: Two coats of alkyd enamel.
      a. Glidden Professional: GP2406-XXXX Fortis 350 Exterior 100 Percent Acrylic Semi-Gloss Finish.
      b. Benjamin Moore & Co.: Moorcraft Super Spec Latex House & Trim #170
      c. Sherwin-Williams A-100 Exterior Coating, A8 Series

B. Paint MgE-OP-3A - Galvanized Metals, Alkyd, 3 Coat:
   1. Galvanize primer.
      a. Glidden Professional: Devoe Coatings 4360 Devguard Low VOC Multi-Purpose Tank & Structural Primer.
      b. Benjamin Moore: Super Spec HP® Acrylic Metal Primer P04
      c. Sherwin Williams ProIndustrial ProCryl Metal Primer, B66-310 Series
   2. Gloss: Alkyd enamel.
      a. Glidden Professional: Devoe Coatings 4309 Devguard Rust Preventative Gloss Enamel.
      b. Benjamin Moore: Super Spec HP D.T.M. Alkyd Gloss Enamel #P26
      c. Sherwin-Williams ProIndustrial Industrial Urethane Alkyd Enamel, B54-150 Series
   3. Semi-gloss: Alkyd enamel.
      a. Glidden Professional: Devoe Coatings 4306 Devguard Rust Preventative Semi-Gloss Enamel.
      b. Benjamin Moore: Super Spec HP D.T.M. Alkyd Semi-Gloss #P24
      c. Sherwin-Williams Metalastic DTM Alkyd Enamel, B55 series

2.4 PAINT SYSTEMS – INTERIOR

A. Paint WI-OP-3L - Wood, Opaque, Latex, 3 Coat:
   1. Latex primer sealer.
      a. Glidden Professional: GP3210 Gripper Interior/Exterior Primer.
      b. Benjamin Moore: Fresh Start All Purpose 100% Acrylic Primer #046
      c. Sherwin-Williams: Problock Latex Primer/Sealer, B51W20
   2. Gloss: Two coats of latex enamel.
      a. Glidden Professional: GP3028 Ultra-Hide 250 Interior Gloss Paint.
      b. Benjamin Moore: Super Spec HP Acrylic Gloss Enamel #P28
      c. Sherwin-Williams: All Surface Enamel Latex Gloss, A41 Series
   3. Semi-gloss: Two coats of latex enamel.
      a. Glidden Professional: GP1416 Ultra-Hide 150 Interior Semi-Gloss Paint.
      b. Benjamin Moore: Super Spec Latex Semi-Gloss Enamel #276
      c. Sherwin-Williams: ProMar 400 Interior Latex Semi-Gloss, B31-4450 Series
   4. Eggshell: Two coats of latex enamel.
      a. Glidden Professional: GP1412 Ultra-Hide 150 Interior Eggshell Paint.
      b. Benjamin Moore: Super Spec Latex Eggshell Enamel #274
      c. Sherwin-Williams: ProMar 400 Interior Latex EgShel, B20-4450 Series
   5. Flat: Latex enamel.
      a. Glidden Professional: GP1210 Ultra-Hide 150 Interior Flat Paint.
      b. Benjamin Moore: Super Spec Latex Flat #275
      c. Sherwin-Williams: ProMar 400 Interior Latex Flat, B30-4450 Series

B. Paint WI-TR-VS - Wood, Transparent, Varnish, Stain:
   1. Filler coat.
   2. One coat of stain; All colors to be selected by Architect from manufacturer's full range-maximum 3 colors.
      a. Glidden Professional: GP1700V WoodPride Water-Based Interior Wood Stain.
      b. Benjamin Moore: Benwood® Interior Wood Finishes Waterborne Stain 205
      c. Sherwin-Williams: WoodClassics 250 Oil Stain, A49 Series
   3. Gloss: Two coats of varnish.
      a. Glidden Professional: GP1808 Woodpride Interior Gloss Water-Based Varnish.
      b. Benjamin Moore & Co.: Benwood Finishes® Polyurethane Finish High Gloss 428
      c. Sherwin Williams WoodClassics WB Polyurethane Gloss, A68V91
   4. Satin: Two coats of varnish.
      a. Glidden Professional: GP1802 Woodpride Interior Satin, Water-Based Varnish.
      b. Benjamin Moore & Co.: Benwood Finishes® Polyurethane Finish Low Lustre C435
      c. Sherwin Williams WoodClassics WB Polyurethane Satin, A68F90

