PROJECT MANUAL

for

OTSEGO COUNTY ROAD COMMISSION

REROOFING AND VESTIBULE RENOVATION

PROJECT NO. 0287-21

March 1, 2022

ANTHONY P. ESSON
ARCHITECT
PO BOX 479 GAYLORD, MICHIGAN 49734
TELEPHONE: (989) 732-0585

DOCUMENT 00 01 01

PROJECT TITLE PAGE

PROJECT NAME: OTSEGO COUNTY ROAD COMMISSION
Reroofing and Vestibule Renovation

OWNER: Otsego County Road Commission
669 W. McCoy Road
Gaylord, MI 49735
Contact: Kirk Harrier, Managing Director
Telephone: 989/732-5202

ARCHITECT: Anthony Esson, Architect

Mailing Address:
P.O. Box 479
Gaylord, MI 49734

Shipping Address:
2111 Forester Drive
Frederic, MI 49733

Contact: Anthony P. Esson, Architect, LEED AP
PH: 989-350-1827
tony@anthonyessonarchitect.com

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INVITATION TO BID

Project:

OTSEGO COUNTY ROAD COMMISSION
Reroofing and Vestibule Renovation

Owner:

Otsego County Road Commission
669 W. McCoy Road
Gaylord, MI 49735

Architect/Engineer:

Anthony P. Esson, Architect, PLLC
PO Box 479
Gaylord, MI 49734

Date: March 1, 2022

Otsego County Road Commission will receive Bids from Bidders in connection with a reroofing and vestibule renovation project at the Otsego County Road Commission building located at 669 W. McCoy Road, Gaylord, MI 49735.

Sealed Bids may be delivered in person to Otsego County Road Commission, c/o Kirk Harrier, Managing Director, 669 W. McCoy Road, Gaylord, MI 49735. Bids must be received prior to 1:30 PM local time on April 14, 2022. Bids will be opened publically and read aloud in the Commission's Meeting Room located in the Otsego County Road Commission building immediately following the closure of the bidding period. The Owner will not consider or accept a bid received after the date and time specified for bid submission. Post Bid Interviews with the apparent low Bidder(s) will be scheduled following receipt of Bids. All Bids will be evaluated at a later date.

There will be a Pre-Bid Meeting conducted by the Architect at 3:00 PM local time on March 30, 2022. The meeting will convene in the Commission's Meeting Room located in the Otsego County Road Commission building. The Pre-Bid Meeting will consist of a brief informational meeting followed by an opportunity for Bidders to examine the Project site. Attendance by Bidders is not mandatory but is strongly encouraged as there will be no other opportunity offered for Bidders to examine the project site.

The contract for work is expected to be awarded on or about April 21, 2022.

Bidding Documents will be available on or about March 14, 2022. Interested Bidders may view and download bidding documents at www.anthonyessonarchitect.com. Select Otsego County Road Commission Reroofing and Vestibule Renovation under the Bid Docs button.

Bidding Documents will also be on file at Builders Exchange Traverse City, Grand Rapids, Lansing, and Saginaw

A Bid security in the amount of no less than 5 percent of the Bid Sum in the form of a Bid Bond, or certified check payable to the Owner shall accompany each Bid. A personal or company check does not constitute a Bid security.

Refer to other bidding requirements described in Document 00 21 13.

Bids shall be submitted on the Bid Form provided in the Bidding Documents. Bidders may supplement this form as appropriate.

Bidders will be required to furnish Performance and Labor/Material Payment Bonds for this project.

Bids will be required to be submitted under a condition of irrevocability for a period of 60 days after submission.

The Owner reserves the right to accept or reject any or all Bids, either in whole or in part; to award the Contract to other than the lowest Bidder; to waive any irregularities and/or informalities; and in general, to make awards in any manner deemed to be in the best interest of the Owner.

END OF DOCUMENT

DOCUMENT 00 21 13

INSTRUCTIONS TO BIDDERS

1.1 SUMMARY

A. Document Includes:
1. Bid submission.
2. Intent.
3. Contract Time.
4. Definitions.
5. Contract Documents identification.
6. Availability of documents.
7. Examination of documents.
8. Inquiries and Addenda.
9. Product substitutions.
10. Site examination.
11. Prebid conference.
12. Subcontractors.
13. Submission procedure.
14. Bid ineligibility.
15. Bid security.
16. Performance assurance.
17. Bid Form requirements.
18. Fees for changes in the Work.
19. Bid Form signature.
20. Bid opening.
21. Duration of offer.
22. Acceptance of offer.

B. Related Documents:
1. Document 00 11 16 - Invitation to Bid.
2. Document 00 41 13 - Bid Form - Stipulated Sum (Trade Contract).

1.2 BID SUBMISSION

A. Bids signed and under seal, executed, and dated may be delivered in person to Otsego County Road Commission, c/o Kirk Harrier, Managing Director, 669 W. McCoy Road, Gaylord, MI 49735, until 1:30 PM local time on April 14, 2022.

B. Bids submitted after the above time will be returned to Bidder unopened.

C. Amendments to submitted Bids will be permitted when received in writing prior to bid closing and when endorsed by the same party or parties who signed and sealed the Bid.

D. Bidders may withdraw their Bid by written request at any time before bid closing.

E. Bids are to be hand delivered. Bids submitted by parcel courier will not be accepted.

1.3 INTENT

A. The intent of this Bid request is to obtain an offer to perform work to complete reroofing and renovation of the existing entry vestibule at the Otsego County Road Commission building for a Stipulated Price contract, in accordance with Contract Documents.

1.4 CONTRACT TIME

A. Identify Contract Time in the Bid Form. The completion date in the Agreement shall be the Contract Time added to the commencement date.

B. Contractor shall achieve Final Completion not later than sixty days after Substantial Completion. Damages as identified in the agreement apply.

1.5 DEFINITIONS

A. Bidding Documents: Contract Documents supplemented with Invitation To Bid, Instructions to Bidders, Information Available to Bidders, Bid Form, and bid securities, identified

B. Contract Documents: Defined in AIA Document A104-2017, including issued Addenda.

C. Bid: Executed Bid Form and required attachments submitted in accordance with these Instructions to Bidders.

D. Bid Price: Monetary sum identified by the Bidder in the Bid Form.

1.6 CONTRACT DOCUMENTS IDENTIFICATION

A. The Contract Documents are identified as Project No. 287-21 titled Otsego County Road Commission Reroofing and Vestibule Renovation as prepared by Anthony P. Esson, Architect.

1.7 AVAILABILITY OF DOCUMENTS

A. Bidding Documents may be obtained as stated in document 00 11 16 - Invitation to Bid.

B. Bidding Documents will be available on or about March 14, 2022. Interested Bidders may view and download bidding documents at www.anthonyessonarchitect.com. Otsego County Road Commission Reroofing and Vestibule Renovation under the Bid Docs button.

C. Bidding Documents will also be on file at Builders Exchange Traverse City, Grand Rapids, Lansing, and Saginaw.

D. Partial sets of Bidding Documents will not be issued to Bidders.

E. Bidding Documents are made available only for the purpose of obtaining offers for this Project. Their use does not grant a license for other purposes.

1.8 EXAMINATION OF DOCUMENTS

A. Bidders are responsible for full examination of the drawings, specifications, exhibits and any Addenda prior to submission of bids.

B. Upon receipt of Bidding Documents verify documents are complete. Notify Architect/Engineer if documents are incomplete.

C. Immediately notify Architect/Engineer upon finding discrepancies or omissions in Bidding Documents. When such discrepancies or omissions should be discovered through reasonable examination for the purpose of estimating and are not brought to the Architect's attention and clarified prior to bidding, Bidder shall include and/or shall be deemed to have included the higher quantity or quality of Product or material, and/or more labor intensive or costly installation in the Bid.

D. Carefully review Drawings and Specifications. Contractor is responsible for the entire Work identified in the Contract Documents without regard to the specific location of the information within the Contract Documents.

1.9 INQUIRIES AND ADDENDA

A. Direct questions in writing to Anthony Esson, at the office of the Architect/Engineer; Email tony@anthonyessonarchitect.com.

B. Verbal answers are not binding on any party.

C. Submit questions not less than 7 days before date set for receipt of Bids. Replies will be made by Addenda.

D. Addenda may be issued during bidding period. Addenda will be posted on the Construction Manager's website. Addenda become part of the Contract Documents. Include resultant costs in the Bid Price.

1.10 PRODUCT SUBSTITUTIONS

A. Refer to Section 01 60 00 - Product Requirements for substitution procedures.

B. Where Bidding Documents stipulate particular Products, substitution requests will be considered by Architect/Engineer up to 5 days before receipt of Bids.

C. With each substitution request, provide sufficient information for Architect/Engineer to determine acceptability of proposed products.

D. When a request to substitute a Product is made, Architect/Engineer may approve the substitution. Approved substitutions will be identified by Addenda.

E. In submission of substitutions to Products specified, Bidders shall include in their Bid, changes required in the Work, changes to Contract Time and Contract Price to accommodate such approved substitutions. Later claims by the Bidder for an addition to the Contract Time or Contract Price because of changes in Work necessitated by use of substitutions will not be considered.

1.11 SITE EXAMINATION

A. Examine Project site before submitting a Bid.

1.12 PREBID CONFERENCE

A. A Bidders conference is scheduled for 3:00 PM on March 30, 2022. The meeting will convene in the Commission Meeting Room located in the Otsego County Road Commission building at 669 W. McCoy Road, Gaylord, MI 49735. The Pre-Bid Meeting will consist of a brief informational meeting followed by an opportunity for Bidders to examine the project sites. No other opportunity to examine the project sites will be offered.

B. Attendance is not mandatory but is strongly encouraged as no other opportunity for site examination will be provided.

C. Representatives of the Architect/Engineer and Owner will be in attendance.

D. Information relevant to Bidding Documents will be issued by Addendum

1.13 SUBCONTRACTORS

A. The owner reserves the right to reject any proposed subcontractor(s) for reasonable cause.

B. Refer to AIA Document A104-2017 Standard Abbreviated Form of Agreement Between Owner and Contractor, as modified.

1.14 SUBMISSION PROCEDURE

A. Bidders shall be solely responsible for delivery of Bids in manner and time prescribed.

B. Submit one copy of executed offer on Bid Forms provided, signed and sealed with required security deposit in a closed opaque envelope, clearly identified with Bidder’s name, Project name, Specific Bid Category and Owner's name on the outside.

C. An abstract summary of submitted Bids will be made available to all Bidders following bid opening.

1.15 BID INELIGIBILITY

A. Bids that are unsigned, improperly signed or sealed, conditional, illegible, obscure, contain arithmetical errors, erasures, alterations, or irregularities of any kind, may be declared unacceptable at Owner’s discretion.

B. Bid Forms, Appendices, and enclosures which are improperly prepared may be declared unacceptable at Owner’s discretion.

C. Failure to provide security deposit, bonds or insurance requirements will invalidate the Bid at the discretion of the Owner.

1.16 SECURITY DEPOSIT

A. Bids shall be accompanied by security deposit as follows:
   1. Bid Bond in the amount of not less than five percent (5%) of the Bid Price on standard surety company form or;
   2. Certified check payable to Owner in the amount of five percent (5%) of the Bid Price.

B. Endorse Bid Bond in name of Otsego County Road Commission as obligee, signed and sealed by the principal (Contractor) and surety.

C. Endorse certified check in name of Otsego County Road Commission.

1.17 PERFORMANCE ASSURANCE

A. Accepted Bidder: Provide a Performance and Payment bond as described in AIA Document A104-2017.

B. Include the cost of performance assurance bonds in the Bid Sum.

1.18 BID FORM REQUIREMENTS

A. Complete requested information in the Bid Form and Bid Form Supplements.

1.19 FEES FOR CHANGES IN THE WORK

A. When the Architect/Engineer establishes that the method of valuation for Changes in the Work will be net cost plus a percentage fee in accordance with General Conditions, the percentage fee allowed for Overhead and Profit shall be Ten Percent (10%) on the net cost of work by the General Contractor, and Ten Percent (10%) on the gross cost of work by a Subcontractor.

1.20 BID FORM SIGNATURE

A. Sign Bid Form, as follows:
   1. Sole Proprietorship: Signature of sole proprietor in the presence of a witness who will also sign. Insert the words "Sole Proprietor" under the signature. Affix seal.
   2. Partnership: Signature of all partners in the presence of a witness who will also sign. Insert the word "Partner" under each signature. Affix seal to each signature.
   3. Corporation: Signature of a duly authorized signing officers in their normal signatures. Insert the officer's capacity in which the signing officer acts, under each signature. Affix the corporate seal. If the Bid is signed by officials other than the president and secretary of the company, or the president/secretary/treasurer of the company, submit a copy of the by-law resolution of their board of directors authorizing them to do so, with the Bid Form in the bid envelope.
   4. Joint Venture: Signature of each party of the joint venture under their respective seals in a manner appropriate to such party as described above, similar to requirements for Partnerships.

1.21 BID OPENING

A. Bids will be opened publicly and read aloud immediately following the closure of the bidding period in the Commission’s Meeting Room located in the Otsego County Road Commission building at 669 W. McCoy Road, Gaylord, MI 49735.

B. Bidders may be present.

1.22 DURATION OF OFFER

A. Bids shall remain open to acceptance and shall be irrevocable for a period of 60 days after bid closing date.

1.23 ACCEPTANCE OF OFFER

A. The Owner reserves the right to accept or reject any or all offers.

B. After acceptance by the Owner, the Architect/Engineer on behalf of the Owner, will issue to the accepted Bidder, a written letter of Contract Award.

C. Notwithstanding delay in the preparation and execution of the Agreement, accepted Bidder shall be prepared, upon written Notice to Proceed, to commence work within seven days following receipt of official written order of the Owner to proceed, or on date stipulated in such order.

D. The accepted bidder shall assist and cooperate with the Owner to prepare the Agreement, and within 7 days following its presentation shall execute Agreement and return it to the Owner.

END OF DOCUMENT

DOCUMENT 00 41 13
BID FORM – STIPULATED PRICE

To: Otsego County Road Commission
c/o Kirk Harrier, Managing Director
669 W. McCoy Road
Gaylord, MI 49735

Project: Otsego County Road Commission
Reroofing and Vesitbule Renovation
Project No. 287-21

Date: _____

Submitted by: _____
(full name)

_____
(full address)

Estimator _____
(name and telephone)

1. OFFER

Having examined the Place of The Work and all matters referred to in the Instructions to Bidders and the Contract Documents prepared by Anthony Esson, Architect dated March 1, 2022 for the above named project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the

Stipulated Sum of: $_____(numerical)

$_____dollars in lawful (written) money of the United States of America.

- We have included the required security deposit as required by the Instruction to Bidders.
- All applicable federal and/or State of Michigan taxes are included in the Bid Sum.
- We have included the costs of all required construction permits and inspections in the bid sum.

2. UNIT PRICES

We offer the following Unit Prices for specific portions of the Work as provided in the Contract Documents (Refer to Specification Section 07 54 19 – Poly-vinyl Chloride Roofing for requirements):

a. Remove and replace saturated roof insulation: $ _____ per inch of thickness per s.f.

3. CONTRACT TIME

a. If this Bid is accepted, we will:

- Complete the Work by the _____ day of _____, 20_____.

4. ACCEPTANCE

This offer shall be open to acceptance and is irrevocable for sixty (60) days from the bid closing date. If this bid is accepted by the Owner within the time period stated above, we will:

a. Execute the Agreement within five (5) days of receipt of Notice of Award by the Construction Manager.

b. Commence work within three (3) days after written Notice to Proceed by the Construction Manager.

If this bid is accepted within the time stated, and we fail to commence the Work or we fail to provide the required Bond(s), the security deposit shall be forfeited as damages to the Owner by reason of our failure, limited in amount to the lesser of the face value of the security deposit or the difference between this bid and the bid upon which a Contract is signed.

In the event our bid is not accepted within the time stated above, the required security deposit shall be returned to the undersigned, in accordance with the provisions of the Instructions to Bidders; unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

5. ADDENDA

The following Addenda have been received. The modifications to the Bid Documents noted below have been considered and all costs are included in the Bid Sum.

Addendum # _____ Dated _____

Addendum # _____ Dated _____

6. BID FORM SIGNATURE(S)
The Corporate Seal of

_____
(Bidder - print the full name of firm)
was hereunto affixed in the presence of:

_____
(Authorized signing officer Title)

(Seal)

If the Bid is a joint venture or partnership, add additional forms of execution for each member of the joint venture in the appropriate form or forms as above.

END OF BID FORM - STIPULATED PRICE

DOCUMENT 00 52 14

AGREEMENT FORM - AIA STIPULATED SUM (SINGLE-PRIME CONTRACT)

1.1 SUMMARY

A. Document Includes:
   1. Agreement.

1.2 AGREEMENT

A. AIA Document A104-2017, Standard Abbreviated Form of Agreement Between Owner and Contractor as modified, forms the basis of Agreement Between the Owner and Contractor.

END OF DOCUMENT

AIA® Document A104™ – 2017

Standard Abbreviated Form of Agreement Between Owner and Contractor

AGREEMENT made as of the 21st day of April in the year 2022
(In words, indicate day, month and year.)

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

Otsego County Road Commission
669 W. McCoy Road
Gaylord, MI 49735

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

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

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

Otsego County Road Commission
Reroofing and Vestibule Renovation
Architect's Project No. 287-21

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

Anthony P. Esson, Architect
P.O. Box 479
Gaylord, Michigan 49735

The Owner and Contractor agree as follows.

TABLE OF ARTICLES

ARTICLE 1 THE WORK OF THIS CONTRACT

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

ARTICLE 2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 2.1 The date of commencement of the Work shall be:
(Check one of the following boxes.)

[X] The date of this Agreement.

[ ] A date set forth in a notice to proceed issued by the Owner.

~~[ ] Established as follows:~~
~~*(Insert a date or a means to determine the date of commencement of the Work.)*~~

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

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

§ 2.3 ~~Substantial Completion~~ Project Completion

§ 2.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:
(Check the appropriate box and complete the necessary information.)

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

[X] By the following date:

Portion of Work	Substantial Completion Date

§ 2.3.2 ~~Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:~~
The Contractor shall achieve final completion within sixty days of actual Substantial Completion as determined by the Architect.

~~Portion of Work~~	~~Substantial Completion Date~~

§ 2.3.3 If the Contractor fails to achieve Substantial Completion as provided in ~~this Section 2.3, liquidated damages, if any, shall be assessed as set forth in Section 3.5.~~Section 2.3.1, or Final Completion as provided in Section 2.3.2 due to circumstances within the reasonable control of the Contractor, Owner may at their sole discretion hold Contractor responsible for costs that Owner would not have otherwise incurred. Such costs may be withheld from Progress payments or Final payment as applicable.

ARTICLE 3 CONTRACT SUM

§ 3.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be one of the following:
(Check the appropriate box.)

[X] Stipulated Sum, in accordance with Section 3.2 below

~~[ ] Cost of the Work plus the Contractor's Fee, in accordance with Section 3.3 below~~

~~[ ] Cost of the Work plus the Contractor's Fee with a Guaranteed Maximum Price, in accordance with Section 3.4 below~~

(Based on the selection above, complete Section 3.2, 3.3 or 3.4 below.)

§ 3.2 The Stipulated Sum shall be ($), subject to additions and deductions as provided in the Contract Documents.

§ 3.2.1 The Stipulated Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

To be determined

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

Item	Units and Limitations	Price per Unit ($0.00)
1. Replace roof insulation	$ per inch of thickness per square foot	

§ 3.2.3 Allowances, if any, included in the stipulated sum:
(Identify each allowance.)

Item	Price
None	

~~**§ 3.3 Cost of the Work Plus Contractor's Fee**~~
~~**§ 3.3.1** The Cost of the Work is as defined in Exhibit A, Determination of the Cost of the Work.~~

~~**§ 3.3.2** The Contractor's Fee:~~
~~*(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee and the method of adjustment to the Fee for changes in the Work.)*~~

~~**§ 3.4 Cost of the Work Plus Contractor's Fee With a Guaranteed Maximum Price**~~
~~**§ 3.4.1** The Cost of the Work is as defined in Exhibit A, Determination of the Cost of the Work.~~

~~**§ 3.4.2** The Contractor's Fee:~~
~~*(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee and the method of adjustment to the Fee for changes in the Work.)*~~

~~**§ 3.4.3 Guaranteed Maximum Price**~~
~~**§ 3.4.3.1** The sum of the Cost of the Work and the Contractor's Fee is guaranteed by the Contractor not to exceed ($), subject to additions and deductions by changes in the Work as provided in the Contract Documents. This maximum sum is referred to in the Contract Documents as the Guaranteed Maximum Price. Costs which would cause the Guaranteed Maximum Price to be exceeded shall be paid by the Contractor without reimbursement by the Owner.~~
~~*(Insert specific provisions if the Contractor is to participate in any savings.)*~~

~~**§ 3.4.3.2** The Guaranteed Maximum Price is based on the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:~~

(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

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

Item	Units and Limitations	Price per Unit ($0.00)

§ 3.4.3.4 Allowances, if any, included in the Guaranteed Maximum Price:
(Identify each allowance.)

Item	Price

§ 3.4.3.5 Assumptions, if any, on which the Guaranteed Maximum Price is based:

§ 3.4.3.6 To the extent that the Contract Documents are anticipated to require further development, the Guaranteed Maximum Price includes the costs attributable to such further development consistent with the Contract Documents and reasonably inferable therefrom. Such further development does not include changes in scope, systems, kinds and quality of materials, finishes or equipment, all of which, if required, shall be incorporated by Change Order.

§ 3.4.3.7 The Owner shall authorize preparation of revisions to the Contract Documents that incorporate the agreed-upon assumptions contained in Section 3.4.3.5. The Owner shall promptly furnish such revised Contract Documents to the Contractor. The Contractor shall notify the Owner and Architect of any inconsistencies between the agreed-upon assumptions contained in Section 3.4.3.5 and the revised Contract Documents.

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

ARTICLE 4 PAYMENT

§ 4.1 Progress Payments

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

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

§ 4.1.3 Provided that an Application for Payment is received by the Architect not later than the last day of a month, the Owner shall make payment of the ~~certified~~ Architect-certified amount to the Contractor not later than the ~~day of the month. If an~~ last day of the following month, unless and to the extent the Owner reasonably disputes the Application or Certification in good faith. If an Architect-certified Application for Payment is received by the ~~Architect~~ Owner after the date fixed above, ~~payment~~ undisputed payments shall be made by the Owner not later than thirty (30) days after the ~~Architect receives the~~ Owner receives the certified Application for Payment.
(Federal, state or local laws may require payment within a certain period of time.)

§ 4.1.4 For each progress payment made prior to ~~Substantial~~ Final Completion of the Work, the Owner may withhold retainage from the payment ~~otherwise due as follows:~~ in an amount not less than ten percent (10%),
(Insert a percentage or amount to be withheld as retainage from each Application for Payment and any terms for reduction of retainage during the course of the Work. The amount of retainage may be limited by governing law.)

§ 4.1.5 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.
(Insert rate of interest agreed upon, if any.)

5 % Per Annum

§ 4.2 Final Payment

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

.1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 18.2, and to satisfy other requirements, if any, which extend beyond final payment;

~~**.2** the Contractor has submitted a final accounting for the Cost of the Work, where payment is on the basis of the Cost of the Work with or without a Guaranteed Maximum Price; and~~

.3 a final Certificate for Payment has been issued by the Architect in accordance with Section 15.7.1.

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

ARTICLE 5 DISPUTE RESOLUTION

§ 5.1 Binding Dispute Resolution

For any claim subject to, but not resolved by, mediation pursuant to Section 21.5, the method of binding dispute resolution shall be as follows:
(Check the appropriate box.)

[ ] ~~Arbitration pursuant to Section 21.6 of this Agreement~~

[X] Litigation in a court of competent jurisdiction

[ ] ~~Other *(Specify)*~~

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

ARTICLE 6 ENUMERATION OF CONTRACT DOCUMENTS

§ 6.1 The Contract Documents are defined in Article 7 and, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 6.1.1 The Agreement is this executed AIA Document A104™–2017, Standard Abbreviated Form of Agreement Between Owner and Contractor.

~~**§ 6.1.2** AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:~~

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

§ 6.1.3 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

§ 6.1.4 The Specifications:
(Either list the Specifications here or refer to an exhibit attached to this Agreement.)

All sections dated March 1, 2022 unless noted specifically below

Section	Title	Date	Pages
01 10 00	Summary		2
01 20 00	Price and Payment Procedures		4
01 30 00	Administrative Requirements		5
01 33 00	Submittal Procedures		5
01 40 00	Quality Requirements		3
01 50 00	Temporary Facilities and Controls		4
01 60 00	Product Requirements		3
01 70 00	Execution and Closeout Requirements		5
02 41 19	Selective Structure Demolition		3
06 10 00	Rough Carpentry		5
06 17 53	Shop-Fabricated Wood Trusses		5
06 20 00	Finish Carpentry		3
07 21 16	Blanket Insulation		2
07 46 46	Fiber-Cement Siding		4
07 54 19	Polyvinyl-Chloride Roofing		9
07 61 00	Sheet Metal Flashing and Trim		2
07 90 00	Joint Protection		4
08 41 13	Aluminum Framed Entrances and Storefronts		9
08 71 00	Door Hardware		12
08 80 00	Glazing		6
09 21 16	Gypsum Board Assemblies		3
09 30 00	Tiling		4
09 90 00	Painting		6

§ 6.1.5 The Drawings:
(Either list the Drawings here or refer to an exhibit attached to this Agreement.)

OTSEGO COUNTY ROAD COMMISSION REROOFING AND VESTIBULE RENOVATION

Number	Title	Date
T	Title Sheet / Project	March 1, 2022

	Information	
A1	Overall Floor Plan	March 1, 2022
A2	Work Area Plans	March 1, 2022
A3	Exterior Elevations and Schedules	March 1, 2022
A4	Demolition Sections "A-A" & "B-B"	March 1, 2022
A5	New Work Sections "A-A" & "B-B"	March 1, 2022
A6	Roof Plan & Details	March 1, 2022
E1	Electrical Lighting Plan and Schedule	March 1, 2022

§ 6.1.6 The Addenda, if any:

Number	**Date**	**Pages**

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are enumerated in this Article 6.

§ 6.1.7 Additional documents, if any, forming part of the Contract Documents:

.1 Other Exhibits:
(Check all boxes that apply.)

[ ] ~~Exhibit A, Determination of the Cost of the Work.~~

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

_____

[ ] ~~The Sustainability Plan:~~

~~**Title**~~	~~**Date**~~	~~**Pages**~~

[ ] ~~Supplementary and other Conditions of the Contract:~~

~~**Document**~~	~~**Title**~~	~~**Date**~~	~~**Pages**~~

.2 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents.)

.1 Accepted portions of Contractor's Bid Response

The parties acknowledge that, due to the incorporation of several Contract Documents, the possibility exists (and is likely) that conflict or ambiguity may exist between or among the Contract Documents. In the event of any such conflict or ambiguity between or among the Contract Documents, the terms most beneficial to the Owner shall govern, as determined in the Owner's sole discretion.

ARTICLE 7 GENERAL PROVISIONS

§ 7.1 The Contract Documents

The Contract Documents are enumerated in Article 6 and consist of this Agreement (including, if applicable, Supplementary and other Conditions of the Contract), Drawings, Specifications, Addenda issued prior to the execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order,

(3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 7.2 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 between any persons or entities other than the Owner and the Contractor.

§ 7.3 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.

§ 7.4 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.

§ 7.5 Ownership and use of Drawings, Specifications and Other Instruments of Service

§ 7.5.1 ~~The~~ Except as otherwise provided herein or in the Agreement between Owner and Architect, the Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights 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.

§ 7.5.2 The Contractor, Subcontractors, Sub-subcontractors and suppliers are authorized to use and reproduce the Instruments of ~~Service provided to them,~~ Service, subject to the protocols established pursuant to Sections 7.6 and 7.7, 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 this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

~~**§ 7.6 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.~~

~~**§ 7.7 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.~~

§ 7.5.3 The Drawings, Specifications, and other documents and all data used in compiling any tests, surveys, or inspections at the Project Site and the results therefrom, as well as all photographs, drawings, specifications, schedules, data processing output, computer-aided design/drafting (CADD) system disks/tapes, computations,

studies, audits, reports, models and other items of like kind, and all intellectual property, prepared or created for or in connection with the Project and required by the Owner, the Contractor, or a third party, belong to the Owner. The Contractor may retain one record set. All copies of them, except Contractor's record set, shall be returned or suitably accounted for upon completion of the Work. They are for use solely with respect to the Project. The Contractor shall not, without the prior written consent of the Owner, use or permit anyone to use any Drawings, Specifications, or other documents prepared for or in connection with the Project, or any concepts or ideas developed in connection with the Project, for any purpose other than the Project. The Owner shall at all times have access to and control over the disposition of any Drawings, Specifications, and other documents pertaining to the Project.

§ 7.8 Severability

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.

§ 7.9 Notice

§ 7.9.1 Except as otherwise provided in Section 7.9.2, 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~~ an appropriate 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 ~~in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:~~
~~(If other than in accordance with AIA Document E203–2013, insert requirements for delivering Notice in electronic format such as name, title and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)~~if an acknowledgement of receipt is received from the recipient or proof of receipt is otherwise established. The parties acknowledge that an appropriate representative of the Owner shall have authority only to the extent provided by the Owner's Board of Education.

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

~~**§ 7.10 Relationship of the Parties**~~

~~Where the Contract is based on the Cost of the Work plus the Contractor's Fee, with or without a Guaranteed Maximum Price, the Contractor accepts the relationship of trust and confidence established by this Agreement and covenants with the Owner to cooperate with the Architect and exercise the Contractor's skill and judgment in furthering the interests of the Owner; to furnish efficient business administration and supervision; to furnish at all times an adequate supply of workers and materials; and to perform the Work in an expeditious and economical manner consistent with the Owner's interests. The Owner agrees to furnish and approve, in a timely manner, information required by the Contractor and to make payments to the Contractor in accordance with the requirements of the Contract Documents.~~

ARTICLE 8 OWNER

§ 8.1 Information and Services Required of the Owner

§ 8.1.1 ~~Prior to commencement of the Work, at the 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 8.1.1, the Contract Time shall be extended appropriately.~~

§ 8.1.2 The Owner shall furnish all necessary surveys and a legal description of the site.

§ 8.1.3 The Contractor shall be entitled to rely on the accuracy of information furnished by the ~~Owner but~~ Owner, subject to its experience, expertise, and judgement, and shall exercise proper precautions relating to the safe performance of the Work. The Contractor acknowledges and agrees that the Architect is responsible for design, that the Owner has no duty to discover any design errors or omissions in the Drawings, Plans, Specifications and other Construction Documents or to notify Contractor of same, and that the Owner does not warrant the accuracy and adequacy of any Contract Documents.

§ 8.1.4 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, ~~including~~ including, but not limited to, those required under Section 9.6.1, the Owner shall secure and pay for other necessary approvals, easements, assessments, and charges required for the construction, use, or occupancy of permanent structures or for permanent changes in existing facilities.

§ 8.2 Owner's Right to Stop the Work

If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents, or ~~repeatedly~~ fails to carry out the 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 is 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. This right shall be in addition to and not in limitation of the Owner's rights under any provision of the Contract Documents.

§ 8.3 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents, and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to any 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~~ have (including any claim against the Contractor's performance bond), correct such default or neglect. The Architect may, pursuant to Section 15.4.3, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including the Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. 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 21.

ARTICLE 9 CONTRACTOR

§ 9.1 Review of Contract Documents and Field Conditions by Contractor

§ 9.1.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be ~~performed and correlated personal observations~~ performed, including but not limited to the location of utilities, and correlated personal observations and inspections with requirements of the Contract Documents.

§ 9.1.2 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 8.1.2, shall take field measurements of any existing conditions related to that portion of the Work and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies, or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional unless otherwise specifically provided in the Contract Documents.

§ 9.1.3 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.~~require, with a copy of same to be forwarded to the Owner.

§ 9.2 Supervision and Construction Procedures

§ 9.2.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters.

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

§ 9.2.3 The Contractor shall immediately notify the Architect of delays of any other Contractors that could impact timely coordination and completion of the Work. The Contractor shall be deemed to have accepted prior work when it commences provision of subsequent Work and shall be responsible for the cost of repair, replacement, or reconstruction if the prior work is found to be improper.

§ 9.3 Labor and Materials

§ 9.3.1 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.

§ 9.3.2 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 skilled in tasks assigned to them.

§ 9.3.3 The Contractor may make a substitution only with the consent of the Owner, after evaluation by the Architect and in accordance with a Modification.

§ 9.3.4 Asbestos-Free Product Installation

§ 9.3.4.1 It is hereby understood and agreed that no product and/or material containing asbestos, including chrysolite, amosite, crocidolite, tremolite asbestos, anthorphyllite asbestos, actinolite asbestos and any combination of these materials that have been chemically treated and/or altered shall be installed or introduced into the Work by the Contractor or its employees, agents, Subcontractors, or other individuals or entities over whom the Contractor has control. The Contractor shall be required to provide a signed certification statement ensuring that all products or materials installed or introduced into the Work will be asbestos-free.

§ 9.3.4.2 The Contractor also shall be required to furnish certified statements from the manufacturers of supplied materials used during construction verifying their products to be asbestos-free in accordance with the requirements of Section 9.3.4.1.

§ 9.3.4.3 The Contractor shall complete and submit to the Owner a certification evidencing asbestos-free product installation prior to issuance of the final Certificate for Payment in a form acceptable to the Owner.

§ 9.3.5 The Contractor agrees that neither it nor its Subcontractors will discriminate against any employee or applicant for employment, to be employed in the performance of this Contract, with respect to hire, tenure conditions or privilege of employment, or any matter directly or indirectly related to employment, because of race, age, sex, color, religion, national origin, ancestry or physical disability. Breach of this covenant may be regarded as a material breach of this Contract.

§ 9.4 Warranty

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents expressly 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 expressly 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 under normal usage.~~ Contractor

warrants that the Owner will have good title to the Work and all materials and equipment incorporated into the Work. The Contractor warrants that all Work and materials and equipment incorporated into the Work shall be fit for the purposes for which they were intended. The Contractor warrants that all Work and materials and equipment incorporated into the Work shall be merchantable. All other 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 15.6.3.

Upon notice of the breach of any of the foregoing warranties or guarantees or any other warranties or guarantees under the Contract Documents, the Contractor, in addition to any other requirements in the Contract Documents, will commence to correct such breach within 72 hours after written notice thereof and thereafter will use its best efforts to correct such breach to the satisfaction of the Owner; provided that if such notice is given after final payment hereunder, such 72 hour period shall be extended to seven (7) days. The foregoing warranties and obligations of the Contractor shall survive the final payment and/or termination of the Contract.

The Contractor shall, at the time of final completion of the Work and as a condition precedent to final payment to the Contractor, assign to the Owner all manufacturers' warranties related to the materials and labor used in the Work. The Contractor further agrees to perform the Work in such manner as to preserve any and all such manufacturers' warranties and deliver to the Architect the warranties, project manuals, operating procedures, and other materials related to each of the building systems and materials included in the Contractor's Work and as required by the Specifications.

§ 9.5 Taxes

The Contractor shall pay sales, consumer, use, and other similar taxes that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect. The Contractor shall pay all local, state and federal taxes levied on its business, income or property and shall make all contributions for social security and other wage or payroll taxes. The Contractor shall be solely responsible for such payments and shall indemnify the Owner and hold it harmless from same.

§ 9.6 Permits, Fees, Notices, and Compliance with Laws

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

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

§ 9.7 Allowances

The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. The Owner shall select materials and equipment under allowances with reasonable promptness. Allowance amounts shall include the costs to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts. Contractor's costs for unloading and handling at the site, labor, installation, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowance.

§ 9.8 Contractor's Construction Schedules

§ 9.8.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

§ 9.8.2 The Contractor shall perform the Work in general accordance with the most recent schedule submitted to the Owner and Architect. The Contractor acknowledges and understands that the work schedule will be modified from time-to-time with the Owner's approval to coordinate with the work of others and that such schedule changes do not

give rise to a claim for damages or additional compensation by the Contractor for delay or otherwise. The Contractor shall be required to conform to the most recent Owner-approved schedule and acknowledges that fact was taken into account when it agreed to the Contract Sum and entered into this Contract. The Contractor shall cooperate with the Architect and Owner in scheduling and performing the Contractor's Work to avoid conflict with, and as to cause no delay in, the work or activities of other contractors or the construction or operations of the Owner's own forces.

§ 9.9 Submittals

§ 9.9.1 The Contractor shall review for compliance with the Contract Documents and submit to the Architect Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents in coordination with the Contractor's construction schedule and in such sequence as to allow the Architect reasonable time for review. 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. The Work shall be in accordance with approved submittals.

§ 9.9.2 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents.

§ 9.9.3 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 or unless the Contractor needs to provide such services in order to carry out the Contractor's own responsibilities. If professional design services or certifications by a design professional are specifically required, the Owner and the Architect will specify the performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional. If no criteria are specified, the design shall comply with applicable codes and ordinances. ~~Each~~ Subject to its professional skill, experience, and expertise (if applicable), and except as otherwise set forth in the Contract Documents, each Party shall be entitled to rely upon the information provided by the other Party. The Architect will review and approve or take other appropriate action on submittals for the limited purpose of checking for conformance with information provided and the design concept expressed in the Contract Documents. The Architect's review of Shop Drawings, Product Data, Samples, and similar submittals shall be for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. In performing such review, the Architect will approve, or take other appropriate action upon, the Contractor's Shop Drawings, Product Data, Samples, and similar submittals.

§ 9.10 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. The Contractor will also consult with the Owner and Architect concerning necessary operations at the Project site to minimize construction impacts on the Owner.

§ 9.11 Cutting and Patching

The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly.

§ 9.12 Cleaning Up

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 material from and about the Project.

§ 9.13 Access to Work

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

§ 9.14 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 indemnify and hold harmless the Owner and Architect ~~harmless from~~ from any and all cost, damage, or loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents or

where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 9.15 Indemnification

§ 9.15.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' ~~fees,~~ fees and the costs of correcting defective work, arising out of or resulting from performance of the Work, ~~provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself),~~ , but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, or the Contractor's breach of this Agreement, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section 9.15.1.

§ 9.15.2 In claims against any person or entity indemnified under this Section 9.15 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 9.15.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

§ 9.15.3 In addition to and not in limitation of the Contractor's other indemnity obligations, the Contractor hereby accepts and assumes exclusive liability for and shall indemnify, protect, and hold harmless the Owner and Architect from and against the payment of the following:

.1 all loss by fines, penalties or corrective measures resulting from acts of the Contractor or omissions by the Contractor, its Subcontractors, agents, employees or assigns, with respect to the violation of safety requirements of this Contract, including reasonable attorney fees

.2 all contributions, taxes, or premiums (including interest and penalties thereof) which may be payable under the unemployment insurance law of any state, the federal Social Security Act, federal, state, county, and/or municipal tax withholding laws, or any other law, measured upon the payroll of or required to be withheld from employees by whomsoever employed, engaged in the Work to be performed and furnished under this Contract;

.3 all sales, use, personal property and other taxes (including interest and penalties thereof) required by any federal, state, county, municipal, or other law to be paid or collected by the Contractor or any of its Subcontractors or vendors or any other person or persons acting for, through or under it or any of them, by reason of the performance of the Work or the acquisition, ownership, furnishing, or use of any materials, equipment, supplies, labor, services, or other items for or in connection with the Work; and

.4 all pension, welfare, vacation, annuity, and other benefit contributions payable under or in connection with respect to all persons by whomsoever employed, engaged in the Work to be performed and furnished under this Contract.

.5 any claim, damage, loss or expense, including, but not limited to, actual attorney fees, incurred by the Owner related to any hazardous material or waste, toxic substance, pollution, or contamination brought into the Project site or caused by the Contractor or used, handled, transported, stored, removed, remediated, disturbed, or dispersed of by Contractor.

§ 9.15.4 In the event that any claim is made or asserted, or lawsuit filed for damages or injury arising out of or resulting from the performance of the Work, whether or not the Owner or Architect is named as a party, the Contractor shall immediately advise the Owner and Architect, in writing, of such claim or lawsuit and shall provide a full and complete copy of any documents or pleadings thereto, as well as a full and accurate report of the facts involved.

ARTICLE 10 ARCHITECT

§ 10.1 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.~~ Payment and with the Owner's written concurrence during the correction period. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified in writing in accordance with other provisions of the Contract.

§ 10.2 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.~~Owner and Architect.

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

§ 10.4 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, will guard the Owner against defects and deficiencies in the Work, 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~~ Except as required by the Owner/Architect Agreement, 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~~ and, except as provided in the Owner/Architect Agreement, 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.

§ 10.5 Based on the Architect's evaluations of the Work and 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.

§ 10.6 The Architect has authority to reject Work that does not conform to the Contract Documents and to require inspection or testing of the Work.

§ 10.7 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.

§ 10.8 The Architect will interpret ~~and decide~~ matters concerning performance under, and requirements of, the Contract Documents on written request of ~~either the Owner or Contractor.~~ the Owner. The Architect will make initial ~~decisions~~ interpretations on all claims, disputes, and other matters in question between the Owner and Contractor but will not be liable for results of any ~~interpretations or decisions~~ reasonable interpretations rendered in good faith.

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

ARTICLE 11 SUBCONTRACTORS

§ 11.1 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.

§ 11.2 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect in writing of the Subcontractors or suppliers proposed for each of the principal portions of the Work. The Contractor shall not contract with any Subcontractor or supplier to whom the Owner or Architect has made reasonable written objection within ten days after receipt of the Contractor's list of Subcontractors and suppliers. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, taking into consideration the Owner's or Architect's reasonable objection in good faith, 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. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 11.3 Contracts between the Contractor and Subcontractors shall (1) require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by the terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by the Contract Documents, assumes toward the Owner and Architect, and (2) allow the Subcontractor the benefit of all rights, remedies and redress against the Contractor that the Contractor, by these Contract Documents, has against the Owner. The Contractor shall ensure that the Owner is made an express third-party beneficiary of any agreement between the Contractor and Subcontractor (or between a Subcontractor and any sub-subcontractor) related to the Work.

ARTICLE 12 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 12.1 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.~~insurance.

§ 12.2 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 activities with theirs as required by the Contract Documents.

§ 12.3 The Owner shall be reimbursed by the Contractor for costs incurred by the Owner which are payable to a Separate Contractor because of delays, improperly timed activities, or defective construction of the Contractor. ~~The Owner shall be responsible to the Contractor for costs incurred by the Contractor because of delays, improperly timed activities, damage to the Work, or defective construction of a Separate Contractor.~~

ARTICLE 13 CHANGES IN THE WORK

§ 13.1 By appropriate Modification, changes in the Work may be accomplished after execution of the Contract. The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, with the Contract Sum and Contract Time being adjusted accordingly. Such changes in the Work shall be authorized by written Contract amendment, written Change Order signed by the Owner, Contractor, and Architect, or by written Construction Change Directive signed by the Owner and Architect. Upon issuance of the Change Order or Construction Change Directive, the Contractor shall proceed promptly with such changes in the Work, unless otherwise provided in the Change Order or Construction Change Directive.

§ 13.2 Adjustments in the Contract Sum and Contract Time resulting from a change in the Work shall be determined by mutual agreement of the parties or, in the case of a Construction Change Directive signed only by the Owner and Architect, by the Contractor's cost of labor, material, equipment, and reasonable overhead and profit, unless the parties agree on another method for determining the cost or credit. Pending final determination of the total cost of a Construction Change Directive, the Contractor may request payment for Work completed pursuant to the Construction Change Directive. The ~~Architect~~ Architect, with the Owner's approval, will make an interim determination of the amount of payment due for purposes of certifying the Contractor's monthly Application for Payment. When the Owner and Contractor agree on adjustments to the Contract Sum and Contract Time arising from a Construction Change Directive, the Architect will prepare a Change Order. If the parties cannot agree on a final adjustment to the Contract Sum and/or Contract Time, the Contractor's sole remedy is to timely file a Claim in accordance with this Agreement.

§ 13.3 The Architect will have authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall either: (i) timely file a Claim in accordance with this Agreement, or (ii) notify the Owner and the Architect in writing and shall not proceed to implement the change in the Work.

§ 13.4 If concealed or unknown physical conditions are encountered at the site that differ materially from those indicated in the Contract Documents or from those conditions ordinarily found to exist, the ~~Contract Sum and Contract~~

~~Time shall be equitably~~ Contractor shall timely provide written notice to the Owner and Architect before conditions are disturbed, including such notice as required by 1998 PA 57, which is incorporated herein by reference. If appropriate, the Contract Sum and Contract Time may be adjusted as mutually agreed between the Owner and ~~Contractor; provided that the Contractor provides notice to the Owner and Architect promptly and before conditions are disturbed.~~Contractor.

ARTICLE 14 TIME

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

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

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

§ 14.4 The date of Substantial Completion is the date certified by the Architect in accordance with Section 15.6.3.

§ 14.5 ~~If~~ Provided the Contractor timely and properly submits a Claim as required by this Agreement, if the Contractor is delayed at any time in the commencement or progress of the Work by (1) changes ordered in the Work; (2) by ~~labor disputes, fire, unusual delay in deliveries,~~ fire, significant abnormal adverse weather conditions not reasonably anticipatable, unavoidable casualties, or any causes beyond the Contractor's control; or (3) by other causes that the Contractor asserts, and the Owner and Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine, subject to the provisions of Article 21. In the event the Contractor is hindered in the commencement or progress of the Work by someone other than the Owner, and in the event the Contractor claims damages as a direct and proximate consequence thereof (including, but not limited to, extended general conditions, overhead, profit, overtime, interest, supervision or other costs or profits whatsoever), then the Contractor shall not assert such claims against the Owner, and as to the Owner, the Contractor's claims of delay damages are hereby waived. The Contractor's sole and exclusive remedy regarding such claims for such delay damages shall be to pursue such claims directly against the individual or entity which caused the delay.

For any delay claims raised against the Owner, the Contractor's sole and exclusive remedy is an extension of time to perform the Work not to exceed the time frame of any proven delay. Under no circumstances is the Contractor entitled to monetary delay damages from the Owner.

ARTICLE 15 PAYMENTS AND COMPLETION

§ 15.1 Schedule of Values

§ 15.1.1 ~~Where the Contract is based on a Stipulated Sum or the Cost of the Work with a Guaranteed Maximum Price pursuant to Section 3.2 or 3.4, the~~ The Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Stipulated Sum or Guaranteed Maximum Price to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy required by the Architect. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 15.1.2 The allocation of the Stipulated Sum or Guaranteed Maximum Price under this Section 15.1 shall not constitute a separate stipulated sum or guaranteed maximum price for each individual line item in the schedule of values.

~~**§ 15.2 Control Estimate**~~

~~**§ 15.2.1** Where the Contract Sum is the Cost of the Work, plus the Contractor's Fee without a Guaranteed Maximum Price pursuant to Section 3.3, the Contractor shall prepare and submit to the Owner a Control Estimate within 14 days of executing this Agreement. The Control Estimate shall include the estimated Cost of the Work plus the Contractor's Fee.~~

~~**§ 15.2.2** The Control Estimate shall include:~~

~~.1 the documents enumerated in Article 6, including all Modifications thereto;~~

.2 a list of the assumptions made by the Contractor in the preparation of the Control Estimate to supplement the information provided by the Owner and contained in the Contract Documents;

.3 a statement of the estimated Cost of the Work organized by trade categories or systems and the Contractor's Fee;

.4 a project schedule upon which the Control Estimate is based, indicating proposed Subcontractors, activity sequences and durations, milestone dates for receipt and approval of pertinent information, schedule of shop drawings and samples, procurement and delivery of materials or equipment the Owner's occupancy requirements, and the date of Substantial Completion; and

.5 a list of any contingency amounts included in the Control Estimate for further development of design and construction.

§ 15.2.3 When the Control Estimate is acceptable to the Owner and Architect, the Owner shall acknowledge it in writing. The Owner's acceptance of the Control Estimate does not imply that the Control Estimate constitutes a Guaranteed Maximum Price.

§ 15.2.4 The Contractor shall develop and implement a detailed system of cost control that will provide the Owner and Architect with timely information as to the anticipated total Cost of the Work. The cost control system shall compare the Control Estimate with the actual cost for activities in progress and estimates for uncompleted tasks and proposed changes. This information shall be reported to the Owner, in writing, no later than the Contractor's first Application for Payment and shall be revised and submitted with each Application for Payment.

§ 15.2.5 The Owner shall authorize preparation of revisions to the Contract Documents that incorporate the agreed-upon assumptions contained in the Control Estimate. The Owner shall promptly furnish such revised Contract Documents to the Contractor. The Contractor shall notify the Owner and Architect of any inconsistencies between the Control Estimate and the revised Contract Documents.

§ 15.3 Applications for Payment

§ 15.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 15.1, values for completed portions of the Work. The application shall be notarized, if required; be supported by all data substantiating the Contractor's right to payment that the Owner or Architect require; shall reflect retainage if provided for in the Contract Documents; and include any revised cost control information required by Section 15.2.4. Documents. 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.

§ 15.3.2 With each Application for Payment where the Contract Sum is based upon the Cost of the Work, or the Cost of the Work with a Guaranteed Maximum Price, the Contractor shall submit payrolls, petty cash accounts, receipted invoices or invoices with check vouchers attached, and any other evidence required by the Owner to demonstrate that cash disbursements already made by the Contractor on account of the Cost of the Work equal or exceed progress payments already received by the Contractor plus payrolls for the period covered by the present Application for Payment, less that portion of the progress payments attributable to the Contractor's Fee.

§ 15.3.3 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 stored, and protected from damage, off the site at a location agreed upon in writing. Off-site storage by the Contractor is discouraged.

§ 15.3.4 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 other encumbrances adverse to the Owner's interests.

§ 15.3.4.1 Each Contractor Application for Payment shall be accompanied by (1) an Affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which previous Applications for Payment have been submitted and for which the Owner might in any way be responsible have been paid or otherwise

satisfied, and (2) a release or waiver of liens from the Contractor and each of its Subcontractors, materialman, suppliers and laborers addressing all previous Applications for Payment submitted for the Project.

§ 15.4 Certificates for Payment

§ 15.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner of the Architect's reasons for withholding certification in whole or in part as provided in Section 15.4.3.

§ 15.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluations 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 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,~~ Architect, in writing, together with the certification to which it pertains. However, unless otherwise required by the Owner/Architect Agreement, 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.

§ 15.4.3 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 15.4.2 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 15.4.1. If the Contractor and the 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 9.2.2, because of

.1 defective Work not ~~remedied;~~remedied, or the Contractor is in default on the Agreement;
.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.~~Documents
.8 the Work not having progressed to the extent set forth in the Application for Payment;
.9 representations of the Contractor are untrue;
.10 failing to conform to Project Schedule;
.11 default in the performance of any obligation to the Owner under another contract; or
.12 failure to provide sufficiently skilled workers.