C. Paint CI-OP-3L - Concrete/Masonry, Opaque, Latex, 3 Coat:
   1. Primer.
      a. Glidden Professional: GP3210 Gripper Interior /Exterior Primer
      b. Benjamin Moore: Fresh Start All Purpose 100% Acrylic Primer #046
      c. Sherwin-Williams: Problock Latex Primer/Sealer, B51W20
   2. Semi-gloss: Latex enamel.
      a. Glidden Professional: GP1416 Ultra-Hide 150 Interior Semi-Gloss Paint
      b. Benjamin Moore: Super Spec Latex Semi-Gloss Enamel #276
      c. Sherwin-Williams: ProMar 400 Interior Latex Semi-Gloss, B31-4450 Series
   3. Flat: Latex enamel.
      a. Glidden Professional: GP1210 Ultra-Hide 150 Interior Flat Paint
      b. Benjamin Moore: Super Spec Latex Flat #275
      c. Sherwin-Williams: ProMar 400 Interior Latex Flat, B30-4450 Series

D. Paint MI-OP-3A - Ferrous Metals, Unprimed, Alkyd, 3 Coat:
   1. One coat of alkyd primer.
      a. Glidden Professional: Devoe Coatings 4360 Devguard Low VOC Multi-Purpose Tank & Structural Prime.
      b. Benjamin Moore: P06 Super Spec HP® Alkyd Metal Primer
      c. Sherwin-Williams: Kem Bond HS Metal Primer, B50WZ Series
   2. Gloss: Two coats of alkyd enamel.
      a. Glidden Professional: Devoe Coatings 4309 Devguard Rust Preventative Gloss Enamel.
      b. Benjamin Moore: Super Spec HP D.T.M. Alkyd Gloss Enamel #P26
      c. Sherwin-Williams: ProIndustrial Industrial Urethane Alkyd Enamel, B54-150 Series
   3. Semi-gloss: Two coats of alkyd enamel.
      a. Glidden Professional: Devoe Coatings 4306 Devguard Rust Preventative Semi-Gloss Enamel.
      b. Benjamin Moore: Super Spec HP D.T.M. Alkyd Semi-Gloss #P24
      c. Sherwin-Williams: Metalastic DTM Alkyd Enamel, B55 Series

E. Paint MI-OP-2A - Ferrous Metals, Primed, Alkyd, 2 Coat:
   1. Touch-up with alkyd primer.
      a. Glidden Professional: Devoe Coatings 4360 Devguard Low VOC Multi-Purpose Tank & Structural Primer.
      b. Benjamin Moore: P06 Super Spec HP® Alkyd Metal Primer
      c. Sherwin-Williams: Kem Bond HS Metal Primer, B50WZ Series
   2. Gloss: Two coats of alkyd enamel.
      a. Glidden Professional: Devoe Coatings 4309 Devguard Rust Preventative Gloss Enamel.
      b. Benjamin Moore: Super Spec HP D.T.M. Alkyd Gloss Enamel #26
      c. Sherwin-Williams: ProIndustrial Industrial Urethane Alkyd Enamel, B54-150 Series
   3. Semi-gloss: Two coats of alkyd enamel.
      a. Glidden Professional: Devoe Coatings 4306 Devguard Rust Preventative Semi-Gloss Enamel.
      b. Benjamin Moore: Super Spec HP D.T.M. Alkyd Semi-Gloss #P24
      c. Sherwin-Williams: Metalastic DTM Alkyd Enamel, B55 Series

F. Paint GI-OP-3L - Gypsum Board/Plaster, Latex, 3 Coat:
   1. One coat of fast-drying latex primer sealer.
      a. Glidden Professional: 1000 High-Hiding Interior Primer.
      b. Benjamin Moore: Moorcraft Super Spec Latex Enamel Undercoater & Primer Sealer #253
      c. Sherwin-Williams: ProMar 400 Interior Latex Primer, B28W8400
   2. Semi-gloss: Latex enamel.
      a. Glidden Professional: GP1416 Ultra-Hide 150 Interior Semi-Gloss Paint.
      b. Benjamin Moore: Super Spec Latex Eggshell Enamel #274
      c. Sherwin-Williams: ProMar 400 Interior Latex Semi-Gloss, B31-4450 Series