§ 15.4.4 When ~~either party~~ the Contractor disputes the Architect's decision regarding a Certificate for Payment under Section 15.4.3, in whole or in part, ~~that party~~ the Contractor may submit a Claim in accordance with Article 21.

§ 15.4.5 If the Contractor disputes any determination by the Owner or Architect with regard to any Certificate for Payment, the Contractor shall nevertheless continue to expeditiously perform the Work and such dispute shall provide no basis for any manner of suspension of the Contractor's performance of the Work.

§ 15.4.6 Notwithstanding anything herein to the contrary, the Owner has no obligation to pay the Contractor absent receipt of a Certificate for Payment for the requested amount, and neither the Architect's failure to issue a Certificate

for Payment nor the Architect's failure to notify the Contractor and/or Owner of a withheld Certificate for Payment creates an obligation on the Owner to pay the Contractor. The foregoing sentence shall not operate to limit the right of the Owner to dispute amounts requested by the Contractor or to withhold payments from the Contractor as provided in the Contract Documents.

§ 15.5 Progress Payments

§ 15.5.1 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.

§ 15.5.2 Neither the Owner nor Architect shall have an obligation to pay or see to the payment of money to a Subcontractor or supplier except as may otherwise be required by law.

§ 15.5.3 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.

§ 15.5.4 ~~Provided the Owner has fulfilled its payment obligations under the Contract Documents, the~~ 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.

§ 15.6 Substantial Completion

§ 15.6.1 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 and when all required occupancy permits, if any, have been issued, so that the Owner can occupy or utilize the Work for its intended use.

§ 15.6.2 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.~~ payment (a "punch list"). 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.

§ 15.6.3 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. The Contractor shall respond immediately to correct Work deficiencies and/or punch list items. Should the Contractor fail to make corrections in a timely fashion, but not later than fifteen (15) calendar days from the date of Substantial Completion or notification of the required corrections, whichever is earlier, such Work may be corrected by the Owner at the Contractor's sole expense, and any remaining payments due the Contractor shall be withheld by the Owner. The Contractor shall promptly notify the Architect, in writing, when the Work deficiencies and/or punch list items are completed. Upon the review of the Work by the Architect after such notification by the Contractor, if Work deficiencies and/or punch list items shall continue to exist, the Contractor shall reimburse the Owner its cost plus ten percent (10%) overhead and profit on any cost incurred by the Owner, including the Architect's fees for re-inspection of the Work. Failure to pay such costs within ten (10) days of receipt of a demand regarding the same shall permit the Owner to pay such costs out of retainage held by the Owner on the Contractor's contract. When the Architect determines that the Work or designated portion thereof is substantially complete, the Architect will issue a Certificate of Substantial Completion which 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.

§ 15.6.4 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.

§ 15.7 Final Completion and Final Payment

§ 15.7.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with 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 stated in Section 15.7.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 15.7.2 Final payment shall not become due until the Contractor has delivered to the Owner ~~a complete release of all liens arising out of this Contract or receipts in full covering all labor, materials and equipment for which a lien could be filed, or a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including costs and reasonable attorneys' fees.~~(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, (6) an affidavit that states the Work is fully completed and performed in accordance with the Contract Documents, (7) in the event of Contractor bankruptcy, at the Owner's option, an order entered by the court having jurisdiction of the Contractor's insolvency proceeding authorizing such payment, (8) a general release executed by the Contractor on a form provided by the Architect, (9) all close-out documents, (10) all warranties collected and provided in an acceptable manner, and (11) 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.

§ 15.7.3 The making of final payment shall not 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.~~Owner.

§ 15.7.4 Acceptance of final payment by the Contractor, a Subcontractor or supplier shall constitute a waiver of claims by ~~that payee~~ the Contractor except those previously made in writing and identified by ~~that payee~~ the Contractor as unsettled at the time of the final Application for ~~Payment.~~Payment and specifically referenced as being an exception to the waiver contained in this Section 15.7.4.

ARTICLE 16 PROTECTION OF PERSONS AND PROPERTY

§ 16.1 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. The Contractor shall take ~~reasonable precautions~~ every reasonable precaution 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.

The Contractor shall take all reasonable safety precautions with respect to the Work, shall comply with all industry standard safety measures, shall comply with all applicable laws, including but not limited to compliance 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 and property and their protection from damage, injury, or loss. The Contractor shall promptly remedy damage and loss to property 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~~ responsible, including but not limited to, under Sections 16.1.2 and 16.1.3. The Contractor may make a timely claim as permitted by this Agreement 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 by anyone for whose acts either of them may be liable,~~ others, 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 9.15.

§ 16.2 ~~Hazardous Materials and Substances~~If the Contractor or any Subcontractor chooses to use any systems, equipment, facilities, or services which have been incorporated in the Project as a permanent part thereof by any other, the Contractor shall assume full responsibility for damages caused to said systems, equipment, facilities or services, and have damages repaired as required, so that in no case will the performance of the used systems, equipment, facilities or services be diminished from the specified criteria as a result of such use.

§ 16.3 The Contractor acknowledges that the safety of the Owner's employees and guests is of the utmost importance. The Contractor will take no action which would jeopardize the safety of the Owner's employees and guests and, without the Owner's written approval, shall take no action which would interfere with the Owner's activities.

§ 16.4 Notification of Utility Companies

§ 16.4.1 At least five (5) working days prior to the start of work in areas which may involve existing utility lines, the Contractor shall notify the MISS DIG notification system, as legally required and, if applicable, any Registered Utility Protection Service of the utility company possibly affected by the planned work by certified mail with return receipt requested.

§ 16.4.2 The utility company should, upon receipt of notice, stake, mark or otherwise designate the location (and depth) of their lines, or temporarily move the line(s).

§ 16.4.3 The Contractor shall immediately report to the respective utility company any break or leak in its lines, or any dent, gouge, groove or other damage to the utility line or to its coating or cathodic protection made or discovered in the course of the Work.

§ 16.4.4 The Contractor shall immediately alert the Owner, Architect and occupants of nearby premises of any and all emergencies caused or discovered in the utility line(s) in the course of the Work.

§ 16.5 Security

§ 16.5.1 All construction participants, including the Contractor, Architect, Subcontractors, etc., shall cooperate with the Owner's security personnel and shall comply with all of the Owner's security requirements. Such requirements shall include, without limitation, if requested by the Owner, delivering to the Owner's security personnel, prior to the commencement of the Work on each day, a list of all personnel who will be permitted access to the Work. The foregoing, however, shall not relieve the Contractor of any obligation to provide a safe and secure workplace for all parties entering the Project Site. The Contractor shall be responsible to implement commercially reasonable data security protection measures to protect the Owner's networks and data when performing technology-related Work.

§ 16.6 Fire Protection

§ 16.6.1 The Contractor shall maintain free access to the building areas for firefighting equipment and shall at no time block off main roadways or fire aisles without providing adequate auxiliary roadways and means of entrance for firefighting equipment, including heavy fire department trucks, where applicable.

§ 16.6.2 The Contractor shall at all times cooperate with the Owner and kept the municipal fire department informed of the means of entrance and changes to the roadways or fire aisles as needed to provide fire department access to or around the Project Site.

§ 16.6.3 The Contractor shall, during the entire construction period and until the completion of the Work, provide and maintain all material, equipment, and services necessary for an adequate fire protection system, which shall meet the

approval of the Owner and/or the Architect. The system shall, at a minimum, meet the requirements set forth in the Contract Documents and of applicable laws. These requirements shall be augmented and/or the installations relocated, as may be necessary to meet, at all time, the demands of adequate protection in all areas and shall not be reduced prior to the completion of the Work with the written approval of the Owner and/or the Architect.

§ 16.2 Hazardous Materials and Substances

§ 16.2.1 The Contractor is responsible for compliance with the requirements of 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 in writing of the condition. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately ~~and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of~~ to address shutdown, delay, and start-up.

§ 16.2.2 ~~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 16.2.1 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.~~

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

ARTICLE 17 INSURANCE AND BONDS

§ 17.1 Contractor's Insurance

§ 17.1.1 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 required by law and as otherwise described in this Section 17.1 or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the insurance required by this Agreement 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 18.4, unless a different duration is stated below:

§ 17.1.2 Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than one million dollars ($ 1,000,000.00) each occurrence, two million dollars ($ 2,000,000.00) general aggregate, and two million dollars ($ 2,000,000.00) 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 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 9.15.

§ 17.1.3 Automobile Liability covering vehicles owned by the Contractor and non-owned vehicles used by the Contractor, with policy limits of not less than one million dollars ($ 1,000,000.00) 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.

§ 17.1.4 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 those required under Section 17.1.2 and 17.1.3, 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.

§ 17.1.5 Workers' Compensation at statutory limits.

§ 17.1.6 Employers' Liability with policy limits not less than one million dollars ($ 1,000,000.00) each accident, one million dollars ($ 1,000,000.00) each employee, and one million dollars ($ 1,000,000.00) policy limit.

~~**§ 17.1.7** 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 ($) per claim and ($) in the aggregate.~~

~~**§ 17.1.8** 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 ($) per claim and ($) in the aggregate.~~

~~**§ 17.1.9** Coverage under Sections 17.1.7 and 17.1.8 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.~~

§ 17.1.10 The Contractor shall provide certificates of insurance acceptable to the Owner evidencing compliance with the requirements in this Section 17.1 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 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 period required by Section 17.1.1. The certificates will show the Owner as an additional insured on the Contractor's Commercial General Liability and excess or umbrella liability ~~policy.~~policy and that the Contractor's insurance shall be primary.

§ 17.1.11 The Contractor shall disclose to the Owner any deductible or self- insured retentions applicable to any insurance required to be provided by the Contractor.

§ 17.1.12 To the fullest extent permitted by law, the Contractor shall cause the commercial liability coverage required by this Section 17.1 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~~ 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 require such insurance company to add to the policy the following clause: "The insurance afforded to the Additional Insured is primary insurance. If the Additional Insureds have other insurance which is applicable to the loss on an excess or contingent basis, the amount of the insurance company's liability under this policy shall not be reduced by the existence of such other insurance."

§ 17.1.13 ~~Within three (3) business days of the date~~ Immediately after the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by this Section 17.1, but in no event less than three days after becoming aware or the coverage actually lapsing, the Contractor shall provide notice to the Owner of such impending or actual cancellation or ~~expiration. Upon~~ expiration, including the Contractor's plan to immediately procure replacement insurance as required by the Contract Documents to avoid any lapse in coverage. Contractor's failure to do so is a material breach of this Agreement, shall entitle the Owner to purchase replacement insurance at Contractor's sole cost, and shall subject the Contractor to any and all damages related to its failure to comply with its required insurance obligations. Further, 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 (but not the obligation) 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.

§ 17.1.14 Other Insurance Provided by the Contractor
(List below any other insurance coverage to be provided by the Contractor and any applicable limits.)

Coverage	Limits

§ 17.2 Owner's Insurance
§ 17.2.1 Owner's Liability Insurance
The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 17.2.2 Property Insurance
§ 17.2.2.1 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 or materials or equipment supplied by others. The property insurance shall be maintained until Substantial ~~Completion and thereafter as provided in Section 17.2.2.2,~~ Completion, 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.~~ policy will exclude any tools, equipment, scaffolding, glass breakage, etc., owned or rented by the Contractor or Subcontractors and materials stored on the site, but not incorporated into the Project. The Contractor shall be responsible for protecting all product until the Date of Final Completion is established by the Architect. The Contractor shall replace any Work if damaged before Final Completion. The Contractor may assume the risk itself or obtain insurance in amounts it deems sufficient.

§ 17.2.2.2 ~~Unless the parties agree otherwise, upon Substantial Completion, the Owner shall continue the insurance required by Section 17.2.2.1 or, if necessary, replace the insurance policy required under Section 17.2.2.1 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 18.4.~~

§ 17.2.2.3 If the insurance required by this Section 17.2.2 is subject to deductibles or self-insured retentions, the ~~Owner~~ party causing the insurable event shall be responsible for all loss not covered because of such deductibles or retentions.

§ 17.2.2.4 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 18.4, "all-risks" property insurance, on a replacement cost basis, protecting the existing structure against direct physical loss or damage, notwithstanding the undertaking of the Work. ~~The Owner shall be responsible for all co-insurance penalties.~~

§ 17.2.2.5 Prior to commencement of the Work, the Owner shall secure the insurance, and provide evidence of the coverage, required under this Section 17.2.2 and, upon the Contractor's request, provide a copy of the property insurance policy or policies required by this Section 17.2.2. The copy of the policy or policies provided shall contain all applicable conditions, definitions, exclusions, and endorsements.

§ 17.2.2.6 Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any insurance required by this Section 17.2.2, 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; and (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.~~ negotiated . 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.

§ 17.2.2.7 Waiver of Subrogation

§ 17.2.2.7.1 ~~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 this 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 17.2.2.7 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.~~ Superior to any other provision herein or elsewhere in the Contract Documents, any references to "waiver of subrogation" or such similar provisions are hereby deleted and shall be declared to have no effect.

§ 17.2.2.7.2 ~~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 17.2.2.7.1 for damages caused by fire or other causes of loss covered by this separate property insurance.~~

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

§ 17.2.3 Other Insurance Provided by the Owner

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

Coverage	Limits
Not Applicable	

§ 17.3 Performance Bond and Payment Bond

§ 17.3.1 The ~~Owner shall have the right to require the Contractor~~ Contractor shall be required to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in the Contract Documents on the date of execution of the Contract. The bonds shall each be in the amount of 100% of the Contract Sum and otherwise comply with the terms of MCL 129.201, et seq.

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

ARTICLE 18 CORRECTION OF WORK

§ 18.1 The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed, or completed. Costs of correcting such rejected Work, including work of other Contractors or Subcontractors, compensation of consultants, any delay or related damages, attorneys' fees incurred by the Owner, 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, unless compensable under Section A.1.7.3 in Exhibit A, Determination of the Cost of the~~

~~Work.~~expense. The Owner shall have the right to charge the Contractor for any such costs and expenses and to deduct such amounts from any future payments due the Contractor.

§ 18.2 In addition to the Contractor's obligations under Section 9.4, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 15.6.3, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of 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.~~

§ 18.3 If the Contractor fails to correct nonconforming Work within a reasonable time, the Owner may correct it in accordance with Section 8.3.

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

§ 18.5 The one-year period for correction of Work shall ~~not~~ be extended by corrective Work performed by the Contractor pursuant to this Article ~~18.~~18 for a period of one-year beyond completion of the corrective Work.

ARTICLE 19 MISCELLANEOUS PROVISIONS

§ 19.1 Assignment of Contract

Neither party to the Contract shall assign the Contract without written consent of the other, except that the Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 19.2 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 21.6.~~State of Michigan in all respects, except that Claims and causes of action brought by the Owner shall not be deemed untimely if filed within six (6) years of Substantial Completion of the entire Project.

§ 19.3 Tests and Inspections

Tests, inspections, and approvals of portions of the Work required by the Contract Documents or by applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities shall be made at an appropriate time. 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.

§ 19.4 The Owner's representative:
(Name, address, email address and other information)

Kirk Harrier, Managing Director
Otsego County Road Commission
669 W. McCoy Road
Gaylord, MI 49735

§ 19.5 The Contractor's representative:
(Name, address, email address and other information)

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

§ 19.7 The Owner, being a governmental unit, is protected by the Michigan Void Construction Contracts Act, MCL 691.991.

§ 19.8 Notwithstanding any provisions within the Contract Documents , nothing shall be deemed a waiver of any immunity granted to Owner by law or statute, including but not necessarily limited to, governmental immunity under MCL 691.1407.

§ 19.9 All Contractor employees assigned to work under this Agreement may, at Owner's discretion, be subject to a background check and clearance by the Owner. Failure to obtain such clearance from the Owner may result in mandatory dismissal from the Owner's property and/or termination of the Agreement.

ARTICLE 20 TERMINATION OF THE CONTRACT

§ 20.1 Termination by the Contractor

If ~~the Architect fails to certify payment as provided in Section 15.4.1 for a period of 30 days through no fault of the Contractor, or~~ if the Owner fails to make an undisputed payment as provided in Section 4.1.3 for a period of 30 ~~days,~~ days beyond the due date, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner payment for Work ~~executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.~~timely and properly executed

§ 20.2 Termination by the Owner for Cause

§ 20.2.1 The Owner may terminate the Contract if the Contractor

- **.1** ~~repeatedly~~ refuses or fails to supply enough properly skilled workers or proper materials;
- **.2** fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- **.3** ~~repeatedly~~ disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority;~~or~~
- **.4** otherwise is guilty of substantial breach of a provision of the Contract ~~Documents.~~Documents; or
- **.5** the Contractor fails to prosecute the Work or any part thereof with promptness and diligence or fails to perform any provisions of the Contract, or goes into bankruptcy, liquidation, makes an assignment for the benefit of creditors, enters into a composition with its creditors, or becomes insolvent..

§ 20.2.2 When any of the reasons described in Section 20.2.1 exists, the Owner, upon certification by the Architect that sufficient cause exists to justify such action, may, without prejudice to any other remedy the Owner may have and after giving the Contractor ~~seven days'~~ three (3)days' notice, terminate the Contract and take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor and may finish the Work by whatever reasonable method the Owner may deem expedient. Upon 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.

§ 20.2.2.1 In the event the Contractor's surety bond requires notice of intent to declare a default of the Contractor and if such bond notice is provided by the Owner, such notice shall be adequate to satisfy the three (3) day written notice described above in this Section.

§ 20.2.2.2 The three (3) day notice period identified in this Section does not give rise to an opportunity for the Contractor to cure the cause for termination. Further, the Owner's failure to properly follow the termination procedure shall not be a substantial or material breach of the Contract or the Owner's obligations.

§ 20.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 20.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

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

§ 20.3 Termination by the Owner for Convenience

The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause. The Owner shall pay the Contractor for Work ~~executed;~~ timely and properly executed and costs incurred by reason of such ~~termination, including costs attributable to termination of Subcontracts; and a termination fee, if any, as follows:~~termination.

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

ARTICLE 21 CLAIMS AND DISPUTES

§ 21.1 Claims, disputes, and other matters in question arising out of or relating to this Contract, including those alleging an error or omission by the ~~Architect but excluding those arising under Section 16.2,~~ Architect, shall be referred initially to the Architect for ~~decision.~~ an interpretation. Such matters, except those waived as provided for in Section 21.11 and Sections 15.7.3 and 15.7.4, shall, after initial ~~decision~~ interpretation by the Architect or 30 days after submission of the matter to the Architect, be subject to mediation as a condition precedent to binding dispute resolution.

§ 21.2 Notice of Claims

§ 21.2.1 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 18.2,~~ the Contractor shall be initiated by notice to the Owner and Architect within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the ~~claimant~~ Contractor first recognizes the condition giving rise to the Claim, whichever is later. The Contractor's failure to timely and property initiate a Claim shall be an absolute and irrevocable waiver of such Claim and any cause of action. Claims and causes of action by the Owner shall be governed by the applicable statute of limitations period, except when a provision of the Contract Documents provides a longer period. The parties acknowledge, understand, and agree that the Contractor's required prompt filing of a Claim is critical to the Project, as Contractor Claims often affect the Project schedule and/or Project budget, and that the deadline and waiver applicable to Contractor Claims is a material inducement to the Owner entering into an agreement with the Contractor. The Contractor's timely submission of a Claim shall be a condition precedent to pursuing a Cause of Action, in accordance with Section 21.3.

§ 21.2.2 ~~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 18.2, shall be initiated by notice to the other party.~~

§ 21.3 Time Limits on Claims and Causes of Action

The Owner ~~and Contractor~~ shall commence all claims and causes of action against ~~the other and~~ the Contractor in accordance with the statutes of limitation applicable under Michigan law, except that no claim or cause of action shall be untimely if filed within six (6) years of substantial completion of the entire Project. The Contractor shall commence all causes of action arising out of or related to the Contract ~~in accordance with the requirements of the final dispute resolution method selected in this Agreement whether in contract, tort, breach of warranty, or otherwise, 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~~ by first complying with the Claims procedure set forth above in Section

21.2 and, if a Claim is timely and properly filed and resolved, by filing in accordance with the statute of limitations applicable under Michigan law. The Contractor waives all claims and causes of action not commenced in accordance with this Section 21.3.

§ 21.4 ~~If a claim, dispute or other matter in question relates to or is the subject of a mechanic's lien, the party asserting such matter may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.~~

§ 21.5 The parties shall endeavor to resolve their disputes by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with their Construction Industry Mediation Procedures in effect on the date of this Agreement. A request for mediation shall be made in writing, delivered to the other party to this Agreement, and filed with the person or entity administering the mediation. The request may be made concurrently with the binding dispute resolution 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, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.~~

§ 21.6 ~~If the parties have selected arbitration as the method for binding dispute resolution in this 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 the Construction Industry Arbitration Rules in effect on the date of this Agreement. 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 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.~~

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

§ 21.8 ~~Subject to the rules of the American Arbitration Association or other applicable arbitration rules, any party to an arbitration 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 a Claim not described in the written Consent.~~

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

§ 21.10 Continuing Contract Performance

Pending final resolution of a ~~Claim,~~ Claim or cause of action, except as otherwise agreed in writing, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 21.11 Waiver of Claims for Consequential Damages

The Contractor ~~and Owner waive claims against each other~~ waives claims against the Owner 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 20. Nothing contained in this Section 21.11 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

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

OTSEGO COUNTY ROAD COMMISSION

OWNER *(Signature)*	**CONTRACTOR** *(Signature)*
Kirk Harrier, Managing Director	
(Printed name and title)	*(Printed name and title)*

SECTION 01 10 00

SUMMARY

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Contract description.

B. Work by Owner.

C. Contractor's use of site and premises.

D. Owner occupancy.

E. Specification Conventions.

1.2 CONTRACT DESCRIPTION

A. Work of the Project comprises roof and building renovations including replacement of membrane roofing and reconfiguration of the entrance vestibule as described in the Drawings and Specifications and specific Bid Categories for each trade discipline. The project also includes a partial reroofing of the Middle/High School building.

B. Perform Work of the Contract under stipulated sum contract with Owner in accordance with Conditions of Contract.

1.3 WORK BY OWNER

A. Items noted NIC (Not in Contract), movable cabinets, and furnishings will be furnished and installed by Owner after Substantial Completion.

1.4 CONTRACTOR'S USE OF SITE AND PREMISES

A. Limit use of site and premises to allow:
   1. Owner occupancy.
   2. Work by Others and Work by Owner.
   3. Use of site and premises by the public.

B. Vehicular access to the site is limited to existing paved or gravel drives and parking areas. Where vehicular access across concrete sidewalks is required in connection with the work, Contractor shall protect sidewalks from damage using appropriate matting or bridging. Where vehicular access across lawns is required in connection with the work, Contractor shall restore lawn areas to original condition (fine grading, topsoil, seed and mulch).

C. Coordinate site and building access routes with Owner.

D. Coordinate disruption of any utility service or system which may affect the Owners use of the premises for normal operations.

1.5 OWNER OCCUPANCY

A. The Owner will occupy areas of the site and premises during the entire period of construction for the conduct of normal summer operations. Coordinate with the Owner to allow access by Owner personnel for cleaning, general maintenance, and other work by Owner.

B. Schedule the work with the Owner to accommodate Owner occupancy and to allow the Owner to use spaces prior to, and after completion of work in individual spaces.

C. Cooperate with Owner to minimize conflict, and to facilitate Owner's operations.

1.6 SPECIFICATION CONVENTIONS

A. These specifications are written in imperative mood and streamlined form. This imperative language is directed to the Contractor, unless specifically noted otherwise. The words “shall be” are included by inference where a colon (:) is used within sentences or phrases.

B. Contractor is responsible for the entire Work identified in the Contract Documents without regard to the specific location of the information within the Contract Documents.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 20 00

PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Contingency allowances.

B. Schedule of values.

C. Applications for payment.

D. Change procedures.

E. Defect assessment.

1.2 CONTINGENCY ALLOWANCES

A. A Contingency Allowance has been established by the Owner. Do not include a contingency allowance in the Bid Sum.

B. Funding for changes in the contract amount will be drawn from the Owner’s contingency allowance by Change Order.

1.3 SCHEDULE OF VALUES

A. Submit printed schedule on AIA Form G703 - Continuation Sheet for G702. Contractor's standard form or electronic media printout following format of specified AIA form will be considered.

B. Submit Schedule of Values in duplicate within 15 days after date of Owner-Contractor Agreement.

C. Format: Utilize Table of Contents of this Project Manual. Identify each line item with number and title of major specification Section. Identify site mobilization, bonds and insurance, and General Requirements as separate line items.

D. Include within each line item, direct proportional amount of Contractor's overhead and profit.

E. Revise schedule to list approved Change Orders, with each Application for Payment.

1.4 APPLICATIONS FOR PAYMENT

A. Submit one copy of each application on AIA Form G702 - Application and Certificate for Payment and AIA G703 - Continuation Sheet for G702 or approved Contractor's electronic media driven form.

B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.

C. Payment Period: Submit at intervals stipulated in the Agreement.

D. Substantiating Data: When Architect/Engineer requires substantiating information, submit data justifying dollar amounts in question.

1.5 CHANGE PROCEDURES

A. The Architect/Engineer will advise of minor changes in the Work not involving adjustment to Contract Sum/Price or Contract Time by issuing supplemental instructions in writing to the Contractor.

B. The Architect/Engineer may issue a Proposal Request or Bulletin including a detailed description of proposed change with supplementary or revised Drawings and specifications. Contractor will prepare and submit estimate of cost and any required change in Contract Time within 14 days.

C. Contractor may propose changes by submitting a request for change to Architect/Engineer, describing proposed change and its full effect on the Work. Include a statement describing reason for the change, and effect on Contract Sum/Price and Contract Time with full documentation and a statement describing effect on Work by separate or other Contractors.

D. Stipulated Sum/Price Change Order: Based on Proposal Request (Bulletins) and Contractor's fixed price quotation or Contractor's request for Change Order as approved by Architect/Engineer.

E. Unit Price Change Order: For contract unit prices and quantities, the Change Order will be executed on fixed unit price basis. For unit costs or quantities of units of work which are not pre-determined, execute Work under Construction Change Directive. Changes in Contract Sum/Price or Contract Time will be computed as specified for Time and Material Change Order.

F. Construction Change Directive: Architect/Engineer may issue directive, on AIA Form G713 Construction Change Directive signed by Owner, instructing Contractor to proceed with change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work, and designate method of determining any change in Contract Sum/Price or Contract Time. Promptly execute change.

G. Time and Material Change Order: Submit itemized account and supporting data after completion of change, within time limits indicated in Conditions of the Contract. Architect/Engineer will determine change allowable in Contract Sum/Price and Contract Time as provided in Contract Documents.

H. Maintain detailed records of work done on Time and Material basis. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work.

I. Document each quotation for change in cost or time with sufficient data to allow evaluation of quotation.

J. Change Order Forms: AIA G701 Change Order.

K. Execution of Change Orders: Architect/Engineer will issue Change Orders for signatures of parties as provided in Conditions of the Contract.

L. Correlation Of Contractor Submittals:
   1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Sum/Price.

2. Promptly revise progress schedules to reflect change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
3. Promptly enter changes in Project Record Documents.

1.6 DEFECT ASSESSMENT

A. Replace the Work, or portions of the Work, not conforming to specified requirements.

B. If, in the opinion of the Architect/Engineer, it is not practical to remove and replace the Work, the Architect/Engineer will direct appropriate remedy or adjust payment.
1. The defective Work may remain, but unit sum/price will be adjusted to new sum/price at discretion of Owner.
2. Defective Work will be partially repaired to instructions of Architect/Engineer, and unit sum/price will be adjusted to new sum/price at discretion of Owner.

C. Individual specification sections may modify these options or may identify specific formula or percentage sum/price reduction.

D. Authority of Architect/Engineer to assess defects is final.

E. Non-Payment For Rejected Products: Payment will not be made for rejected products for any of the following:
1. Products wasted or disposed of in a manner that is not acceptable.
2. Products determined as unacceptable before or after placement.
3. Products not completely unloaded from transporting vehicle.
4. Products placed beyond lines and levels of required Work.
5. Products remaining on hand after completion of the Work.
6. Loading, hauling, and disposing of rejected products.

1.7 UNIT PRICES

A. Authority: Measurement methods are delineated in individual specification sections.

B. Measurement methods delineated in individual specification sections complement criteria of this section. In event of conflict, requirements of individual specification section govern.

C. Take measurements and compute quantities. Architect will verify measurements and quantities.

D. Payment Includes: Full compensation for required labor, products, tools, equipment, plant and facilities, transportation, services and incidentals; erection, application or installation of item of the Work; overhead and profit.

E. Final payment for Work governed by unit prices will be made on basis of actual measurements and quantities accepted by Architect/Engineer multiplied by unit sum/price for Work incorporated in or made necessary by the Work.

F. Measurement Of Quantities:
1. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.
2. Measurement by Area: Measured by square dimension using mean length and width or radius.
3. Linear Measurement: Measured by linear dimension, at item centerline or mean chord.

4. Stipulated Sum/Price Measurement: Items measured by volume, area, or linear means or combination, as appropriate, as completed item or unit of the Work.

G. Unit Price Schedule:
   1. Item: Remove saturated roof insulation and replace with new; Section 07 54 19.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Coordination and project conditions.

B. Preconstruction meeting.

C. Progress meetings.

D. Periodic construction visits.

E. Pre-installation meetings.

F. Project Record Documents.

G. Acceptance of Preceding Work.

H. Cutting and patching.

I. Special procedures.

1.2 COORDINATION AND PROJECT CONDITIONS

A. Coordinate scheduling, submittals, and Work of various sections of Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

B. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, operating equipment.

C. Coordinate space requirements, supports, and installation of mechanical and electrical Work 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.

D. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within construction. Coordinate locations of fixtures and outlets with finish elements.

E. Coordinate completion and clean-up of Work of separate sections in preparation for Substantial Completion.

F. 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.

1.3 PRECONSTRUCTION MEETING

A. Architect/Engineer will schedule meeting after Notice of Award.

B. Attendance Required: Owner, Architect/Engineer, and Contractor.

C. Agenda:
1. Execution of Owner-Contractor Agreement.
2. Submission of executed bonds and insurance certificates.
3. Distribution of Contract Documents.
4. Submission of list of Subcontractors, list of products, schedule of values, and progress schedule.
5. Designation of personnel representing parties in Contract, and Architect/Engineer.
6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
7. Scheduling.
8. Scheduling activities of testing agency.

D. Record minutes and distribute copies within two days after meeting to participants, with copies to Architect/Engineer, Owner, and those affected by decisions made.

1.4 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the Work at maximum bi-monthly intervals.

B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.

C. Attendance Required: Job superintendent, major subcontractors and suppliers, Owner, Architect/Engineer, 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 impeding 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. Coordination of work by Owner’s Contractor with work of the General Contract.
15. Project Record Documents.

E. Record minutes and distribute copies within two days after meeting to participants, with copies to Architect/Engineer, Owner, and those affected by decisions made.

1.5 PERIODIC CONSTRUCTION VISITS

A. The Architect and Owner will visit the project site periodically. The purpose of the visits will be to monitor the progress and quality of the work.

B. The Contractor's Site Superintendent shall be available for meetings with the Architect and Owner.

C. Agenda:
1. Review of Work in progress.
2. Field observations, problems, and decisions.
3. Identification of problems which impede planned progress.
4. Maintenance of progress schedule.
5. Corrective measures to regain projected schedules.
6. Planned progress during succeeding work period.
7. Maintenance of quality and work standards.
8. Other business relating to Work.

1.6 PRE-INSTALLATION MEETINGS

A. When required in individual specification sections, convene pre-installation meetings at Project site prior to commencing work of specific section.

B. Require attendance of parties directly affecting, or affected by, Work of specific section.

C. Notify Architect/Engineer four days in advance of meeting date.

D. Prepare agenda and preside at meeting:
1. Review conditions of installation, preparation and installation procedures.
2. Review coordination with related work.

E. Record minutes and distribute copies within two days after meeting to participants, with copies to Architect/Engineer, Owner, and those affected by decisions made.

1.7 PROJECT RECORD DOCUMENTS

A. Contractor shall maintain and update Project Record Drawings (As-Built Drawings) on site during construction. Contractor and each Subcontractor shall be responsible to update the as built drawings on a weekly basis.

B. Project Record Documents shall be available for review by the Architect.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.1 ACCEPTANCE OF PRECEDING WORK

A. Before starting any operation, each Contractor(s) shall examine work performed by others to which their work adjoins or is applied and shall report to the Architect any conditions that will prevent satisfactory accomplishment of their work.

B. Failure to notify the Architect of deficiencies or faults in preceding work will constitute acceptance thereof and waive of any claims to its usability.

3.2 CUTTING AND PATCHING

A. Employ skilled and experienced installer to perform cutting and patching.

B. Submit written request in advance of cutting or altering elements affecting:
   1. Structural integrity of element.
   2. Integrity of weather-exposed or moisture-resistant elements.
   3. Efficiency, maintenance, or safety of element.
   4. Visual qualities of sight exposed elements.
   5. Work of Owner or separate contractor.

C. Execute cutting, fitting, and patching including excavation and fill, to complete Work, and to:
   1. Fit the several parts together, to integrate with other Work.
   2. Uncover Work to install or correct ill-timed Work.
   3. Remove and replace defective and non-conforming Work.
   4. Remove samples of installed Work for testing.
   5. Provide openings in elements of Work for penetrations of mechanical and electrical Work.

D. Execute work by methods to avoid damage to other Work, and to provide proper surfaces to receive patching and finishing.

E. Cut masonry and concrete materials using masonry saw or core drill.

F. Restore Work with new products in accordance with requirements of Contract Documents.

G. Fit Work tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

H. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.

I. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for assembly, refinish entire unit.

3.3 SPECIAL PROCEDURES

A. Materials: As specified in product sections; match existing with new products for patching and extending work. Use salvaged products only where indicated in Drawings.

B. Employ skilled and experienced installer to perform alteration work.

C. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.

D. Remove unsuitable material not marked for salvage, including rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.

E. Remove debris and abandoned items from area and from concealed spaces.

F. Prepare surface and remove surface finishes to permit installation of new work and finishes.

G. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.

H. Remove, cut, and patch Work in manner to minimize damage and to permit restoring products and finishes to original or specified condition.

I. Refinish existing visible surfaces to remain in renovated rooms and spaces, to specified condition for each material, with neat transition to adjacent finishes.

J. Where new Work abuts or aligns with existing, provide smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.

K. When finished surfaces are cut so that smooth transition with new Work is not possible, terminate existing surface along straight line at natural line of division and submit recommendation to Architect/Engineer for review.

L. Where change of plane of 1/4 inch or more occurs, request instructions from Architect/Engineer.

M. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.

N. Finish surfaces as specified in individual product sections.

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Submittal procedures.

B. Construction progress schedules.

C. Proposed products list.

D. Product data.

E. Shop drawings.

F. Samples.

G. Design data.

H. Test reports.

I. Certificates.

J. Manufacturer's instructions.

K. Manufacturer's field reports.

1.2 SUBMITTAL PROCEDURES

A. Electronic Submittals: Prepare and transmit submittals of Product Data, Shop Drawings, Design Data, Test Reports, Certificates, Manufacturers Instructions, and Erection Drawings to Architect in electronic (.pdf) format.

B. Samples: Where specifications require the submittal of samples for verification or selection, submit physical samples and/or physical color charts to the Architect. Electronic reproductions of color charts will not be accepted. Include Contractor’s transmittal form identifying Project, Contractor, subcontractor and supplier; product designated by name indicated in specifications.

C. Transmit electronic submittals with Contractor’s transmittal form:
   1. Sequentially number submittals. Include the specification section in the submittal numbering system. Mark revised submittals with original number and sequential alphabetic suffix.
   2. Identify Project, Contractor, subcontractor and supplier; product designated by name indicated in specifications.

D. Include Contractor's certification (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 requirements of the Work and Contract Documents.

E. Schedule submittals to expedite Project. Coordinate submission of related items.

F. For each submittal for review, allow 15 days excluding delivery time to and from Contractor. Submittals for long lead time items shall be expedited by the Contractor in order to allow for the Owner's completion schedule. Notify Architect/Engineer of long lead time items requiring expedited review.

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

H. Architect will return files electronically following review. Contractor shall distribute copies of reviewed submittals to appropriate parties.

I. Contractor shall produce and provide a paper copy of approved submittals to the Architect, and to governing authorities upon request.

J. Where specified in specific Submittals Articles, Contractor shall provide a paper copy of approved submittals to the Owner at closeout.

K. When revised for resubmission, identify changes made since previous submission.

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

1.3 CONSTRUCTION PROGRESS SCHEDULES

A. Submit initial schedules within 7 days after Notice to Proceed. After review, resubmit required revised data within ten days.

B. Submit revised Progress Schedules with each Application for Payment.

C. Distribute copies of reviewed schedules to Project site file, subcontractors, suppliers, and other concerned parties.

D. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

E. Utilize Contractor's standard computer generated schedule format.

F. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate early and late start, early and late finish, float dates, and duration.

G. Indicate estimated percentage of completion for each item of Work at each submission.

H. Revisions To Schedules:
   1. Indicate progress of each activity to date of submittal, and projected completion date of each activity.
   2. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.
   3. Prepare narrative report to define problem areas, anticipated delays, and impact on Schedule. Report corrective action taken, or proposed, and its effect [including effect of changes on schedules of separate contractors].

1.4 PROPOSED PRODUCTS LIST

A. Within 7 days after Notice to Proceed, submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.

B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.5 PRODUCT DATA

A. Product Data: Submit to Architect/Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. Mark submittal to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

C. Indicate product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

D. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents described in Section 01 70 00 - Execution and Closeout Requirements.

1.6 SHOP DRAWINGS

A. Shop Drawings: Submit to Architect/Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

C. When required by individual specification sections, provide shop drawings signed and sealed by professional engineer responsible for designing components shown on shop drawings.
   1. Include signed and sealed calculations to support design.
   2. Submit drawings and calculations in form suitable for submission to and approval by authorities having jurisdiction.
   3. Make revisions and provide additional information when required by authorities having jurisdiction.

D. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents described in Section 01 70 00 - Execution and Closeout Requirements.

1.7 SAMPLES

A. Samples: Submit to Architect/Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. Samples For Selection as Specified in Product Sections:
   1. Submit to Architect/Engineer for aesthetic, color, or finish selection.

2. Submit samples of finishes from full range of manufacturers' standard colors, including premium and/or custom colors where specified, textures, and patterns for Architect/Engineer selection.

C. Submit samples to illustrate functional and aesthetic characteristics of Products, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

D. Include identification on each sample, with full Project information.

E. Submit number of samples specified in individual specification sections; Architect/Engineer will retain samples.

F. Samples will not be used for testing purposes unless specifically stated in specification section.

G. Architect will issue a schedule indicating colors selected.

1.8 DESIGN DATA

A. Submit for Architect/Engineer's knowledge as contract administrator or for Owner.

B. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.9 TEST REPORTS

A. Submit for Architect/Engineer's knowledge as contract administrator or for Owner.

B. Submit test reports for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.10 CERTIFICATES

A. When specified in individual specification sections, submit certification by manufacturer, installation/application subcontractor, or Contractor to Architect/Engineer, in quantities specified for Product Data.

B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Architect/Engineer.

1.11 MANUFACTURER'S INSTRUCTIONS

A. When specified in individual specification sections, submit manufacturer’s instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to Architect/Engineer for information.

B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.12 MANUFACTURER'S FIELD REPORTS

A. Submit reports for Architect/Engineer's benefit as contract administrator or for Owner.

B. Submit report within 5 days of observation to Architect/Engineer for information.

C. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 40 00

QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Quality control and control of installation.

B. Tolerances.

C. References.

D. Labeling.

E. Manufacturers' field services.

F. Examination.

G. Preparation.

1.2 QUALITY CONTROL AND 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. When manufacturers' instructions conflict with Contract Documents, request clarification from Architect/Engineer 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. Perform Work by persons qualified to produce required and specified quality.

F. Verify field measurements are as indicated on Shop Drawings or as instructed by manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.3 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' tolerances. When manufacturers' tolerances conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

1.4 REFERENCES

A. For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of standard, except when more rigid requirements are specified or are required by applicable codes.

B. Conform to reference standard by date of issue current on date of Contract Documents, except where specific date is established by code.

C. Obtain copies of standards where required by product specification sections.

D. When specified reference standards conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.

E. Neither contractual relationships, duties, nor responsibilities of parties in Contract nor those of Architect/Engineer shall be altered from Contract Documents by mention or inference otherwise in reference documents.

1.5 LABELING

A. Attach label from agency approved by authority having jurisdiction for products, assemblies, and systems required to be labeled by applicable code.

B. Label Information: Include manufacturer's or fabricator's identification, approved agency identification, and the following information, as applicable, on each label.
   1. Model number.
   2. Serial number.
   3. Performance characteristics.

1.6 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/Engineer 30 days in advance of required observations.

C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

D. Refer to Section 01 33 00 - Submittal Procedures, MANUFACTURERS' FIELD REPORTS article.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.

B. Verify existing substrate is capable of structural support or attachment of new Work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Verify utility services are available, of correct characteristics, and in correct locations.

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 new material or substance in contact or bond.

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Temporary Utilities:
1. Temporary electricity.
2. Temporary heating.
3. Temporary cooling.
4. Temporary ventilation.
5. Telephone service.
6. Email service
7. Temporary water service.
8. Temporary sanitary facilities.

B. Construction Facilities:
1. Field offices and sheds.
2. Parking.
3. Progress cleaning and waste removal.
4. Fire prevention facilities.

C. Temporary Controls:
1. Barriers.
2. Enclosures and protection.
3. Security.

D. Removal of utilities, facilities, and controls.

1.2 TEMPORARY ELECTRICITY

A. Owner will pay cost of energy used. Exercise measures to conserve energy. Utilize Owner's existing power service.

B. Permanent convenience receptacles may be utilized during construction.

1.3 TEMPORARY HEATING

A. Provide and pay for heating devices and heat as needed to maintain specified conditions for construction operations.

B. Maintain minimum ambient temperature of 50 degrees F in areas where construction is in progress, unless indicated otherwise in product sections.

1.4 TEMPORARY COOLING

A. Provide and pay for cooling devices and cooling as needed to maintain specified conditions for construction operations.

B. Maintain maximum ambient temperature of 80 degrees F in areas where construction is in progress, unless indicated otherwise in specifications.

1.5 TEMPORARY VENTILATION

A. Ventilate enclosed areas to achieve curing of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

1.6 TELEPHONE SERVICE

A. Provide, maintain, and pay for telephone service to field office at time of project mobilization.

1.7 EMAIL SERVICE

A. Provide, maintain, and pay for email service to site Superintendent and Project Manager at time of project mobilization.

1.8 TEMPORARY WATER SERVICE

A. Owner will pay cost of temporary water. Exercise measures to conserve energy. Utilize Owner's existing water system, extend and supplement with temporary devices as needed to maintain specified conditions for construction operations.

B. Extend branch piping with outlets located so water is available by hoses with threaded connections. Provide temporary pipe insulation to prevent freezing.

1.9 TEMPORARY SANITARY FACILITIES

A. Existing designated facilities may be used during construction operations. Maintain daily in clean and sanitary condition.

1.10 FIELD OFFICES AND SHEDS

A. Provide storage trailers for materials requiring protected storage. Storage trailers may be placed on-site in paved parking areas where designated by Owner.

B. Materials not requiring protected storage may be placed on-site in paved parking areas where designated by Owner.

1.11 PARKING

A. Use of existing on-site streets and driveways used for construction traffic is permitted. Tracked vehicles not allowed on paved areas.

B. Do not allow heavy vehicles or construction equipment in parking areas without measures to prevent damage to pavement.

C. Coordinate parking for construction personnel with the Owner to allow for Owner’s operations.

1.12 PROGRESS CLEANING AND WASTE REMOVAL

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in 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 spaces.

C. Collect and remove waste materials, debris, and rubbish from site weekly and dispose off-site.

1.13 FIRE PREVENTION FACILITIES

A. Smoking on school property is prohibited by law.

B. Establish fire watch for cutting and welding and other hazardous operations capable of starting fires. Maintain fire watch before, during, and after hazardous operations until threat of fire does not exist.

C. Portable Fire Extinguishers: NFPA 10; 10 pound capacity, 4A-60B: C UL rating.
   1. Provide one fire extinguisher on each floor of buildings under construction and demolition.
   2. Provide minimum one fire extinguisher in every construction trailer and storage shed.
   3. Provide minimum one fire extinguisher on roof during roofing operations using heat producing equipment.

1.14 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations.

B. Provide barriers to separate construction areas from adjacent occupied areas.

C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.15 ENCLOSURES AND PROTECTION

A. Interior Enclosures:
   1. Provide temporary enclosures as required to prevent penetration of dust and moisture into adjacent building areas, and to prevent damage to existing materials and equipment.
   2. Partition Construction: Framing and suitable plastic sheeting supported to prevent displacement during construction operations.

B. Exterior Enclosures:
   1. Provide temporary weather tight closure of exterior openings to accommodate acceptable working conditions and protection for products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.16 SECURITY

A. Security Program:
   1. Protect Work from theft, vandalism, and unauthorized entry.

2. Initiate program in coordination with Owner's existing security system at project mobilization.
3. Maintain program throughout construction period until Owner acceptance precludes need for Contractor security.

B. Entry Control:
1. Restrict entrance of persons and vehicles into Project site and existing facilities.
2. Allow entrance only to authorized persons with proper identification.

C. Owner will control entrance of persons and vehicles related to Owner's operations.

1.17 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, materials, prior to Substantial Completion inspection.

B. Remove underground installations to minimum depth of 2 feet. Grade site as indicated on Drawings.

C. Clean and repair damage caused by installation or use of temporary work.

D. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Products.

B. Product delivery requirements.

C. Product storage and handling requirements.

D. Product options.

E. Product substitution procedures.

F. Equipment electrical characteristics and components.

1.2 PRODUCTS

A. Furnish products of qualified manufacturers suitable for intended use. Furnish products of each type by single manufacturer unless specified otherwise.

B. Do not use materials and equipment removed from existing premises, except as specifically permitted by Contract Documents.

C. Furnish interchangeable components from same manufacturer for components being replaced.

1.3 PRODUCT DELIVERY REQUIREMENTS

A. Transport and handle products in accordance with manufacturer's instructions.

B. Promptly inspect shipments to ensure products comply with requirements, quantities are correct, and products are undamaged.

C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.4 PRODUCT STORAGE AND HANDLING REQUIREMENTS

A. Store and protect products in accordance with manufacturers' instructions.

B. Store with seals and labels intact and legible.

C. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.

D. For exterior storage of fabricated products, place on sloped supports above ground.

E. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.

F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

G. Store loose granular materials on solid flat surfaces in well-drained area. Prevent mixing with foreign matter.

H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

I. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

1.5 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Products of one of manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with an “Or Equal” provision: Any Product meeting the quality standards or description. Pre-bid requests for approval of Products specified with an “or equal” provision will not be acknowledged. Acceptability of “or equal” Products will be determined by the Architect during the submittal process based upon the quality or suitability of the Product proposed.

D. Products Specified by Naming One or More Manufacturers with Provision for Substitutions: Submit request for substitution for any manufacturer not named in accordance with the following article.

1.6 PRODUCT SUBSTITUTION PROCEDURES

A. Instructions to Bidders specify time restrictions for submitting requests for Substitutions during bidding period to requirements specified in this section.

B. Post-Bid Substitutions will only be considered when a product becomes unavailable through no fault of Contractor.

C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.

D. A request constitutes a representation that Bidder:
   1. Has investigated proposed product and determined that it meets or exceeds quality level of specified product.
   2. Will provide same warranty for Substitution as for 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/or Architect/Engineer for review or redesign services associated with re-approval by authorities having jurisdiction.

E. 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 Contract Documents.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 70 00

EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Closeout procedures.

B. Final cleaning.

C. Project record documents.

D. Operation and maintenance data.

E. Manual for materials and finishes.

F. Manual for equipment and systems.

G. Manual for

H. Product warranties and product bonds.

1.2 CLOSEOUT PROCEDURES

A. Submit certification that the work is Substantially Complete and approved for occupancy by the Authority Having Jurisdiction, and Contractor’s list of items to be completed to the Architect.

B. Architect will inspect the work and will prepare a Punch List of items to be corrected or completed for final acceptance of the work.

C. Upon completion of all work and correction of items included on the Punch List prepared by the Architect, submit written certification that Contract Documents have been reviewed, and that Work is complete in accordance with Contract Documents and ready for Architect/Engineer's final review. Architect will visit the site and will verify that all items have been properly completed and/or corrected.

D. Contractor shall reimburse the Owner for all re-inspection costs incurred resulting from Contractor’s failure to complete and/or correct all items identified by the Architect. Charges to the Contractor shall be made at such times and in such amounts as the Architect invoices the Owner under the rate schedule in effect at the time of service. Such charges to the Contractor will be deducted from the Contractor’s progress payment or final payment as applicable.

E. Provide submittals to Architect/Engineer required by authorities having jurisdiction.

F. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

1.3 FINAL CLEANING

A. Execute final cleaning prior to final project assessment.

B. Clean equipment and fixtures to sanitary condition with cleaning materials appropriate to surface and material being cleaned.

C. Replace filters of operating equipment.

D. Remove waste and surplus materials, rubbish, and construction facilities from site.

1.4 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:
   1. Drawings.
   2. Specifications.
   3. Addenda.
   4. Change Orders and other modifications to the Contract.
   5. Reviewed Shop Drawings, Product Data, and Samples.
   6. Manufacturer's instruction for assembly, installation, and adjusting.

B. Ensure entries are complete and accurate, enabling future reference by Owner.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress, not less than weekly.

E. 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 Addenda and modifications.

F. 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. Details not on original Contract drawings.

G. Submit documents to Architect/Engineer with claim for final Application for Payment.

1.5 OPERATION AND MAINTENANCE DATA

A. Submit data bound in 8-1/2 x 11 inch (A4) text pages, three D side ring binders with durable plastic covers.

B. Prepare binder cover with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, and subject matter of binder when multiple binders are required.

C. Internally subdivide binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.

D. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

E. Contents: Prepare Table of Contents for each volume, with each product or system description identified, typed on white paper, in three parts as follows:
   1. Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, 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.

1.6 MANUAL FOR MATERIALS AND FINISHES

A. Submit one copy of completed volumes 15 days prior to final inspection. Draft copy will be reviewed and returned, with Architect/Engineer comments. Revise content of document sets as required prior to final submission.

B. Submit two sets of revised final volumes in final form with claim for Final Application for Payment.

C. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations. Include information for re-ordering custom manufactured products.

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

E. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Include recommendations for inspections, maintenance, and repair.