3. Eggshell: Latex enamel.
   a. Glidden Professional: GP1412 Ultra-Hide 150 Interior Eggshell Paint.
   b. Benjamin Moore: Super Spec Latex Eggshell Enamel #274
   c. Sherwin-Williams: ProMar 400 Interior Latex EgShel, B20-4450 Series
4. Flat: Latex enamel.
   a. Glidden Professional: GP1210 Ultra-Hide 150 Interior Flat Paint.
   b. Benjamin Moore: Super Spec Latex Flat #275
   c. Sherwin-Williams: ProMar 400 Interior Latex Flat, B30-4450 Series

2.5 ACCESSORY MATERIALS

A. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified; commercial quality.
B. Patching Material: Latex filler.
C. Fastener Head Cover Material: Latex filler.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Verify that surfaces are ready to receive Work as instructed by the product manufacturer.
B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
C. Test shop-applied primer for compatibility with subsequent cover materials.
D. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
   1. Plaster and Gypsum Board: 12 Percent
   2. Masonry, Concrete and Concrete Masonry Unit: 12 Percent
   3. Interior Wood: 15 Percent, measured in accordance with ASTM D 4442.
   4. Concrete Floors: 8 Percent.

3.2 PREPARATION

A. Surface Appurtenances: Remove or mask electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.
B. Surfaces: Correct defects and clean surfaces which affect work of this section. Remove or repair existing coatings that exhibit surface defects.
C. Marks: Seal with shellac those which may bleed through surface finishes.
D. Impervious Surfaces: Remove mildew by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
E. Concrete and Unit Masonry Surfaces to be Painted: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.
F. Gypsum Board Surfaces to be Painted: Fill minor defects with filler compound. Spot prime defects after repair.
G. Galvanized Surfaces to be Painted: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
H. Uncoated Steel and Iron Surfaces to be Painted: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by hand wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Prime paint entire surface; spot prime after repairs.
I. Shop-Primed Steel Surfaces to be Finish Painted: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.

J. Interior Wood Items to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.
K. Interior Wood Items to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats. Prime concealed surfaces with gloss varnish reduced 25 percent with thinner.
L. Wood Doors to be Field-Finished: Seal wood door top and bottom edge surfaces with clear sealer.
M. Metal Doors to be painted: Prime metal door top and bottom edge surfaces.

3.3 APPLICATION

A. Apply products in accordance with manufacturer's instructions.
B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
C. Apply each coat to uniform appearance. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.
D. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

3.4 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

A. Refer to Section 15075 and Section 16075 for schedule of color coding of equipment, duct work, piping, and conduit.
B. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
C. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.5 CLEANING

A. Collect waste material, which may constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.6 SCHEDULE - SURFACES TO BE FINISHED

A. Do Not Paint or Finish the Following Items:
   1. Items fully factory-finished unless specifically noted.
   2. Fire rating labels, equipment serial number and capacity labels.
B. Paint the surfaces described below under Schedule - Paint Systems.
C. Mechanical and Electrical: Use paint systems defined for the substrates to be finished.
   1. Paint all insulated and exposed pipes occurring in finished areas to match background surfaces, unless otherwise indicated.
   2. Paint shop-primed items occurring in finished areas.
   3. Paint interior surfaces of air ducts and convector and baseboard heating cabinets that are visible through grilles and louvers with one coat of flat black paint to visible surfaces.
   4. Paint dampers exposed behind louvers, grilles, and convector and baseboard cabinets to match face panels.

3.7 SCHEDULE - PAINT SYSTEMS

A. Concrete, Concrete Block, Brick Masonry: Finish all surfaces exposed to view.
   1. Exterior: CE-OP-3A, flat.
   2. Interior: CI-OP-3L, semi-gloss.
B. Gypsum Board: Finish all surfaces exposed to view.
   1. Interior Ceilings and Bulkheads: GI-OP-3L, flat.
   2. Interior Walls: GI-OP-3A, semi-gloss.
C. Wood Doors: WI-TR-VS.
D. Steel Doors and Frames: Finish all surfaces exposed to view; MI-OP-3A, gloss.

E. Steel Fabrications: Finish all surfaces exposed to view.
   1. Exterior: ME-OP-3A, gloss; finish all surfaces, including concealed surfaces, before installation.
   2. Interior: MI-OP-3L, gloss.
F. Shop-Primed Metal Items: Finish all surfaces exposed to view.
   1. Finish the following items:
      a. Exposed surfaces of lintels.
      b. Elevator pit ladders.
      c. Exposed surfaces of steel stairs and railings.
      d. Mechanical equipment.
      e. Electrical equipment.

END OF SECTION