F. Additional Requirements: As specified in individual product specification sections.

G. Include listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.7 MANUAL FOR EQUIPMENT AND SYSTEMS

A. Submit one copy of completed volumes 15 days prior to final inspection. Draft copy will be reviewed and returned, with Architect/Engineer comments. Revise content of document sets as required prior to final submission.

B. Submit two sets of revised final volumes in final form with claim for Final Application for Payment.

C. Each Item of Equipment and Each System: Include description of unit or system, and component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and model number of replaceable parts.

D. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.

E. Include color coded wiring diagrams as installed.

F. 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 special operating instructions.

G. 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.

H. Include servicing and lubrication schedule, and list of lubricants required.

I. Include manufacturer's printed operation and maintenance instructions.

J. Include sequence of operation by controls manufacturer.

K. Include original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

L. Include control diagrams by controls manufacturer as installed.

M. Include Contractor's coordination drawings, with color coded piping diagrams as installed.

N. Include charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

O. Include list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

P. Include test and balancing reports as specified in Section 01 40 00 - Quality Requirements.

Q. Additional Requirements: As specified in individual product specification sections.

R. Include listing in Table of Contents for design data, with tabbed dividers and space for insertion of data.

1.8 PRODUCT WARRANTIES AND PRODUCT BONDS

A. Obtain warranties and bonds executed in duplicate by responsible subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of work.

B. Execute and assemble transferable warranty documents and bonds from subcontractors, suppliers, and manufacturers.

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

D. Co-execute submittals when required.

E. Include Table of Contents and assemble in three D side ring binder with durable plastic cover.

F. Submit prior to final Application for Payment.

G. Time Of Submittals:
   1. For equipment or component parts of equipment put into service during construction with Owner's permission, provide extended warranty for the full length of the warranty period beyond the Date of Substantial Completion.
   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 date of acceptance as beginning of warranty or bond period.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 02 41 19

SELECTIVE STRUCTURE DEMOLITION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Demolishing designated building equipment and fixtures.
   2. Demolishing designated construction.
   3. Cutting and alterations for completion of the Work.
   4. Protecting items designated to remain.
   5. Removing demolished materials.

1.2 CLOSEOUT SUBMITTALS

A. Project Record Documents: Accurately record actual locations of capped utilities, concealed utilities discovered during demolition, and subsurface obstructions.

1.3 QUALITY ASSURANCE

A. Conform to applicable code for demolition work, dust control, and products requiring electrical disconnection and re-connection

B. Conform to applicable code for procedures when hazardous or contaminated materials are discovered.

C. Obtain required permits from authorities having jurisdiction.

1.4 SEQUENCING

A. Owner will conduct salvage operations before demolition begins to remove materials Owner chooses to retain.

1.5 SCHEDULING

A. Cooperate with Owner in scheduling noisy operations and waste removal that may impact Owners operation and in adjoining spaces.

B. Coordinate utility and building service interruptions with Owner.
   1. Do not disable or disrupt building fire or life safety systems without three days prior written notice to Owner.
   2. Schedule tie-ins to existing systems to minimize disruption.
   3. Coordinate Work to ensure fire sprinklers, fire alarms, smoke detectors, emergency lighting, exit signs and other life safety systems remain in full operation in occupied areas.

1.6 PROJECT CONDITIONS

A. Conduct demolition to minimize interference with occupied building areas.

B. Cease operations immediately if structure appears to be in danger and notify Architect/Engineer. Do not resume operations until directed.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 PREPARATION

A. Notify affected utility companies before starting work and comply with their requirements.

B. Mark location and termination of utilities.

C. Erect, and maintain temporary barriers and security devices, including warning signs and lights, and similar measures, for protection of the public, Owner, and existing improvements indicated to remain.

D. Erect and maintain weatherproof closures for exterior openings.

E. Erect and maintain temporary partitions to prevent spread of dust, odors, and noise to permit continued Owner occupancy.

F. Prevent movement of structure; provide temporary bracing and shoring required to ensure safety of existing structure.

G. Provide appropriate temporary signage including signage for exit or building egress.

H. Do not close or obstruct building egress path during building occupancy.

I. Do not disable or disrupt building fire or life safety systems without 3 days prior written notice to Owner.

3.2 DEMOLITION

A. Conduct demolition to minimize interference with adjacent occupied building areas.

B. Maintain protected egress from, and access to, adjacent existing buildings at all times.

C. Do not close or obstruct public roadways or sidewalks without permits.

D. Cease operations immediately when structure appears to be in danger and notify Architect/Engineer.

E. Disconnect and remove designated utilities within demolition areas.

F. Cap and identify abandoned utilities at termination points when utility is not completely removed. Annotate Record Drawings indicating location and type of service for capped utilities remaining after demolition.

G. Demolish in orderly and careful manner. Protect existing improvements, supporting structural members.

H. Carefully remove building components indicated to be reused.
   1. Disassemble components as required to permit removal.
   2. Package small and loose parts to avoid loss.
   3. Mark components and packaged parts to permit reinstallation.
   4. Store components, protected from construction operations, until reinstalled.

I. Owner reserves first right of salvage to any materials removed. Remove all other demolished materials from site unless specifically noted otherwise. Do not burn or bury materials on site.

J. Remove materials as Work progresses. Upon completion of Work, leave areas in clean condition.

K. Remove temporary Work.

END OF SECTION

SECTION 06 10 00

ROUGH CARPENTRY

PART 1 GENERAL

1.1 SUMMARY

A. Section includes structural, wall, and roof framing; built-up structural beams; floor, wall, and roof sheathing; sill gaskets; preservative treatment of wood; miscellaneous framing and sheathing; and concealed wood blocking for support.

1.2 REFERENCES

A. American National Standards Institute:
   1. ANSI A135.4 - Basic Hardboard.
   2. ANSI A208.1 - Mat-Formed Wood Particleboard.

B. American Wood-Preservers' Association:
   1. AWPA M4 - Standard for the Care of Preservative-Treated Wood Products.
   2. AWPA U1 - Use Category System: User Specification for Treated Wood.

C. ASTM International:
   1. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
   2. ASTM B695 - Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel
   3. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
   4. ASTM C1280 - Standard Specification for Application of Gypsum Sheathing.
   5. ASTM C1396/C1396M - Standard Specification for Gypsum Board.
   6. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
   7. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
   8. ASTM F1667 - Standard Specification for Driven Fasteners: Nails, Spikes, and Staples.

D. National Lumber Grades Authority:
   1. NLGA - Standard Grading Rules for Canadian Lumber.

E. Northeastern Lumber Manufacturers Association:
   1. NELMA - Standard Grading Rules for Northeastern Lumber.

F. The Redwood Inspection Service:
   1. RIS - Standard Specifications for Grades of California Redwood Lumber.

G. Southern Pine Inspection Bureau:
   1. SPIB - Standard Grading Rules for Southern Pine Lumber.

H. U.S. Department of Commerce National Institute of Standards and Technology:
   1. DOC PS 1 - Construction and Industrial Plywood.
   2. DOC PS 2 - Performance Standard for Wood-Based Structural-Use Panels.
   3. DOC PS 20 - American Softwood Lumber Standard.

I. West Coast Lumber Inspection Bureau:
   1. WCLIB - Standard Grading Rules for West Coast Lumber.

J. Western Wood Products Association:
   1. WWPA G-5 - Western Lumber Grading Rules.

1.3 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

B. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.4 QUALITY ASSURANCE

A. Section 01 40 00 – Quality Requirements: Requirements for compliance with reference standards.

B. Perform Work in accordance with the following:
   1. Lumber Grading Agency: Certified by DOC PS 20.
   2. Wood Structural Panel Grading Agency: Certified by EWA - The Engineered Wood Association.
   3. Lumber: DOC PS 20.
   4. Wood Structural Panels: DOC PS 1 or DOC PS 2.

C. In lieu of grade stamping exposed to view lumber and wood structural panels, submit manufacturer's certificate certifying Products meet or exceed specified requirements.

D. Apply label from agency approved by authority having jurisdiction to identify each preservative treated material.

PART 2 PRODUCTS

2.1 LUMBER MATERIALS

A. Lumber Grading Rules: NLGA.

B. Beam Framing 2x6 through 4x16: SPF species, #2 grade or better, 19 percent maximum moisture content.

C. Joist Framing: SPF species, #2 grade or better, 19 percent maximum moisture content.

D. Rafter Framing: SPF species, #2 grade or better, 19 percent maximum moisture content.

E. Non-structural Light Framing: SPF species, #2 grade or better, 19 percent maximum moisture content.

F. Studding: SPF species, #2 grade or better, 19 percent maximum moisture content.

G. Wall top plates bearing loads from trusses or rafters: SYP species, #2 grade or better, 19 percent maximum moisture content.

H. Wall sill plates in contact with concrete: SYP species, #2 grade or better, 19 percent maximum moisture content, pressure preservative treated.

I. Miscellaneous Framing: SPF species, #2 grade or better, 19 percent maximum moisture content.

2.2 ENGINEERED LUMBER PRODUCTS

A. Beams and Headers as indicated on Plans (Contractor option).

B. Provide Gang-Lam LVL 2950Fb-2.0E as manufactured by LP Engineered Wood Products
1. Modulus of elasticity: 2,000,000 psi
2. Flexural stress: 2,950 psi
3. Compression perpendicular to grain parallel to wide face of strands: 1020 psi
4. Compression parallel to grain: 3,200 psi
5. Horizontal shear perpendicular to wide face of strands: 290 psi

C. Sizes: Provide equivalent strength as conventional lumber beams and headers indicated on Plans.

2.3 SHEATHING MATERIALS

A. Wood Structural Panel Roof Sheathing: EWA Rated Sheathing; Oriented Strand Board; Exposure Durability 1; unsanded.

B. Wood Structural Panel Wall Sheathing: EWA Rated Sheathing, Oriented Strand Board; Exposure Durability 1; sanded where exposed, otherwise unsanded.

C. Wood Structural Panel Wall Sheathing for installation within 8 inches of exterior finish grade: EWA Rated Plywood; Exposure Durability 1; unsanded, pressure preservative treated for ground contact.

2.4 SHEATHING AND UNDERLAYMENT LOCATIONS

A. Sloped Roof Sheathing: 5/8 inch thick, Span Rating 40/20, 48 x 96 inch sized sheets, tongue and groove edges.

B. Above Grade Wall Sheathing: 1/2 inch thick, Span Rating 32/16, 48 x 96 inch sized sheets, square edges, preservative treated when installed within 8 inches of exposed exterior grade.

2.5 ACCESSORIES

A. Fasteners and Anchors:
1. Fasteners: ASTM A153/A153M, hot dipped galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.
2. Anchors: Epoxy screen tube and bolt for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Bolt for anchorages to steel.

B. Sill Gasket on top of concrete slab at perimeter exterior walls: ¼ inch thick, plate width, closed cell polyethylene foam from continuous rolls.

C. Building Paper: Spun bonded polyethylene.

2.6 FACTORY WOOD TREATMENT

A. Wood Preservative (Pressure Treatment): AWPA U1, Commodity Specification A-Sawn Products or F-Wood Composites using water-borne preservative.

B. Wood Preservative (Surface Application): Clear type, compatible with pressure treatment.

C. Moisture Content After Treatment: Redried.
   1. Lumber: Maximum 19 percent.
   2. Structural Panels: Maximum 15 percent.

PART 3 EXECUTION

3.1 FRAMING

A. Set structural members level and plumb, in correct position.

B. Fasten framing in accordance with applicable code.

C. Make provisions for erection loads, and for sufficient temporary bracing to maintain structure safe, plumb, and in alignment until completion of erection and installation of permanent bracing.

D. Place horizontal members, crown side up.

E. Construct load bearing framing and curb members full length without splices.

F. Double members at openings over 16 inches wide. Space short studs over and under opening to stud spacing.

G. Place sill gasket directly on cementitious foundation at perimeter exterior walls.

H. Coordinate installation of prefabricated wood trusses,

3.2 SHEATHING

A. Fasten sheathing in accordance with applicable code.

B. Secure roof sheathing with longer edge (strength axis) perpendicular to framing members and with ends staggered and sheet ends over bearing.

C. Secure wall sheathing with long dimension perpendicular to wall studs, with ends over firm bearing and staggered.

D. Place building paper horizontally over wall sheathing; weather lap edges and ends.

3.3 SITE APPLIED WOOD TREATMENT

A. Treat site-sawn cuts. Apply preservative to site-sawn cuts in accordance with AWPA M4.

B. Allow preservative to dry prior to erecting members.

3.4 TOLERANCES

A. Section 01 40 00 - Quality Requirements: Tolerances.

B. Framing Members: 1/4 inch from indicated position, maximum.

C. Surface Flatness of Floor: 1/4 inch in 10 feet maximum, and 1/2 inch in 30 feet maximum.

END OF SECTION

SECTION 06 17 53

SHOP-FABRICATED WOOD TRUSSES

PART 1 GENERAL

1.1 SUMMARY

A. Section includes shop fabricated wood trusses for roof and floor framing; bridging, bracing, and anchorage; and preservative treatment of wood.

B. Related Sections:
   1. Section 06 10 00 - Rough Carpentry.

1.2 REFERENCES

A. ASTM International:
   1. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
   2. ASTM A240/A240M - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
   3. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
   4. ASTM B695 - Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel
   5. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
   6. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
   7. ASTM F1667 - Standard Specification for Driven Fasteners: Nails, Spikes, and Staples.

B. National Lumber Grades Authority:
   1. NLGA - Standard Grading Rules for Canadian Lumber.

C. The Redwood Inspection Service:
   1. RIS - Standard Specifications for Grades of California Redwood Lumber.

D. Southern Pine Inspection Bureau:
   1. SPIB - Standard Grading Rules for Southern Pine Lumber.

E. Truss Plate Institute:
   1. TPI 1 - National Design Standard for Metal Plate Connected Wood Truss Construction.

F. U. S Department of Commerce National Institute of Standards and Technology:
   1. DOC PS 1 - Construction and Industrial Plywood.
   2. DOC PS 2 - Performance Standard for Wood-Based Structural-Use Panels.
   3. DOC PS 20 - American Softwood Lumber Standard.

G. West Coast Lumber Inspection Bureau:
   1. WCLIB - Standard Grading Rules for West Coast Lumber.

H. Western Wood Products Association:
   1. WWPA G-5 - Western Lumber Grading Rules.

1.3 DESIGN REQUIREMENTS

A. Design for roof and floor Live and Dead Loads indicated on Drawings with a deflection limit of 1/360 of span.
   1. Design for individual mechanical unit point loads as well as other loads indicated.

B. Design trusses for maximum bearing pressure of 425 psi.

C. Selection and specification of all truss to truss connectors appropriate to the connection condition and loading requirements is the responsibility of the Truss Designer.

1.4 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

B. Shop Drawings: Indicate sizes and spacing of trusses and associated components, web and chord sizes, plate sizes, structural connectors, bearing surface area requirements, loads and truss cambers, framed openings, locations for temporary and permanent bridging and bracing.

C. Submit design calculations.

D. Truss submittals shall bear the seal of the Supervising Professional Structural Engineer.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with the following:
   1. Lumber Grading Agency: Certified by DOC PS 20.
   2. Lumber: DOC PS 20.

B. Truss Design, Fabrication, and Installation: In accordance with TPI 1.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

B. Design trusses under direct supervision of Professional Engineer experienced in design of this Work and licensed in State of Michigan.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.

B. Store truss depth in vertical position resting on intermittent bearing pads.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, provide trusses fabricated with metal connector plates of one of the following:

1. Letherer Truss and Wall Systems.
2. Michigan Timber and Truss.
3. Mid Michigan Truss & Components.
4. Bear Truss.
5. Truss Technologies.
6. Midwest Manufacturing.
7. Wendricks Truss
8. or Equal.

2.2 MATERIALS

A. Lumber Grading Rules: NLGA, SPIB, WCLIB, or WWPA G-5 as applicable.

B. Wood Members: Any species graded under NLGA, SPIB, WWPA or WWPA; grade specified by Truss Designer; 19 percent maximum and 7 percent minimum moisture content.

C. Steel Plate Connectors: TPI 1, Section 6; hot dip galvanized; die stamped with integral teeth; minimum coated metal thickness indicated, but not less than 0.036 inch thick.

D. Truss Bridging: Type, size and spacing recommended by truss manufacturer.

2.3 ACCESSORIES

A. Wood Blocking, and Framing for Openings: In accordance with Section 06 10 00.

B. Fasteners and Anchors:
   1. Fasteners: ASTM A153/A153M, hot dipped galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.
   2. Nails: ASTM F1667.

C. Structural Connectors: Meeting requirements specified in Section 61 00 00, as selected by Truss Designer.

2.4 FABRICATION

A. Wood truss fabrication shall comply with TPI-1 “National Design Standard for Metal Plate Connected Wood Truss Construction”.

B. Fabricate trusses to achieve structural requirements specified.

C. Cut wood members to accurate length, angles, and sizes to produce close fitting joints with wood to wood bearing in assembled units.

D. Fabricate metal connector plates to size, configuration, thickness and anchorage details required for types of joint truss designs indicate.

E. Assemble truss members in design configuration indicated using jigs or other means to ensure uniformity and accuracy of assembly with close fitting joints. Position members to produce design camber indicated.

F. Connect members by metal connector plates accurately located and securely fastened to each side of wood members.

G. Fabricate bottom and top chord extensions as indicated on Drawings.

H. Frame special sized openings in web framing as indicated on Drawings.

2.5 SOURCE QUALITY CONTROL

A. Section 01 40 00 - Quality Requirements: Testing, inspection and analysis requirements.

B. Inspect Work performed at fabricator's facility to verify conformance to Contract Documents.

C. When fabricator is approved by authority having jurisdiction, submit certificate of compliance indicating Work performed at fabricator's facility conforms to Contract Documents.
   1. Specified shop inspections are not required for Work performed by approved fabricator.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Verify supports and openings are ready to receive trusses.

3.2 PREPARATION

A. Coordinate placement of bearing and support items.

3.3 ERECTION

A. Do not install damaged trusses, or trusses with damaged web or chord members, or with loose metal connecting plates.

B. Erect trusses in accordance with manufacturer’s instructions and TPI recommendations.

C. Set members level and plumb, in correct position.

D. Make provisions for erection loads, and for sufficient temporary bracing to maintain structure plumb, and in alignment until completion of erection and installation of permanent bracing.

E. During entire construction period, Contractors shall provide means of adequate distribution of concentrated loads so that the safe loading capacity of any single truss is not exceeded.

F. Do not field cut or alter truss members without approval of the Truss Designer and Architect/Engineer of Record. Trusses that are cut, notched or otherwise altered shall be repaired as directed by the Truss Designer at the Contractor’s expense.

G. Exercise care during erection to minimize out-of-plane bending.

H. Anchor trusses at each bearing location using connectors indicated in Drawings or as specified by Truss Designer. If not specified, provide uplift connectors in configurations compatible with bearing conditions and capable of resisting loads indicated on approved truss Shop Drawings.

I. Do not anchor trusses directly to top plate of non-bearing partitions. Install designated slip connector between non-bearing partitions and trusses.

J. Frame openings between trusses with lumber in accordance with Section 06 10 00.

K. Install permanent bracing to enable trusses to maintain design spacing and position, withstand specified live and dead loads including lateral loads, and to comply with other indicated requirements.
   1. Roof Trusses: At a minimum, install pairs of 2x4 diagonal bracing in chevron pattern at maximum 20 foot intervals at all truss compression webs requiring permanent lateral bracing. Chevron bracing shall be installed in the plane of the webs and nailed to each web member with two sixteen penny nails minimum. Chevron bracing angle shall be approximately 45 degrees in the plane of the web and shall be in addition to continuous lateral bracing. Alternatively, Contractor may install T or L bracing in lieu of continuous lateral and chevron bracing on any member requiring bracing. T or L bracing shall be installed in accordance with BCSI recommendation.

L. Coordinate installation of sheathing with work of this Section.

3.4 ERECTION TOLERANCES

A. Section 01 40 00 - Quality Requirements: Tolerances.

B. Framing Members: 1/2 inch maximum, from indicated position.

C. Trusses: 1/4 inch maximum from true position, 1/4 inch maximum from plumb.

END OF SECTION

SECTION 06 20 00

FINISH CARPENTRY

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Interior Finish Carpentry:
      a. Standing and running trim.

B. Related Requirements:
   1. Section 09 90 00 - Painting and Coating: Painting and finishing of finish carpentry items.

1.2 REFERENCE STANDARDS

A. ASTM International:
   1. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
   2. ASTM B695 - Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel
   3. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
   4. ASTM F1667 - Standard Specification for Driven Fasteners: Nails, Spikes, and Staples.

B. Architectural Woodwork Institute:
   1. AWI AWS - Architectural Woodwork Standards.

1.3 QUALITY ASSURANCE

A. Perform work in accordance with AWI AWS Section 6 Custom Grade.

B. Surface Burning Characteristics: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.

B. Protect work from moisture damage.

C. Maintain storage space relative humidity within ranges indicated in AWI AWS Section 2.

1.5 ENVIRONMENTAL REQUIREMENTS

A. Section 01 60 00 - Product Requirements.

B. During and after installation of Work of this section, maintain same temperature and humidity conditions in building spaces as will occur after occupancy.
   1. Maintain relative humidity within ranges indicated in AWI AWS Section 2.

PART 2 PRODUCTS

2.1 INTERIOR MATERIALS

A. Interior Hardwood Lumber: Red oak species.
   1. Cut: Plain sawn.
   2. Finger Jointing: Not permitted.

B. Lumber Moisture Content Range: 5-10 percent.

2.2 FINISHES

A. Sand work smooth and set exposed nails and screws.

B. Apply wood filler in exposed nail and screw indentations.

C. On items to receive transparent finishes, use wood filler matching surrounding surfaces and of types recommended for applied finishes.

D. Stain, seal, and varnish exposed to view surfaces.

E. Seal internal surfaces and semi-concealed surfaces.

F. Seal surfaces in contact with cementitious materials.

2.3 ACCESSORIES

A. Fasteners and Anchors:
   1. Fasteners: ASTM A153/A153M, hot dipped galvanized or ASTM B695, Class 55 mechanically galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.
   2. Nails and Staples: ASTM F1667.

B. Wood Filler: Solvent base, tinted to match surface finish color.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for installation examination.

B. Verify adequacy of backing and support framing.

C. Verify mechanical, electrical, and building items affecting work of this section are placed and ready to receive this work.

3.2 DEMOLITION

A. Modify and extend existing finish carpentry installations using materials and methods as specified.

3.3 INSTALLATION

A. Install work in accordance with AWI AWS Section 6 Custom Grade and manufacturer's instructions.

B. Set and secure materials and components in place, plumb and level.

C. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.

D. Install components and trim with nails, screws, bolts or with blind fasteners as indicated.

E. Preparation For Site Finishing:
   1. Set exposed fasteners. Apply wood filler in exposed fastener indentations. Sand work smooth.
   2. Site Finishing: Refer to Section 09 90 00.

3.4 TOLERANCES

A. Section 01 40 00 - Quality Requirements: Tolerances.

B. Conform to AWI AWS Section 6 requirements for the following:
   1. Smoothness.
   2. Gaps.
   3. Flushness.
   4. Flatness.

C. Maximum Variation from Indicated Position: 1/16 inch.

D. Maximum Offset from Alignment with Abutting Materials: 1/32 inch.

END OF SECTION

SECTION 07 21 16

BLANKET INSULATION

PART 1 GENERAL

1.1 SUMMARY

A. Section includes batt insulation and vapor retarder in roof and wall construction.

1.2 REFERENCES

A. ASTM International:
   1. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
   2. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
   3. ASTM E970 - Standard Test Method for Critical Radiant Flux of Exposed Attic Floor Insulation Using a Radiant Heat Energy Source.

1.3 PERFORMANCE REQUIREMENTS

A. Vapor Retarder Permeance: Maximum 1 perm when tested in accordance with ASTM E96/E96M.

1.4 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

B. Product Data: Submit data on product characteristics, performance criteria, and limitations.

1.5 QUALITY ASSURANCE

A. Insulation Installed in Concealed Locations Surface Burning Characteristics:
   1. Batt Insulation: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

B. Insulation Installed in Exposed Locations Surface Burning Characteristics: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.
   1. Attic Insulation: Minimum 0.12 watt per sq cm critical radiant flux when tested in accordance with ASTM E970.

PART 2 PRODUCTS

2.1 BATT INSULATION

A. Manufacturers:
   1. Owens Corning Fiberglas
   2. Or equal.

2.2 COMPONENTS

A. Batt Insulation: ASTM C665; preformed glass fiber batt or roll; friction fit, conforming to the following:
   1. Thermal Resistance: R of 3.75 per inch of thickness.
   2. Facing: Facing: Unfaced.

B. Sheet Vapor Retarder: Black polyethylene film for above grade application, 6 mil thick.

C. Staples: Steel wire; type and size to suit application.

D. Tape: Polyethylene self-adhering type, 2 inch wide.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Verify substrate, adjacent materials, and insulation are dry and ready to receive insulation.

3.2 INSTALLATION

A. Install in exterior walls, roof and ceiling spaces without gaps or voids. Do not compress insulation.

B. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.

C. Insulate miscellaneous gaps and voids around door and window frames with cut pieces and cover with vapor retarder.

D. Friction fit insulation tight in spaces and tight to exterior side of mechanical and electrical services within plane of insulation.

E. Place vapor retarder on warm side of insulation and staple in place; lap and seal sheet retarder joints over member face.

F. Extend vapor retarder tight to full perimeter of adjacent window and door frames and other items interrupting plane of membrane. Tape seal in place.

END OF SECTION

SECTION 07 46 46

FIBER-CEMENT SIDING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes fiber cement lap siding, panels, shingle, trim, fascia, moulding and accessories.

B. Related Sections:

1. Section 06 10 00 - Rough Carpentry: Wood framing and bracing.
2. Section 06 10 00 - Rough Carpentry: Sheathing.
3. Section 07 21 16 - Insulation: Exterior wall insulation.
4. Section 09 90 00 – Painting: Field applied finish.

1.2 REFERENCES

A. ASTM International:
1. ASTM C1186 - Standard Specification for Flat Fiber-Cement Sheets.
2. ASTM D3359 - Standard Test Method for Measuring Adhesion by Tape Test, Tool and Tape.
3. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degrees C.

1.3 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

B. Shop Drawings: Provide detailed drawings of atypical non-standard applications of cementitious siding materials which are outside the scope of the standard details and specifications provided by the manufacturer.

C. Product Data: Manufacturer's data sheets on each product to be used.

D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

1.4 QUALIFICATIONS

A. Installer Qualifications: Minimum of 2 years experience with installation of similar products.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Store products in manufacturer's unopened packaging until ready for installation.

C. Store siding on edge or lay flat on a smooth level surface. Protect edges and corners from chipping. Store sheets under cover and keep dry prior to installing.

D. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.6 ENVIRONMENTAL REQUIREMENTS

A. Section 01 60 00 - Product Requirements: Environmental conditions affecting products on site.

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

1.7 WARRANTY

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for warranties.

B. Product Warranty: Limited, non-pro-rated product warranty.
1. HardiePlank HZ5 lap siding for 30 years.
2. HardieTrim HZ and HZ5 boards for 15 years.

C. Workmanship Warranty: Application limited warranty for 2 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: James Hardie Building Products, Inc., which is located at: 26300 La Alameda Suite 400 ; Mission Viejo, CA 92691; Toll Free Tel: 866-274-3464; Tel: 949-367-4980; Fax: 949-367-4981; Email: request info (info@jameshardie.com); Web: www.jameshardiepros.com.
1. Substitutions: As permitted under Section 01 60 00.

2.2 SIDING

A. HardiePlank HZ5 lap siding, requirement for Materials:
1. Fiber-cement Siding - complies with ASTM C 1186 Type A Grade II.
2. Fiber-cement Siding - complies with ASTM E 136 as a noncombustible material.
3. Fiber-cement Siding - complies with ASTM E 84 Flame Spread Index = 0, Smoke Developed Index = 5.
4. Type: Smooth 8-1/4 inches (210 mm) with 7 inches exposure.

B. Trim:
1. HardieTrim HZ5 boards and HardieTrim HZ boards as manufactured by James Hardie Building Products, Inc.
2. Type: 5/4 Roughsawn, width as shown.

2.3 FASTENERS

A. Wood Framing Fasteners:

1. Wood Framing: 6d common corrosion resistant nails.

2.4 FINISHES

A. Factory Primer: Provide factory applied universal primer.
   1. Primer: Factory primed by James Hardie.
   2. Topcoat: As specified in Section 09 90 00.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.

B. Verify that substrates have been properly prepared.

C. Verify Installation of a water-resistive barrier as required in accordance with local building code requirements.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Coordinate installation of system flashings with water-resistive barrier.

3.3 INSTALLATION - SIDING

A. Install materials in strict accordance with manufacturer's installation instructions.

B. Starting: Install a minimum 1/4 inch (6 mm) thick lath starter strip at the bottom course of the wall. Apply planks horizontally with minimum 1-1/4 inches (32 mm) wide laps at the top. The bottom edge of the first plank overlaps the starter strip.

C. Allow minimum vertical clearance between the edge of siding and any other material in strict accordance with the manufacturer's installation instructions.

D. Align vertical joints of the planks over framing members.

E. Maintain clearance between siding and adjacent finished grade.

F. Locate splices at least one stud cavity away from window and door openings, but not less than 12 inches.

3.4 INSTALLATION – TRIM

A. Install materials in strict accordance with manufacturer's installation instructions. Install flashing around all wall openings.

B. Fasten through trim into structural framing or code complying sheathing. Fasteners must penetrate minimum 3/4 inch or full thickness of sheathing. Additional fasteners may be required to ensure adequate security.

C. Place fasteners no closer than 3/4 inch and no further than 2 inches from side edge of trim board and no closer than 1 inch from end. Fasten maximum 16 inches on center.

D. Maintain clearance between trim and adjacent finished grade.

E. Trim inside corner with a single board trim both side of corner.

F. Trim outside corner with trim on both sides of corner with 16 gage corrosion resistant finish nail 1/2 inch from edge spaced 16 inches (406 mm) apart, weather cut each end spaced minimum 12 inches apart.

G. Allow 1/8 inch gap between trim and siding.

H. Seal gap with high quality, paint-able caulk.

I. Shim frieze board as required to align with corner trim.

J. Fasten through overlapping boards. Do not nail between lap joints.

3.5 FINISHING

A. Finish factory primed siding as specified in Section 09 90 00.

END OF SECTION

SECTION 07 54 19

POLYVINYL-CHLORIDE ROOFING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Removal of designated roofing system components.
2. Substrate installation and preparation for fully adhered roofing.
3. Fully adhered roof systems and accessories.
4. Flashings and edge metal.
5. Roof accessories and snow retaining system.

B. Related Sections:
1. Section 07 61 00 – Sheet Metal Flashing and Trim: Soffit and trim.

1.2 REFERENCES

A. ASTM International:
1. ASTM C79/C79M - Standard Specification for Gypsum Sheathing Board.
2. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
3. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.

B. FM Global:
1. FM DS 1-28 - Wind Loads to Roof Systems and Roof Deck Securement.
2. FM 4450 - Approval Standard for Class 1 Insulated Steel Deck Roofs.
3. FM 4470 – Approval Standard for Single-Ply, Polymer-Modified Bitumen Sheet, Built-Up Roof (BUR), and Liquid Applied Roof Assemblies for use in Class I and Noncombustible Roof Deck Construction.

C. Intertek Testing Services (Warnock Hersey Listed):
1. WH - Certification Listings.

D. National Roofing Contractors Association:
1. NRCA - The NRCA Roofing and Waterproofing Manual.

E. Single Ply Roofing Institute:
1. SPRI RP-4 - Wind Design Standard for Ballasted Single-Ply Roofing Systems.
2. SPRI ES-1 - Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems.

F. Underwriters Laboratories Inc.:
1. UL - Fire Resistance Directory.
2. UL 790 - Tests for Fire Resistance of Roof Covering Materials.
3. UL 1256 - Fire Test of Roof Deck Construction.
4. UL 1897 - Uplift Tests for Roof Covering Systems.

1.3 SYSTEM DESCRIPTION

A. Elastomeric Sheet Membrane Conventional Roofing System: Single-ply membrane roof system that includes membranes comprised of a polyvinyl chloride polymer blend, reinforced with a high strength, weft-inserted polyester scrim; insulation; accessories; flashings; and trim. Membranes shall contain a combination of UV stabilizers, UV absorbents, plasticizers, heat stabilizers, flame retardant, lubricants and biocides, and shall exhibit the minimum physical properties specified herein.

B. Roof system shall be warranted by manufacturer as an entire roof system, edge to edge.

1.4 UNIT PRICE – MEASUREMENT AND PAYMENT

A. Section 01 20 00 – Price and Payment Procedures: Unit Prices

B. Remove and replace saturated roof insulation: Per 1 inch of thickness per square foot of area measured after removal. Includes material and labor for removal of saturated insulation, disposal, and replacement of insulation to original thickness with new. Notify Owner/Architect for verification of material to be removed prior to removal.

1.5 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

B. Submit written confirmation from membrane Manufacturer that installer is an approved applicator.

C. Manufacturer’s pre-approval of project conditions: Submit written documentation demonstrating manufacturer’s pre-approval of project conditions including any recommendations or revisions required particular to project conditions.

D. Product Data: Provide characteristics on membrane materials, pre-manufactured wall flashings, pre-manufactured pipe flashings, pre-fabricated flashing/counter flashings, breathable two-way vents, pre-fabricated edge trim (fascia and fascia extenders), insulation, fasteners, and all other pre-fabricated roofing accessories being installed.

E. Pullout Tests: Submit pullout test results and engineering report from membrane Manufacturer with shop drawings showing locations each test was taken. Engineering report shall include Manufacturer’s basis for selection of anchorage, frequency and seaming patterns.

F. Shop Drawings: Indicate layout for membrane, joint or termination detail conditions, and conditions of interface with other materials.

G. Samples: Submit color samples of roof edge trim (fascia and coping) for selection.

1.6 SUBMITTALS AT CLOSEOUT

A. Section 01 40 00 – Manufacturer’s Field Services and Section 01 70 00 – Execution and Contract Closeout: Manufacturer’s examination of installation.

B. Manufacturers Field Inspection: Upon completion of the installation, an inspection shall be made by the manufacturer’s Quality Assurance Specialist to ascertain that the installation has been completed in accordance with the manufacturer’s instructions and recommendations. Any work

not approved by the manufacturer's Quality Assurance Specialist shall be corrected to the satisfaction of the manufacturer at no additional cost to the Owner.

C. Manufacturer's Field Reports: Submit Manufacturer's Field Report. Indicate procedures followed and any corrective work required for manufacturer's acceptance of installation.

1.7 QUALITY ASSURANCE

A. Prior to submission of Bids, Contractor shall submit all forms and other required data to manufacturer for pre-approval. Contractor shall advise Architect in writing of any recommendations made or revisions required by membrane manufacturer to particular project conditions, and shall include any such recommendations or revisions in the Bid.

B. Perform Work in accordance with manufacturer's most recently published instructions, and any pre-approval recommendations or revisions.

C. Manufacturer's quality assurance specialist shall inspect roofing system for compliance with manufacturer's specifications.

D. All materials used in the installation of the roofing system shall be products of the system manufacturer, or accepted products as defined and described in the manufacturer's specifications. Other materials shall be accepted by the system manufacturer in writing prior to being installed in the system.

E. Contractor Qualifications:
   1. The Contractor shall employ and use qualified workmen who are thoroughly trained and experienced in the techniques required to properly install the components necessary to provide a complete and warrantable roof assembly.
   2. Contractor shall employ and provide an experienced, qualified, thoroughly trained project superintendent having experience installing the components of the specified roof system.

1.8 REGULATORY REQUIREMENTS

A. Building Code: Michigan Rehabilitation Code for Existing Buildings and Michigan Building Code 2012 by reference.

B. UL 790: Class B (minimum) Fire Hazard Classification.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Deliver products in manufacturer's original containers, dry, undamaged, with seals and labels intact.

C. Store products in weather protected environment, clear of ground and moisture. Protect foam insulation from direct sunlight exposure.

1.10 ENVIRONMENTAL REQUIREMENTS

A. Section 01 60 00 - Product Requirements: Environmental conditions affecting products on site.

B. Do not remove existing roofing membrane when weather conditions threaten the integrity of the building contents or intended continued occupancy.

C. Maintain continuous temporary protection prior to and during installation of new roofing system.

D. Do not apply roofing membrane during inclement weather or when the ambient air temperature, surface temperature, relative humidity, or wind velocity is outside the range acceptable to the membrane Manufacturer.

E. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.

F. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.

G. Protect all existing construction and new work. Prior to commencing work, protect existing construction in an approved manner to prevent damage resulting from installation, or from up-loading materials to the roof.

H. Stage materials on the ground until ready for installation. Staging of bulk roofing materials on the roof will not be permitted. Load materials needed for installation as the work progress using fork truck or other ground mounted lifting device. Roof mounted hoists will not be permitted. Protect site surfaces from damage during loading operations.

1.11 COORDINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Schedule removal of existing roofing to coincide with commencement of installation of new roofing.

C. Remove only existing roofing materials that can be replaced with new materials as the weather will permit.

1.12 WARRANTY

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for warranties.

B. Membrane manufacturer shall warrant the complete installation as a complete roof assembly, for a period of fifteen (15) years commencing on the date of acceptance of the installation by the manufacturer. The warranty shall be a no-dollar limit warranty providing repair and/or replacement of the roofing system at the then current material and labor prices throughout the life of the warranty period. The warranty shall contain no exclusions for ponded water, biological growth, incidental or consequential damages.

C. Repairs to roof system shall be made within seventy-two (72) hours of notification to the contractor or manufacturer and to the satisfaction of the owner and manufacturer at no cost to the owner.

D. Roof shall be warranted as a complete roofing system, edge to edge including all flashings, terminations and trims.

1.13 PRE-INSTALLATION INSPECTION

A. Conduct pre-installation inspection under the provisions of Section 01 30 00.

B. Contractors shall conduct an inspection of the job site roof conditions and confirm the required fastener type and length, moisture content of the existing roofing system, and note damaged area requiring repair prior to the installation of the proposed work. Repair of any core cuts made for the purposes of this verification shall be repaired by the prospective Contractor.

C. Contractors shall conduct fastener pull out tests to verify the integrity of the deck and to establish fastening pattern limits in accordance with system manufacturer's specifications.
   1. Fastener pull-out tests shall be conducted on the roof deck with approved fasteners to verify the integrity of the deck and to establish fastening pattern limits which meet the requirements of manufacturer's specifications.
   2. Pull-out tests shall be taken on-site by the fastener manufacturer, the contractor, or a representative of the roof manufacturer. The sections where integrity is most in question shall be included in the locations for testing. Values shall be documented on the roof drawing locating the test pulls and pull-out test values. The number of pull tests shall be: perform a minimum of ten (10) pull tests for each 50,000 sq. ft. and five (5) additional pull tests for each additional 50,000 sq. ft. or portion thereof for each differing roof deck type on each project. Areas of low pull tests will require additional pull tests.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Manufacturers:
   1. Duro-Last Roofing, Inc.
   2. Substitutions: Not Permitted.

2.2 MEMBRANE AND ASSOCIATED PRODUCTS

A. Membrane for adhered installation: Durolast X 50-mil Membrane, white in color.

B. All membrane components, including pipe, curb, and corner flashings shall be furnished by the roof manufacturer, factory prefabricated from the same fabric reinforced material as the membrane.

C. Fasteners: Provide Factory Mutual approved fasteners suitable for deck conditions furnished by the roof Manufacturer.
   1. Provide HD Screws for all metal and wood deck applications.

D. Distribution Plates: Provide Factory Mutual approved stress distribution plates suitable for substrate conditions, and furnished by the roof Manufacturer.

E. Metal Fascia Extender: Exceptional Metals metal fascia system fabricated of 24 gauge galvanized steel with Kynar 500 coating, fascia face dimension as indicated. Manufacturer's custom colors shall be available for selection without additional cost.
   1. Provide custom extended height gravel stop for installation along edges of ballasted low-slope roof.
   2. Provide matching fascia extenders as indicated.

F. Fascia Bar and Cover: Fascia bar fabricated from rigid exterior vinyl with slotted holes, and cover fabricated from Kynar coated galvanized steel.

G. Metal Drip Edge and Fascia Extender: Exceptional Metals T-Edge Plus consisting of a double folded drip edge with matching splice plates, concealing a vinyl coated hook edge. 24 gauge galvanized steel with Kynar 500 coating, fascia face dimension as indicated. Manufacturer's custom colors shall be available for selection without additional cost.
   1. Provide matching fascia extenders as indicated.

H. Termination Sealant: Compatible with materials to which sealant is to be applied, conforming to Federal Specifications TT-S-00230C, Type II, Class A and ASTM C920-87, and as furnished by the roof manufacturer.

I. Adhesive: Adhesive for fully-adhered systems shall be water based adhesive designed for use with fully-adhered systems, suitable for adhering membrane to substrate, and as furnished by the roof Manufacturer.

2.3 INSULATION/SUBSTRATE MATERIALS

A. Insulation: ASTM C578, Type VIII, unfaced expanded polystyrene insulation with the following characteristics:
   1. Compressive strength: 15 psi.
   2. Board size: 4 x 8 feet.
   3. Board Thickness: As indicated on drawings.
   4. Board Edges: square.
   5. Insulation R Value: 4.0 per inch of thickness.

B. Substrate: Glass mat faced, water resistant gypsum core board. DensDeck as manufactured by GAF with the following characteristics:
   1. Compressive strength: 900 psi.
   2. Board size: 4 x 8 feet.
   3. Board Thickness: 1/2 inch.
   4. Board Edges: square.
   5. Insulation R Value: 0.56

2.4 ACCESSORIES

A. Wood Blocking and Nailers: As specified in Section 06 10 00.

B. Temporary Protection: Provide sheet materials capable of preventing the passage of water to the interior of the building during construction.

2.5 SNOW RETAINING SYSTEM

A. Snow Retention Fence: Snow retention system designed to be used with Duro-Last roofing materials, utilizing heat weldable anchor plates, fence brackets and fence bars fabricated of stainless steel, with fasteners, endcaps and collars. Provide Snow Fence System as manufactured by Anchor Products.

PART 3 EXECUTION

3.1 PRECAUTIONS

A. Do not tear-off any more roofing than can be covered with temporary protective covering until ready for re-roofing.

B. In making field heat welds, make sure that all edges are clean and free of materials which could affect the performance of the weld.

C. Do not expose membrane or other accessories to constant temperatures in excess of 100 degrees F.

D. Protection of Roofing Surfaces: Storing, wheeling, or trucking directly on roof insulation or roofing surface will not be permitted. Provide temporary plywood walkways, runways and platforms as necessary to protect insulation and roofing from damage.

3.2 MATERIAL REMOVAL

A. Remove existing roof membrane, edges, flashings, and other roof system components to the extent described in the Plans.

B. Where moisture is present in the insulation scheduled to remain, remove existing insulation down to dry substrate and replace with new insulation of same thickness as that removed.

3.3 TEMPORARY PROTECTION

A. Provide temporary protective sheeting over exposed deck and/or substrate surfaces.

B. Turn sheeting up and over parapets and curbing. Retain sheeting in position with weights or temporary fasteners.

C. Provide for surface drainage from protective sheeting to existing drainage facilities. Do not allow water to build-up or stand on protective sheeting.

D. Do not permit traffic over unprotected or repaired deck surface except as required for installation of new roofing.

E. Any damage sustained to the facility or contents resulting from improper scheduling of the work, or improper temporary protection shall be Contractor’s responsibility.

3.4 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Verify surfaces and site conditions are ready to receive work.

C. Verify substrate is clean and smooth, free of depressions, waves, or projections, and suitable for installation of roof system.

D. Verify substrate surfaces are dry and free of snow or ice.

E. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set.

3.5 PREPARATION

A. Vacuum or sweep loose debris from substrate surfaces.

B. Verify that existing insulation is attached to deck in accordance with membrane manufacturer's instructions and install supplemental insulation fasteners as required.

3.6 INSTALLATION

A. Wood Blocking:
   1. Install pressure treated wood blocking at locations shown in the Plans, and as detailed in the approved roofing Manufacturer's Shop Drawings.
   2. Wood blocking shall be securely fastened to the existing deck surface, or to other suitable supporting structure such that they resist a force of 180 lbs per lineal foot in any direction. Space fasteners no greater than 18 inches on center.

B. Insulation/substrate board:
   1. Roof Insulation shall be installed with approved fasteners and distribution plates placed according to roofing Manufacturer's specifications, UL, and FM requirements
   2. Lay boards in moderate contact without forcing. Cut insulation to fit neatly to perimeter blocking and penetrations through roof.
   3. In multi-layer installations, stagger joints in top and bottom layers.
   4. Apply no more insulation that can be covered with membrane in same day.

C. Membrane Application
   1. Adhere membrane to substrate surface in accordance with manufacturer's instructions.
   2. Install membrane parallel with building lines and without wrinkles.
   3. Begin membrane application at lower eave. Weatherlap successive sections over lower sections.
   4. Be careful not to contaminate the membrane along the edges to be welded.
   5. Do not thin adhesives.

D. Fascia, copings and Trim
   1. Install fascia, copings and trim components to seal membrane at roof perimeter in accordance with Manufacturer's instructions.
   2. Fasten fascia, copings and trim to solid substrate as required for solid attachment under required wind uplift loads.
   3. Locate fasteners to be concealed by subsequent installation of roofing.
   4. Lap fascia at joints and seal water tight in accordance with manufacturer's instructions.

E. Snow Retention System:
   1. Install snow retention system components in accordance with manufacturer's instructions.
   2. Space snow fence brackets at 2 feet on center with 4 brackets per 8 foot section.

3.7 FIELD QUALITY CONTROL

A. Section 01 40 00 - Quality Requirements and 01 70 00 - Execution and Closeout Requirements: Manufacturer's Field Inspection.

B. Require site attendance of roofing manufacturer's representative as required by manufacturer during installation of the Work.

C. Correct identified defects or irregularities.

3.8 CLEANING

A. Section 01 70 00 - Execution and Closeout Requirements: Final cleaning.

B. In areas where finished surfaces are soiled by Work of this section, consult manufacturer of surfaces for cleaning advice and conform to their documented instructions.

C. Repair or replace defaced or disfigured finishes caused by Work of this section.

3.9 PROTECTION OF INSTALLED CONSTRUCTION

A. Section 01 70 00 - Execution and Closeout Requirements: Protecting installed construction.

B. Protect building surfaces against damage from roofing work.

C. Where traffic must continue over finished roof membrane, protect surfaces.

END OF SECTION

SECTION 07 62 00

SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.1 SUMMARY

A. Section includes fabricated sheet metal soffit and trim.

1.2 REFERENCES

A. American Architectural Manufacturers Association:
   1. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.

B. ASTM International:
   1. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

1.3 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

B. Product Data: Submit data on manufactured components metal types, finishes, and characteristics.

C. Samples:
   1. Submit two samples illustrating metal finish color.

1.4 QUALIFICATIONS

A. Fabricator and Installer: Company specializing in sheet metal work with minimum three years documented experience.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.

B. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

C. Prevent contact with materials causing discoloration or staining.

PART 2 PRODUCTS

2.1 COMPONENTS

A. Manufacturer’s
   1. Alcoa Aluminum
   2. Or equal.

B. Soffit - perforated: Triple 4 inch Full Lanced U-groove Soffit; fabricated from 0.019 inch pre-finished aluminum sheet, color to match existing. Soffit shall provide a minimum net free area of 13.2 inches per square foot.

C. J-channel: 1 inch face, offset, for use with specified soffit; fabricated from 0.019 inch pre-finished aluminum sheet, color to match soffit.

D. Fasteners: Finish nails compatible with soffit materials. Where exposed, provide nails painted to match finish color.

2.2 FABRICATION

A. Form sections shape indicated on Drawings, accurate in size, square, and free from distortion or defects.

B. Form pieces in longest possible lengths.

C. Hem exposed edges on underside 1/2 inch; miter and seam corners.

D. Form material with flat lock seams, except where otherwise indicated.

2.3 FACTORY FINISHING

A. Silicone polyester coating: Baked enamel system conforming to AAMA 2603.

B. Washcoat: Finish concealed side of metal sheets with washcoat compatible with finish system, as recommended by finish system manufacturer.

PART 3 EXECUTION

3.1 INSTALLATION

A. Secure components in place using concealed fasteners. Use exposed fasteners only where permitted.

END OF SECTION

SECTION 07 90 00

JOINT PROTECTION

PART 1 GENERAL

1.1 SUMMARY

A. Section includes sealants, joint backing and accessories.

B. Related Sections:
   1. Section 07 54 19 – Polyvinyl-Chloride Roofing: Specialty sealants specified by roofing system manufacturer.

1.2 REFERENCES

A. ASTM International:
   1. ASTM C834 - Standard Specification for Latex Sealants.
   2. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications.
   3. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
   4. ASTM C1193 - Standard Guide for Use of Joint Sealants.
   5. ASTM D1056 - Standard Specification for Flexible Cellular Materials-Sponge or Expanded Rubber.
   6. ASTM D1667 - Standard Specification for Flexible Cellular Materials-Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam).
   7. ASTM D2628 - Standard Specification for Preformed Polychloroprene Elastomeric Joint Seals for Concrete Pavements.

1.3 SUBMITTALS

A. Section 01 33 00 - Submittals: Submittal procedures.

B. Products Data: Submit data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.

C. Samples: Submit two samples illustrating sealant colors for selection.

D. Manufacturer's Installation Instructions: Submit special procedures, surface preparation, and perimeter conditions requiring special attention.

E. Warranty: Include coverage for installed sealants and accessories failing to achieve watertight seal, exhibit loss of adhesion or cohesion, and sealants which do not cure.

1.4 QUALITY ASSURANCE

A. Section 01 40 00 – Quality Requirements: Requirements for compliance with reference standards.

B. Perform work in accordance with specified Reference Standards.

1.5 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

B. Applicator: Company specializing in performing Work of this section with minimum three years documented experience.

1.6 ENVIRONMENTAL REQUIREMENTS

A. Maintain temperature and humidity recommended by sealant manufacturer during and after installation.

1.7 COORDINATION

A. Section 01 30 00 – Administrative Requirements: Coordination and project conditions.

B. Coordinate Work with sections referencing this section.

PART 2 PRODUCTS

2.1 JOINT SEALERS

A. Manufacturers:
   1. Dow Corning Corp.
   2. Pecora Corp..
   3. Sika Corp..
   4. Tremco Sealants & Waterproofing.
   5. Substitutions: Or equal.

2.2 SEALANT PRODUCTS:

A. Sealant S1 – High Performance General Purpose Exterior Sealant: Polyurethane; ASTM C920, Grade NS, Class 35, Uses NT, M, A and O; single-component.
   1. Acceptable Products
      a. Dymonic FC manufactured by Tremco.
      b. SikaHyflex – 150 LM manufactured by Sika Corp.
      c. DynaTrol I-XL Hybrid by Pecora Corporation.

B. Sealant S2 - General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C834, single component, paintable.
   1. Acceptable Products:
      a. TremFlex 834 manufactured by Tremco.
      b. Pecora AC-20 + Silcone manufactured by Pecora Corp.
   2. Color: Standard colors matching finished surfaces.
   3. Applications: joints between door frames and wall surfaces, and other interior joints for which no other type of sealant is indicated.

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 D1056, sponge or expanded rubber; oversized 30 to 50 percent larger than joint width.
   1. Type: Everlastic manufactured by Williams Products, Inc. or equal.

D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 70 00 – Examination and Preparation: Requirements for examination and acceptance of preceding work.

B. Verify substrate surfaces and joint openings are ready to receive work.

C. Verify joint backing and release tapes are compatible with sealant.

3.2 PREPARATION

A. Remove loose materials and foreign matter impairing adhesion of sealant.

B. Clean and prime joints.

C. Perform preparation in accordance with ASTM C1193.

D. Protect elements surrounding Work of this section from damage or disfiguration.

3.3 INSTALLATION

A. Perform installation in accordance with ASTM C1193.

B. Measure joint dimensions and size joint backers to achieve the following, unless otherwise indicated:
   1. Width/depth ratio of 2: 1.
   2. Neck dimension no greater than 1/3 of joint width.
   3. Surface bond area on each side not less than 75 percent of joint width.

C. Install bond breaker where joint backing is not used.

D. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.

E. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

F. Tool joints concave.

3.4 CLEANING

A. Section 01 70 00 – Cleaning and Waste Management: Final cleaning.

B. Clean adjacent soiled surfaces.

3.5 PROTECTION OF INSTALLED CONSTRUCTION

A. Section 01 70 00 – Protecting Installed Construction: Protection of the work.

B. Protect sealants until cured.

3.6 SCHEDULE

A. Exterior soft Joints: Type S1.

B. Interior soft Joints: Type S2.

END OF SECTION

SECTION 08 41 13

ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes aluminum-framed storefronts including aluminum and glass doors and frames including hardware and glass infill panels.

B. Related Sections:
1. Section 07 90 00 - Joint Protection: System perimeter sealant and back-up materials.
2. Section 08 71 00 - Door Hardware: Mortised hardware reinforcement requirements affecting framing members; hardware items other than specified in this section.
3. Section 08 80 00 - Glazing.

1.2 REFERENCES

A. Aluminum Association:
1. AA ADM 1 - Aluminum Design Manual.

B. American Architectural Manufacturers Association/Window & Door Manufacturers Association:
1. AAMA 501 – Methods of Test for Exterior Walls
2. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum.
3. AAMA 701/702 – Coluntary Specification for Pile Weatherstripping and Replaceable Fenestration Weatherseals.
4. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections.
5. AAMA MCWM-1 - Metal Curtain Wall Manual.
6. AAMA SFM-1 - Aluminum Store Front and Entrance Manual.

C. American Society of Civil Engineers:
1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.

D. ASTM International:
1. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron
2. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
3. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
4. ASTM B456 – Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium.
5. ASTM B633 – Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel.
6. ASTM C481 – Standard Test Method for Laboratory Aging of Sandwich Constructions.
7. ASTM C864 – Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers.
8. ASTM C920 – Standard Specification for Elastomeric Joint Sealants.
9. ASTM C1184 – Standard Specification for Structural Silicone Sealants.
10. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

11. ASTM E283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
12. ASTM E330 - Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
13. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
14. ASTM E2692 – Standard Test Method for Structural Performance of Thermal Barriers in Fenestration Products.

E. National Fenestration Rating Council Incorporated:
1. NFRC 200 - Procedures for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence.

F. SSPC: The Society for Protective Coatings:
1. SSPC Paint 12 – One Coat Zinc Rich Painting System.
2. SSPC Paint 20 - Zinc-Rich Primers (Type I - Inorganic and Type II - Organic).

1.3 SYSTEM DESCRIPTION

A. Storefront framing system: Aluminum-framed storefront system includes aluminum sections with supplementary internal support framing, aluminum and glass entrances, shop fabricated, factory finished, glass and glazing, insulated metal panel infill, related flashings, anchorage and attachment devices.

B. Curtain Wall framing system (Alternate A1): Architectural Aluminum Curtain Wall Systems, including perimeter trims, stools, accessories, shims and anchors, and perimeter sealing of curtain wall units, 1 inch glazing, 2-1/2 inch x 7-1/2 inch, outside glazed pressure plate format.

C. System Assembly: Site assembled.

1.4 PERFORMANCE REQUIREMENTS

A. System Design: Design and size components to withstand dead and live loads caused by positive and negative wind pressure acting normal to plane of wall, including building corners.

B. Deflection: Limit mullion deflection to 1/175 for spans under 13’-6” and 1/240 plus 1/4 inch for spans over 13’-6”; with full recovery of glazing materials.

C. 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.

D. Air Infiltration: Limit air leakage through assembly to 0.06 cfm/min/sq ft of wall area, measured at reference differential pressure across assembly of 6.24 psf as measured in accordance with ASTM E283.

E. Condensation Resistance Factor: When tested to AAMA Specification 1503, the condensation resistance factor shall not be less than: Glass to Exterior – 60frame and 63glass.

F. Water Resistance: The test specimen shall be tested in accordance with ASTM E 331. There shall be no leakage at a minimum static air pressure differential of 8 psf as defined in AAMA 501.

G. Thermal and Solar Heat Transmittance of Assembly (U Value and SHGC): When tested to AAMA Specification 1503, the thermal transmittance (U-factor) shall not be more than: Glass to Exterior – 0.46.

H. System Internal Drainage: Drain water entering joints, condensation occurring in glazing channels, or migrating moisture occurring within system, to exterior by weep drainage network.

1.5 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

C. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

D. Samples: Submit samples illustrating finished aluminum surface and infill panels.

E. Design Data: Indicate framing member structural and physical characteristics, calculations, and dimensional limitations.

1.6 QUALITY ASSURANCE

A. Perform Work in accordance with AAMA SFM-1 and AAMA MCWM-1 - Metal Curtain Wall, Window, Store Front and Entrance - Guide Specifications Manual.

B. Surface Burning Characteristics:
1. Foam Insulation: Maximum 75/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

1.7 QUALIFICATIONS

A. Installer: Experienced with installation of the same or similar units required for the project and other projects of similar size and scope.

B. Design structural support framing components under direct supervision of Professional Engineer experienced in design of this Work and licensed in State of Michigan.

1.8 DELIVERY, STORAGE, AND PROTECTION

A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.

B. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings which bond when exposed to sunlight or weather.

1.9 ENVIRONMENTAL REQUIREMENTS

A. Section 01 60 00 - Product Requirements.

B. Do not install sealants nor glazing materials when ambient temperature is less than 40 degrees F during and 48 hours after installation.

1.10 WARRANTY

A. Section 01 70 00 - Execution and Closeout Requirements: Product warranties and product bonds.

B. Warranty Period: Two (2) years from date of Substantial Completion.

PART 2 PRODUCTS

2.1 ALUMINUM-FRAMED STOREFRONTS

A. Manufacturers:
1. Kawneer Co., Inc.
2. Substitutions not permitted.

B. Product Description:
1. Aluminum Storefront:
a. EnCORE Framing System (Thermally improved).
b. System Dimensions: 1-3/4 inch x 4-1/2 inch with Double Glazed Insulating Glass.
c. Glass: Exterior.
2. Entrance Doors:
a. AA™425 Thermal Entrance: 4-1/4 inch vertical stile, 4-1/4 inch top rail, 10 inch bottom rail.
b. Major portions of the door members to be 0.125 inch nominal in thickness and glazing molding to be 0.05 inch thick.
c. Glazing gaskets shall be either EPDM elastomeric extrusions or a thermoplastic elastomer.
d. Provide adjustable glass jacks to help center the glass in the door opening.

2.2 MATERIALS

A. Extruded Aluminum:
1. Aluminum Storefront: Alloy and temper recommended by aluminum storefront manufacturer for strength, corrosion resistance, and application of required finish and not less than 0.070" (1.8 mm) wall thickness at any location for the main frame and complying with ASTM B 221: 6063-T6 alloy and temper.
2. Entrance Doors: Aluminum Extrusions: Alloy and temper recommended by aluminum-framed door manufacturer for strength, corrosion resistance, and application of required finish and not less than 0.090" wall thickness at any location for the main frame and door leaf members.

B. Sheet Aluminum: ASTM B209.

C. Fasteners: Aluminum, nonmagnetic stainless steel or other materials to be non-corrosive and compatible with aluminum window members, trim hardware, anchors, and other components.

D. Anchors, Clips, and Accessories: Aluminum, nonmagnetic stainless steel, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions or other suitable zinc coating; provide sufficient strength to withstand design pressure indicated.

E. Reinforcing Members: Aluminum, nonmagnetic stainless steel, or nickel/chrome-plated steel complying with ASTM B 456 for Type SC 3 severe service conditions, or zinc-coated steel or iron

complying with ASTM B 633 for SC 3 severe service conditions or other suitable zinc coating; provide sufficient strength to withstand design pressure indicated.

F. Sealant: For sealants required within fabricated storefront system, provide permanently elastic, non-shrinking, and non-migrating type recommended by sealant manufacturer for joint size and movement.

G. Thermal Barrier: Aluminum Storefront: A minimum ¼ inch separation between the interior and exterior aluminum created by intermittent polymer clips.

H. Tolerances: Reference to tolerances for wall thickness and other cross-sectional dimensions of storefront members are nominal and in compliance with AA Aluminum Standards and Data.

I. Glass: As specified in Section 08 80 00.

J. Entrance Door Weatherstripping: Slide-In-Type Weather Stripping: Provide woven-pile weather stripping of wool, polypropylene, or nylon pile and resin-impregnated backing fabric. Comply with AAMA 701/702.
   1. Weather Seals: Provide weather stripping with integral barrier fin or fins of semi-rigid, polypropylene sheet or polypropylene-coated material. Comply with AAMA 701/702.

2.3 STOREFRONT FRAMING SYSTEM

A. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

B. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials. Where exposes shall be stainless steel.

C. Perimeter Anchors: When steel anchors are used, provide insulation between steel material and aluminum material to prevent galvanic action.

D. Glazing Systems:
   1. Glazing Gaskets: Manufacturer's standard compression types; replaceable, extruded EPDM rubber.
   2. Spacers and Setting Blocks: Manufacturer's standard elastomeric type.
   3. Bond-Breaker Tape: Manufacturer's standard TFE-fluorocarbon or polyethylene material to which sealants will not develop adhesion.
   4. Glazing Sealants: For structural-sealant-glazed systems, as recommended by manufacturer for joint type, and as follows:
      a. Structural Sealant: ASTM C 1184, single-component neutral-curing silicone formulation that is compatible with system components with which it comes in contact, specifically formulated and tested for use as structural sealant and approved by a structural-sealant manufacturer for use in aluminum-framed systems indicated.
         1) Color: Black
      b. Weatherseal Sealant: ASTM C 920 for Type S, Grade NS, Class 25, Uses NT, G, A, and O; single-component neutral-curing formulation that is compatible with structural sealant and other system components with which it comes in contact; recommended by structural-sealant, weatherseal-sealant, and aluminum-framed-system manufacturers for this use.
         1) Color: Matching structural sealant.

2.4 ENTRANCE DOOR HARDWARE

A. General: Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, or other corrosion-resistant material compatible with aluminum; designed to smoothly operate, tightly close, and securely lock aluminum-framed entrance doors.

B. Standard Hardware:
   1. Weather-stripping:
      a. Meeting stiles on pairs of doors shall be equipped with two lines of weather-stripping utilizing wool pile with polymeric fin.
      b. The door weathering on a single acting offset pivot or butt hung door and frame (single or pairs) shall be comprised of a thermoplastic elastomer weathering on a tubular shape with a semi-rigid polymeric backing and a wool pile with polymeric fin.
   2. Sill Sweep Strips: EPDM blade gasket sweep strip in an aluminum extrusion applied to the interior exposed surface of the bottom rail with concealed fasteners (Necessary to meet specified performance tests).
   3. Threshold: Extruded aluminum, thermally broken, with ribbed surface.
   4. Other hardware as specified in Section 08 71 00.

2.5 ACCESSORY MATERIALS

A. Joint Sealants: For installation at perimeter of aluminum-framed systems, as specified in Section 07 90 00.

B. Bituminous Paint: Cold-applied, asphalt-mastic paint complying with SSPC-Paint 12 requirements except containing no asbestos; formulated for 30 mil thickness per coat.

2.6 FABRICATION – ALUMINUM STOREFRONT

A. Framing Members, General: Fabricate components that, when assembled, have the following characteristics:
   1. Profiles that are sharp, straight, and free of defects or deformations.
   2. Accurately fit joints; make joints flush, hairline and weatherproof.
   3. Means to drain water passing joints, condensation within framing members, and moisture migrating within the system to exterior.
   4. Physical and thermal isolation of glazing from framing members.
   5. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
   6. Provisions for field replacement of glazing.
   7. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.

B. Mechanically Glazed Framing Members: Fabricate for flush glazing without projecting stops.

C. Structural-Sealant-Glazed Framing Members: Include accommodations for using temporary support device to retain glazing in place while structural sealant cures.

D. Storefront Framing: Fabricate components for assembly using manufacturer’s standard installation instructions.

E. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

2.7 FABRICATION - ENTRNACE DOORS

A. Fabricate thermally broken aluminum-framed entrance doors in sizes indicated. Include a complete system for assembling components and anchoring doors.

B. Fabricate thermally broken aluminum-framed doors that are reglazable without dismantling perimeter framing.
   1. Door corner construction shall consist of mechanical clip fastening, SIGMA deep penetration plug welds and 1" (24 mm) long fillet welds inside and outside of all four corners. Glazing stops shall be hook-in type with EPDM glazing gaskets reinforced with non-stretchable cord.
   2. Accurately fit and secure joints and corners. Make joints hairline in appearance.
   3. Prepare components with internal reinforcement for door hardware.
   4. Arrange fasteners and attachments to conceal from view.

C. Weather-stripping: Provide weather-stripping locked into extruded grooves in door panels or frames as indicated on manufactures drawings and details.

2.8 SHOP FINISHING

A. Color Anodized Aluminum Surfaces: AAMA 611, AA-M12C22A44 non-specular as fabricated mechanical finish, medium matte chemical finish, and Architectural Class I 0.7 mils dark bronze anodized coating.

B. Concealed Steel Items: Galvanized to ASTM A123/A123M; minimum 1.2 oz/sq ft coating thickness; galvanize after fabrication.

C. Apply bituminous paint to concealed aluminum surfaces in contact with cementitious or dissimilar metals.

D. Touch-Up Primer for Galvanized Steel Surfaces: SSPC Paint 20 zinc rich.

E. Extent of Finish:
   1. Apply factory coating to surfaces exposed at completed assemblies.
   2. Apply finish to surfaces cut during fabrication so no natural aluminum is visible in completed assemblies, including joint edges.
   3. Apply touch-up materials recommended by coating manufacturer for field application to cut ends and minor damage to factory applied finish.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.

C. Verify rough opening dimensions, levelness of sill plate and operational clearances.

D. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure a coordinated, weather tight aluminum-framed storefront system installation.
   1. Masonry Surfaces: Visibly dry and free of excess mortar, sand, and other construction debris.
   2. Wood Frame Walls: Dry, clean, sound, well nailed, free of voids, and without offsets at joints. Ensure that nail heads are driven flush with surfaces in opening and within 3 inches (76 mm) of opening.
   3. Metal Surfaces: Dry; clean; free of grease, oil, dirt, rust, corrosion, and welding slag; without sharp edges or offsets at joints.

E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Comply with Drawings, Shop Drawings, and manufacturer's written instructions for installing systems, accessories, and other components.

B. Install system level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.

C. Set sill members in bed of sealant or with gaskets, as indicated, for weather tight construction.

D. Install systems and components to drain condensation, water penetrating joints, and moisture migrating within aluminum-framed storefront system to the exterior.

E. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

F. Install infill panels using method required to achieve performance criteria.

G. Coordinate installation of glass with Section 08 80 00; separate glass from metal surfaces.

H. Coordinate installation of perimeter sealants with Section 07 90 00.

3.3 ERECTION TOLERANCES

A. Section 01 40 00 - Quality Requirements: Tolerances.

B. Maximum Variation from Plumb: 0.06 inches every 3 ft non-cumulative or 1/16 inches per 10 ft, whichever is less.

C. Maximum Misalignment of Two Adjoining Members Abutting in Plane: 1/32 inch.

3.4 ADJUSTING

A. Section 01 70 00 - Execution and Closeout Requirements: Testing, adjusting and balancing.

B. Adjust operating hardware for smooth operation.

3.5 CLEANING

A. Section 01 70 00 - Execution and Closeout Requirements: Final cleaning.

B. Remove protective material from pre-finished aluminum surfaces.

C. Wash down surfaces with solution of mild detergent in warm water, applied with soft, clean wiping cloths. Take care to remove dirt from corners. Wipe surfaces clean.

D. Remove excess sealant by method acceptable to sealant manufacturer.

3.6 PROTECTION OF INSTALLED CONSTRUCTION

A. Section 01 70 00 - Execution and Closeout Requirements: Protecting installed construction.

B. Protect finished Work from damage.

END OF SECTION

SECTION 08 71 00

DOOR HARDWARE

PART 1 GENERAL

1.1 SUMMARY

A. Section includes:
1. Furnish hardware required to complete the work as shown on the drawings and as specified herein;
2. Furnish trim attachments and fastenings, specified or otherwise required, for proper and complete installation.
3. Deliver to the job site those items of finish hardware scheduled to be installed at the job site; and delivered to other points of installation those items of finish hardware scheduled to be factory installed, including:
   a. Butt Hinges
   b. Continuous Hinges
   c. Lock cylinders and keys
   d. Lock and latch sets
   e. Push/pull units
   f. Closers
   g. Overhead holders
   h. Miscellaneous door control devices
   i. Door trim units
   j. Protection plates
   k. Weather-stripping (except where provided with aluminum entrance doors)
   l. Thresholds
   m. Wall or floor stops

B. Related Sections:
1. Section 08 12 13 – Hollow Metal Frames: Silencers integral with steel frames.
2. Section 08 13 13 – Hollow Metal Doors.
3. Section 08 14 16 - Flush Wood Doors.
4. Section 08 41 13 – Aluminum-Framed Entrances and Storefronts.

1.2 REFERENCES

A. American National Standards Institute:
1. ANSI A117.1 – Accessible and Usable Buildings and Facilities.
2. ANSI A156.1 - Butts and Hinges.
3. ANSI A156.2 - Bored and Preassembled Locks and Latches.
4. ANSI A156.3 - Exit Devices.
5. ANSI A156.4 - Door Controls - Closures.
6. ANSI A156.5 - Auxiliary Locks and Associated Products.
7. ANSI A156.6 - Architectural Door Trim.
8. ANSI A156.7 - Template Hinge Dimensions.
9. ANSI A156.8 - Door Controls - Overhead Holders.
10. ANSI A156.12 - Interconnected Locks and Latches.
11. ANSI A156.13 - Mortise Locks and Latches.
12. ANSI A156.14 - Sliding and Folding Door Hardware.
13. ANSI A156.15 - Closer Holder Release Devices.
14. ANSI A156.16 - Auxiliary Hardware.

15. ANSI A156.18 - Materials and Finishes
16. ANSI A156.19 - Power Assist and Low Energy Power Operated Doors.
17. ANSI A156.23 - Electromagnetic Locks.
18. ANSI A156.24 - Delayed Egress Locks.
19. ANSI A156 - Complete Set of 24 BHMA Standards (A156 Series) with Binder.

B. International Code Council
   1. International Building Code - 2012

C. National Fire Protection Association:
   1. NFPA 80 - Standard for Fire Doors, Fire Windows.
   2. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies.

D. Underwriters Laboratories Inc.:
   1. UL 10B - Fire Tests of Door Assemblies.
   2. UL 305 - Panic Hardware.
   3. UL - Building Materials Directory.

E. Intertek Testing Services (Warnock Hersey Listed):
   1. WH - Certification Listings.

1.3 DEFINITIONS

A. "Finish Hardware": Items required for swinging, sliding and folding doors, except special types of unique and non-matching hardware specified under door and frame Sections of these Specifications.

1.4 DESIGN REQUIREMENTS

A. Thoroughly review finish hardware schedule, comparing it with the floor plan, door schedule, and door details to verify hardware requirements, quantities, door swings, finishes, and sizes.

B. If an inconsistency or error in the proposed construction documents is suspected, the hardware supplier is to bring it immediately to the attention of the Architect. If the quantity of items is questioned, for bidding purposes, assume the higher quantity is required and price accordingly.

C. Architect’s review of Submittals is for design concept only, and does not relieve the Contractor of the responsibility to furnish sufficient material and functions required for a complete, and code-worthy installation. Determination of all quantities is the responsibility of the Contractor.

1.5 PERFORMANCE REQUIREMENTS

A. Furnish finish hardware complying with the requirements of laws, codes, ordinances and guidelines of governmental authorities having jurisdiction:

B. NFPA 101, “Life Safety Code”, 2000 edition.

C. NFPA 80, “Installation of Fire Doors and Windows”, 1999 edition

D. International Building Code - 2012 Edition

E. ANSI A117.1-2009 Accessible and Usable Buildings and Facilities

F. Fire Rated Openings: Provide door hardware listed by UL or Intertek Testing Services (Warnock Hersey Listed), or other testing laboratory approved by applicable authorities.
   1. Hardware: Tested in accordance with NFPA 252.

1.6 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

B. Product data:
   1. Initial submittal of the proposed "Finish Hardware Schedule" in the following format:
      a. Vertically-typed, double-spaced;
      b. Organized into "hardware sets", indicating complete designations of every item required for each door or opening. Include the following information for each item of finish hardware:
         1) Manufacturer
         2) Type
         3) Style
         4) Function
         5) Size
         6) Degree and direction of opening swing (“hand”)
         7) Finish
         8) Fasteners
         9) Location of hardware set cross-referenced to indications on floor plans, door, schedule, and frame schedule.
         10) Explanation of all abbreviations, symbols, codes, etc. contained in schedule.
         11) Mounting heights and locations for hardware.
         12) Door and frame sizes and materials.
         13) Keying information.
         14) Riser & Wire Diagrams RPIOCR100815 are to be provided with the schedule.
   2. Final Finish Hardware Schedule immediately following receipt of the Architect’s approval of the initial submittal.

C. Samples:
   1. When requested by the Architect or Owner, submit one sample of each type of exposed hardware unit, finished as required, and tagged with a full description for coordination with schedule.
   2. Samples will be returned to the supplier.
   3. Units which are acceptable and remain undamaged through submittal, review and field comparison procedures may, after final check of operation, be built into the Work, within limitations of keying coordination requirements.

D. Templates: Furnish hardware templates with final submittal of Finish Hardware Schedule.

E. Manufacturer's Installation Instructions: Submit special procedures, and perimeter conditions requiring special attention.

1.7 CLOSEOUT SUBMITTALS

A. Section 01 70 00 - Execution and Closeout Requirements: Closeout procedures.

B. Project Record Documents: Record actual locations of installed cylinders and their master key code.

C. A copy of the as-built Riser & Wire Diagrams RPIOCR100815.

D. Operation and Maintenance Data: Submit data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance. Provide complete copies of manufacturer's catalog cuts and maintenance instructions for each item furnished under the Work of this Section.

E. Keys: Deliver with identifying tags to Owner by security shipment direct from hardware supplier.

1.8 QUALITY ASSURANCE

A. Perform Work in accordance with the following requirements:
   1. ANSI A156 series.
   2. NFPA 80.
   3. UL 305.

B. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the requirements and the methods needed for proper performance of the work of this Section.

C. Provide the service of a qualified Architectural Hardware Specialist to:
   1. Be available for consultation with the Architect at no additional cost to the Owner during progress of construction, and:
      a. Inspect installation of all finish hardware items;
      b. Make all minor adjustments required; and
      c. Report to the Architect on completeness of the installation.
   2. The hardware consultant may be an employee of the supplier.

1.9 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

B. Supplier qualifications:
   1. A recognized architectural finish hardware supplier with warehousing facilities within a 200 mile radius of the project site and a direct distributor of all products listed on the approved finish hardware schedule.
   2. Continuously in business of finish hardware supply for not less than 5 years.

C. Installer qualifications: Employ a competent hardware installer with at least five (5) years experience installing commercial grade hardware similar to that proposed for the Work.

D. Source limitations: Obtain each type of hardware (latch and lock sets, hinges, closers, etc.) from a single manufacturer, although several may be indicated as offering products complying with requirements.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.

B. Package hardware items individually with necessary fasteners, instructions, and installation templates, when necessary; label and identify each package with door opening code to match hardware schedule.
   1. Include instructions, templates, and fasteners needed for installation.

C. Deliver individually packaged hardware items on a vehicle operated by a direct employee of the Hardware Supplier. Contractor shall immediately, and in the presence of the Hardware Supplier, inventory the contents of the delivery.

D. Hardware supplier: Furnish finish hardware items directly to the factory or mill for factory-installation, where required.

1.11 COORDINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Coordinate Work with other directly affected sections involving manufacture or fabrication of internal reinforcement for door hardware and recessed items.
   1. Provide templates or actual hardware as required to ensure proper preparation of doors and frames.

C. Sequence installation to accommodate required utility connections.

D. Coordinate Owner's keying requirements during course of Work.

1.12 WARRANTY

A. Section 01 70 00 - Execution and Closeout Requirements: Product warranties and product bonds.

B. Warrant all finish hardware items against defects in materials and workmanship for one year.

C. Extended warranty: Extend the above warranty on certain items of finish hardware as follows:
   1. Door closers: To twenty five years
   2. Continuous hinges: To ten years
   3. Exit devices: To ten years
   4. Locks and latch sets: To twenty five years

D. Manufacturer agrees to promptly replace (including installation by the hardware supplier) defective products at no additional cost to the Owner, for the duration of the warranty period.

E. The terms of such warranties extend from the Date of Substantial Completion as that date is defined by the General Conditions.

F. Failures due to defective materials or workmanship is deemed to include, but not to be limited to:
   1. Failures in operation of any operating component;
   2. Defects which contribute to unsightly appearance, potential safety hazard, or potential untimely failure of the products furnished under this Section.

1.13 MAINTENANCE MATERIALS

A. Section 01 70 00 - Execution and Closeout Requirements: Maintenance materials.

B. Furnish special wrenches and tools applicable for each different and for each special hardware component.

C. Furnish maintenance tools and accessories supplied by hardware component manufacturer.

1.14 EXTRA MATERIALS

A. Section 01 70 00 - Execution and Closeout Requirements: Spare parts and maintenance products.

B. Furnish ten extra key lock cylinders for each master keyed group.

PART 2 PRODUCTS

2.1 GENERAL

A. Requirements for design, grade, function, finish, size, and other distinctive qualities of each finish hardware item is indicated in the Finish Hardware Schedule at the end of this Section.

B. Product designations:
1. One or more manufacturers are listed for each hardware type required. Provide the product designated or the comparable product listed under this Section.

C. ANSI/BHMA designations:
1. Used to describe hardware items, or to define quality or function. Provide products complying with these standards in addition to additional requirements of this Section.

D. Hand of door: Drawings show direction of slide, swing (“hand”) of door leafs.

E. Hardware: Use hardware manufactured to conform to published templates and, generally, prepared for machine screw installation. Do not provide hardware which has been prepared for self-tapping sheet metal screws, except as specifically indicated.

2.2 MATERIALS

A. Base metals:
1. Manufacturer's standard metal alloy, composition, temper and hardness, but in no case of lesser (commercially-recognized) quality than that specified for applicable hardware units by applicable ANSI A156 series standard for each type hardware item and with ANSI A156.18 for finish designations indicated.
2. Do not furnish "optional" materials for those indicated, except as otherwise specified.

B. Fasteners:
1. Furnish Phillips flat-head screws with each hardware item, unless otherwise indicated.
2. Exposed screws: Match finish of hardware (even where noted to be "prepared for paint").
3. Use concealed fasteners for hardware units which are exposed when door is closed, except where no standard units of type specified are available with concealed fasteners.
4. Do not use thru-bolts where bolt head or nut on opposite face would be exposed.
5. Where adequate reinforcement is not feasible, thru-bolting would only be acceptable if through sleeves, or if sex-screw fasteners are used.

C. Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of finish hardware.

2.3 MANUFACTURED UNITS

A. Reference standards:

Item:	Comply with:
1. Butts and hinges:	ANSI A156.1-1988 (BHMA 101)
2. Locks and lock trim:	ANSI A156.2-1987 (BHMA 601)
3. Exit devices:	ANSI A156.3-1989, Grade 1 BHMA 701)
4. Door controls-closers:	ANSI A156.4-1986,Grade 1 BHMA 301)
5. Architectural door trim:	ANSI A156.6 (BHMA 1001)
6. Template hinge dimensions:	ANSI A156.7
7. Door controls-overhead holders:	ANSI A156.8 (BHMA 311)
8. Mortise locks and latches:	ANSI A156.13-1987, Grade 1
9. Auxiliary hardware:	ANSI A156.16-1989(BHMA 1201)

B. Hardware finishes:
   1. Materials and Finishes Standard: Comply with ANSI A156.18 (BHMA 1301). Finish designations used in schedules are listed, therein.
   2. Provide US32D or US26D at all finish hardware exposed to view on wood door.
   3. Provide matching finishes for hardware units at each door, unless otherwise indicated.
   4. Match the color and texture of hardware items to manufacturer's standard finish for the latchset, lockset, or push-pull unit.
   5. Provide quality of finish, including thickness of plating or coating, composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than that specified or described by referenced standards.

C. Hardware for fire-rated openings:
   1. Comply with NFPA 80.
   2. Tested and listed by Underwriters Laboratory (UL), or Factory Mutual (FM) for type, size and use of door, and complying with requirements of door and door frame label.
   3. Provide UL or FM label on door indicating "Fire door to be equipped with fire-exit hardware".
   4. Provide UL or FM label on exit device indicating "Fire Exit Hardware".

2.4 PRODUCTS

A. Hinges, butts and pivots:
   1. General:
      a. ANSI A156.1 - 1988 for commercial quality.
      b. Provide only template-produced units.
      c. All hinges to be ball bearing-type.
      d. Hinges at exterior doors shall be of non-ferrous material.
   2. Screws:
      a. At metal doors and frames: Machine screws.
      b. At wood doors and frames: Phillips flat-head wood screws.
      c. Finish screw heads to match surface of hinges or pivots.
   3. Pins:
      a. Steel hinges: Steel
      b. Non-ferrous hinges: Stainless Steel
      c. Hinges at all doors: Non-removable (NRP)
   4. Tips:
      a. Flat button with matching plug
   5. Number of hinges: Provide number of hinges indicated but not less than 3 hinges.
   6. Hinge sizing:
      a. According to hinge manufacturer’s recommendation for door size and weight, unless otherwise specified.
      b. Hinges for door widths 3 feet, or less: Standard-weight (.134)
      c. Hinges for door widths over 3 feet: Heavy-weight (.180) hinges

7. Acceptable products: PBB, PDQ, SDC

B. Locksets: Shall be PDQ MR or GT series as scheduled. Equivalent products shall be Sargent 8200 for mortise locks and T Zone for cylindrical locks.

C. Panic Devices: Shall be PDQ 7000 series as scheduled. Equivalent products shall be MBS Q1000 series.

D. Lock Cylinders and Keying:
   1. General:
      a. Supplier shall meet with Owner and Architect to finalize keying direction and furnish a complete key schedule. The key schedule shall include keysets, marks and key schedule corresponding to each opening.
   2. Cylinders:
      a. Type: Mortise or rim-type as required by function of locking device.
      b. Provide screw on cams or tail piece as required.
      c. Construct lock cylinder parts from brass/bronze, stainless steel or nickel silver.
      d. Provide solid machined cylinder rings with tension spring to resist wrenching of cylinder. Length, finish and size as required.
      e. Provide cylinder(s) and core(s) as required by function for each locking device.
   3. System:
      a. Provide combinated cylinders / cores, keyed to owners' master key system.
   4. Keying:
      a. Deliver keys and final cores to the hardware installation Contractor for final installation, when directed by the Owner.
      b. Comply with Owner's instructions for master keying and, except as otherwise indicated, provide individual change key for each lock which is not designated to be keyed alike with a group of related locks.
      c. Key material: Nickel silver
      d. Key quantity: Two (2) change keys for each lock.

E. Exit devices:
   1. General:
      a. Comply with ANSI A156.3, Grade 1, Types 1, 4, and 28 criteria for products supplied.
      b. At fire doors:
         1) Provide UL or FM label on exit device indicating "Fire Exit Hardware", where appropriate.
         2) Mount exit device using sex-bolts on labeled wood doors.
   2. Description:
      a. Type: Flat, push-bar type –Thick walled aluminum body with stainless steel touch pad.
      b. Provide functions as specified in sets.
      c. Trim: Functions as Specified.
      d. Provide dead-locking latch bolts.
      e. Provide glass bead trim kit 6290150 at raised lite trim locations.
      f. Acceptable products: PDQ 6000, SDC 6000

F. Push / Pull bars & Grips:
   1. General:
      a. ANSI A156.16 - 1989 Grade 1 criteria.
   2. Description:
      a. Offset pull bar 1" in diameter straight / offset & center to center as specified.
      b. Straight push, low-profile flat bar x center to center as required.
   3. Mounting:
      a. Mount push-pull bars back to back with thru-bolts and A thru flow mount at free ends.

b. Mount pull bars with thru-bolts and A thru flow mount at free ends.
c. Mount offset pulls so as to avoid conflict with vertical rod, when used in conjunction with vertical rod exit devices.
d. Mount back to back pulls with appropriate fasteners accounting on door thickness and type.

4. Acceptable products: PDQ, Hiawatha, Don Jo

G. Door closers:
1. General:
a. ANSI A156.4 - 1986 Grade 1 criteria.
b. All closers shall be the products of one manufacturer.
2. Description:
a. Full rack-and-pinion type
b. Cast Iron Body.
c. Hydraulic fluid: Non-gumming and non-freezing.
d. Closer body: Non-handed, multi-size spring power.
e. With three non-critical V valves and hex key adjustment to independently regulate sweep latch speed and backcheck.
f. Provide mounting brackets necessary to clear sound seals and weatherstrip.
g. Enclose in a full, molded cover.
h. Provide drop plates or special brackets for proper mounting.
i. Pressure Relief Valves will NOT be accepted on Door Closers.
j. Provide Barrier Free power setting as required by ANSI A117.1
k. Where SCS is specified, furnish a Stainless-Steel swivel snubber. Stationary snubbers, rubber grommets and studs will not be accepted.
3. Acceptable products: PDQ 7000, MBS QDC44, IDC 44CI

H. Stops:
1. General:
a. ANSI A156.16 - 1989 Grade 1 criteria.
b. Provide stops where scheduled, wall or floor, as opening conditions dictate, utilizing wall stops wherever possible.
2. Description:
a. Wall stops: Cast brass, bronze or stainless steel. Concave wall stop to have stainless steel washer imbedded in rubber stop.
b. Floor stops: Cast Stainless, brass or bronze, and plated as required.
c. Make selection of floor stop height based upon floor conditions and door undercut.
d. Overhead stops: Surface or concealed-mounted overhead stops where scheduled. Size track and arm to door width. Provide thru-bolts when used on fire-rated or hollow core wood doors.
3. Acceptable products: PDQ, Hiawatha, Don Jo

I. Door Seal and Inside Astragals:
1. General:
a. ANSI A156.21 - 1989, Grade 1 criteria.
2. Description:
a. Flat profile.
b. Dimensions: Appropriate to door opening size.
c. Installation locations are scheduled.
d. Provide templates for thresholds to related door suppliers to coordinate proper undercut.
3. Mounting:
a. Apply related hardware (closer, foot bracket, strike, etc.) on top of hardware compatible type weatherstrip.

b. Do not notch or splice weather strip.
c. Adjust related template hardware locations, as required.

4. Acceptable products: Reese, IDC, KN Crowder

J. Thresholds:
1. General:
a. ANSI A156.21 - 1989, Grade 1 criteria.
b. Comply with A.D.A. requirements, unless otherwise scheduled.
2. Description:
a. Flat profile
b. Installation locations are scheduled.
c. Provide templates for thresholds to related door suppliers to coordinate proper undercut.
3. Acceptable products: Reese, IDC, KN Crowder

K. Sweeps and strips:
1. General:
a. ANSI A156.21 - 1989, Grade 1 criteria.
2. Description:
a. Flat profile.
b. Dimensions: Appropriate to door opening size.
c. Installation locations are scheduled.
3. Acceptable products: Reese, IDC, KN Crowder

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

2.5 HARDWARE FINISHES

A. General:
1. Provide matching finishes for hardware units at each door or opening, to the greatest extent possible and except as otherwise indicated.
2. Reduce differences in color and textures as much as commercially possible where the base metal or metal forming process is different for individual units of hardware exposed at the same door or opening.
3. In general, match items to the manufacturer's standard finish for the latch and lock set (or push/pull units if no latch/lock sets) for color and texture.
4. Provide finishes matching those established by BHMA or, if none established, match the Architect's sample.
5. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness and other qualities complying with manufacturer's standards, but in no case less than that specified for the applicable units of hardware by referenced standards.
6. Finish designations used in schedules and elsewhere listed in ANSI A156.18 "Materials and Finishes Standard", including coordination with the traditional U.S. finishes shown by certain manufacturers for their products.

B. Provide the following hardware finishes, unless otherwise scheduled: Dark Bronze / Dark Aluminum color pallet.

C. Base material: Manufacturer’s standard high-carbon steel, brass, or bronze.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Verify doors and frames are ready to receive door hardware and dimensions are as indicated on shop drawings.

C. Verify electric power is available to power operated devices and is of correct characteristics.

D. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 INSTALLATION

A. General:
   1. Install each item in its proper location firmly anchored into position, level and plumb, and in accordance with the manufacturer's recommendations.
   2. Handing, hardware heights, locations, and degree of opening swing are indicated in the Drawings and Finish Hardware Schedule.
   3. Mount finish hardware units:
      a. At recommended heights and locations as shown in approved finish hardware schedule, complying with requirements of the A.D.A., and pertinent provisions of the Building Code.
      b. To function at proper degree of opening of doors as indicated on approved finish hardware schedule.
      c. By manufacturer's template.
      d. Prior to final finishing of the door. Remove hardware to allow finishing of door, and permanently reinstall hardware upon completion of finishing operation.
   4. Reinforce, where necessary, the substrate to assure proper attachment.
   5. Drill and countersink units which are not factory-prepared for anchorage fasteners.
   6. Space fasteners and anchors in accordance with industry standards.

B. Installing closers:
   1. Mount closers per manufacturer's template, and secure the Architect’s approval of the closer installation.
   2. The Contractor will be required to REPLACE doors onto which closers are improperly mounted at no additional cost to the Owner. Repair or patching of such doors will not be acceptable.

C. Installing thresholds at exterior doors: Set in full bed of butyl-rubber, or polyisobutylene mastic sealant.

3.3 FIELD QUALITY CONTROL

A. Section 01 70 00 - Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.

B. Inspection of final hardware installation: The Contractor, hardware suppliers, and Architectural Hardware Consultant (AHC) shall thoroughly check the quality of the installation and the functionality of each unit of finish hardware at all openings in the Work. The Hardware Supplier

shall forward a detailed written report of all operational or installation deficiencies to the Architect and Contractor.

3.4 ADJUSTING AND CLEANING

A. Section 01 70 00 - Execution and Closeout Requirements: Testing, adjusting, and balancing.

B. Check and adjust each item of hardware and each door upon completion of final installation. Verify proper function, and replace units which cannot be made to operate freely and smoothly, as intended for the application.

C. Clean adjacent surfaces soiled by hardware installation.

3.5 PROTECTION OF INSTALLED CONSTRUCTION

A. Section 01 70 00 - Execution and Closeout Requirements: Protecting installed construction.

B. Do not permit adjacent work to damage hardware or hardware finish.

3.6 SCHEDULES

Hardware Set 1 –Rim Panic w/ Pull Trim [Lock / Unlock] + Closer Stop

3	ea.	Butt Hinge 4B21 4 ½" x 4 ½" NRP	10B	PBB
1	ea.	Rim Panic Device 6212R (03) (CD)	10B	PDQ
1	ea.	Rim Cylinder -Match Existing Keying (03)	10B	----
1	ea.	Mortise Cylinder -Match Existing Keying (CD)	10B	----
1	ea.	Offset Pull 1157 x 4 134 Mount	10B	Don Jo
1	ea.	Closer 7101 BC SCS Stop x DPPA-BS-NFB	695	PDQ
1	ea.	Threshold S205	DB	Reese
1	ea.	Sweep 354 –Mount pull side	DB	Reese
1	set	Weatherstrip by door and frame supplier	DB	DFS

END OF SECTION

SECTION 08 80 00

GLAZING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Glass glazing for metal frames, and doors.
2. Glass glazing materials and installation requirements are included in this section for other sections referencing this section.

B. Related Sections:
1. Section 08 41 13 – Aluminum-Framed Entrances and Storefronts.

1.2 REFERENCES

A. American National Standards Institute:
1. ANSI Z97.1 - Safety Glazing Materials Used in Buildings Safety.

B. American Society of Civil Engineers:
1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.

C. ASTM International:
1. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
2. ASTM C1048 - Standard Specification for Heat-Treated Flat Glass-Kind HS, Kind FT Coated and Uncoated Glass.
3. ASTM C1193 - Standard Guide for Use of Joint Sealants.
4. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
5. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings.
6. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation.

D. Consumer Products Safety Commission:
1. CPSC 16 CFR 1201 - Safety Standard for Architectural Glazing.

E. Glass Association of North America:
1. GANA - Sealant Manual.
2. GANA - Glazing Manual.

F. National Fenestration Rating Council Incorporated:
1. NFRC 100 - Procedures for Determining Fenestration Product U-Factors.
2. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence.
3. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems.

G. National Fire Protection Association:
1. NFPA 80 - Standard for Fire Doors, Fire Windows.
2. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies.
3. NFPA 257 - Standard on Fire Test for Window and Glass Block Assemblies.

H. Underwriters Laboratories Inc.:
   1. UL 10C - Positive Pressure Fire Tests of Door Assemblies.
   2. UL - Building Materials Directory.

1.3 PERFORMANCE REQUIREMENTS

A. Provide glass and glazing materials for continuity of building enclosure:
   1. To maintain continuous air barrier and vapor retarder throughout glazed assembly from glass pane to heel bead of glazing sealant.

B. Glass Thickness: Select minimum thickness in accordance with ASTM E1300 to resist specified design loads with the following maximum probability of breakage:
   1. Vertical Glass: 8 lites per 1000 for wind loads with 3 seconds maximum load duration.
   2. Sloped Glass: 1 lite per 1000 for wind and snow loads with 30 days maximum load duration.
   3. Minimum Thickness: 1/4 inch for exterior glass.

C. Structural Design: Design in accordance with applicable code for most critical combination of wind, snow, seismic, and dead loads.

D. Wind Loads: Design and size glass to withstand positive and negative wind loads acting normal to plane of wall, including increased loads at building corners.
   1. Design Wind Load: Per ASCE 7.

E. Seismic Loads: Design and size components to withstand seismic loads and sway displacement as calculated in accordance with applicable code.

F. Exterior Glass Deflection: Maximum of 1/175 of glass edge length or 3/4 inch, which ever is less with full recovery of glazing materials.

G. Interior Glass Deflection: Maximum differential deflection for two adjacent unsupported edges when 50 plf force is applied to one panel at any point up to 42 inches above finished floor less than thickness of glass.

H. Thermal and Solar Optical Performance: Measured or calculated in accordance with the following:
   1. Maximum U-Values: Comply with ICC IEEC for climate zone in which project is located. Measure in accordance with NFRC 100.
   2. Maximum SHGC: Comply with ICC IEEC for climate zone in which project is located. Measure in accordance with NFRC 200.
   3. Solar Optical Properties: NFRC 300.

1.4 SUBMITTALS

A. Product Data:
   1. Glass: Provide structural, physical, and thermal and solar optical performance characteristics, size limitations, special handling or installation requirements.
   2. Glazing Sealants, Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements. Identify available colors where exposed.

B. Design Data:
   1. Submit design calculations for glass thicknesses.

C. Manufacturer's Certificate: Certify sealed insulating glass, meets or exceeds specified requirements.

D. Installer's Certificate: Certify glass furnished without identification label is installed in accordance with Construction Documents and applicable code.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with GANA Glazing Manual, GANA Sealant Manual, for glazing installation methods.

1.6 QUALIFICATIONS

A. Installer: Company specializing in performing Work of this section with minimum three years documented experience approved by manufacturer.

1.7 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.

1.8 WARRANTY

A. Furnish 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 FLOAT GLASS MATERIALS

A. Tempered Glass (FG-CT): ASTM C1048, Type 1 transparent flat, Quality Q3, Kind FT fully tempered, Condition A uncoated, float glass with horizontal tempering.
   1. Furnish tempered glass conforming to CPSC 16 CFR 1201 Category II.

2.2 FLOAT GLASS PRODUCTS

A. Float Glass Manufacturers:
   1. ACH Glass Operations.
   2. AFG Industries, Inc.
   3. Guardian Industries Corp.
   4. PPG Industries.
   5. Pilkington North America, Inc.
   6. Substitutions permitted.

B. Low E Glass: Annealed, Heat strengthened, and Tempered float glass as specified; Class 1 clear.
   1. Clear Low E annealed glass (FG-ECA).
   2. Clear Low E heat strengthened glass (FG-ECH).
   3. Clear Low E tempered glass (FG-ECT).
   4. Minimum Thickness: 1/4 inch.
   5. Solar Light Transmittance: 70 percent minimum.

6. Solar Heat Gain Coefficient: 0.38 maximum.

2.3 INSULATING GLASS PRODUCTS

A. Insulating Glass Manufacturers:
   1. AFG Industries, Inc..
   2. Arch Aluminum and Glass.
   3. Guardian Industries Corp.
   4. PPG Industries.
   5. Viracon.
   6. Substitutions permitted.

B. Insulating Glass: ASTM E2190 certified by Insulating Glass Certification Council; with silicone sealant edge seal; purge interpane space with dry hermetic air.
   1. Total Unit Thickness: 1 inch unless otherwise indicated.
   2. Insulating Glass Unit Edge Seal Construction: Aluminum, bent and soldered corners.

C. Double Pane Insulating Vision Glass (IG-DP):
   1. Total Unit Thickness: 1 inch unless otherwise indicated.
   2. Outer Pane: Glass Type FG-ECT.
   3. Inner Pane: Glass Type FG-CT.

2.4 GLAZING SEALANTS

A. Elastomeric Glazing Sealants: Materials compatible with adjacent materials including glass, insulating glass seals, and glazing channels.
   1. Silicone Glazing Sealant: ASTM C920, Type S, Grade NS, Class and Use suitable for glazing application indicated; single component; chemical curing; capable of water immersion without loss of properties; non-bleeding, non-staining, cured Shore A hardness of 15 to 25; compounded by manufacturer specifically for glazing.
      a. Structural Silicone: Furnish high-modulus structural silicone glazing materials where sealant bonds glass to substrate.

B. Pre-Formed Glazing Tape: Size to suit application.
   1. Preformed butyl compound; 10 to 15 Shore A durometer hardness; coiled on release paper; black color.
      a. Butyl Corner Sealant: ASTM C920 single component non-skinning butyl compatible with glazing tape; color to match tape.

2.5 GLAZING ACCESSORIES

A. Setting Blocks: Elastomeric material recommended by glass manufacturer, 80 to 90 Shore A durometer hardness, 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: Elastomeric material recommended by glass manufacturer, 50 to 60 Shore A durometer hardness, minimum 3 inch long x one half the height of glazing stop x thickness to suit application.

C. Glazing Clips: Manufacturer's standard type.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify openings for glazing are correctly sized and within acceptable tolerance.

B. Verify surfaces of glazing channels or recesses are clean, free of obstructions impeding moisture movement, weeps are clear, and ready to receive glazing.

3.2 PREPARATION

A. Clean contact surfaces with solvent and wipe dry.

B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.

C. Prime surfaces scheduled to receive sealant.

3.3 INSTALLATION

A. Perform installation in accordance with GANA Glazing Manual.
   1. Glazing Sealants: Comply with ASTM C1193.
   2. Fire Rated Openings: Comply with NFPA 80.

B. Exterior Wet/Dry Method (Preformed Tape and Sealant) Installation:
   1. Cut glazing tape to length and set against permanent stops, 3/16 inch below sight line. Seal corners by butting tape and dabbing with compatible butyl sealant.
   2. Apply heel bead of butyl sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete continuity of air and vapor seal.
   3. Place setting blocks at 1/4 points with edge block no more than 6 inches from corners.
   4. Rest glazing on setting blocks and push against tape and heel bead of sealant with sufficient pressure to attain full contact at perimeter of pane or glass unit.
   5. Install removable stops, with spacer strips inserted between glazing and applied stops, 1/4 inch below sight line. Place glazing tape on glazing pane or unit with tape 1/4 inch below sight line.
   6. Fill gap between glazing and stop with elastomeric glazing sealant to depth equal to bite of frame on glazing, but not more than 3/8 inch below sight line.
   7. Apply cap bead of elastomeric glazing sealant along void between stop and glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

C. Interior Dry Method (Tape and Tape) Installation:
   1. Cut glazing tape to length and set against permanent stops, projecting 1/16 inch above sight line.
   2. Place setting blocks at 1/4 points with edge block no more than 6 inches from corners.
   3. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.
   4. Place glazing tape on free perimeter of glazing in same manner described above.
   5. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.
   6. 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 SCHEDULE

A. Exterior Doors and Aluminum Entrances: Type IG-DP, glazing method recommended by manufacturer.

END OF SECTION

SECTION 09 21 16

GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Gypsum board and joint treatment.
   2. Textured finishes.

B. Related Requirements:

   1. Section 06 10 00 - Rough Carpentry: Building wood framing system.
   2. Section 07 21 16 - Blanket Insulation: Thermal insulation.

1.2 REFERENCE STANDARDS

A. ASTM International:
   1. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
   2. ASTM C557 - Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing.
   3. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board.
   4. ASTM C1002 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases.
   5. ASTM C1047 – Standard Specifications for Accessories for Gypsum Wallboard.
   6. ASTM C1396/C1396M - Standard Specification for Gypsum Board.
   7. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
   8. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.

B. Gypsum Association:
   1. GA 214 - Recommended Levels of Gypsum Board Finish.
   2. GA 216 - Application and Finishing of Gypsum Board.
   3. GA 600 - Fire Resistance Design Manual Sound Control.

C. Intertek Testing Services (Warnock Hersey Listed):
   1. WH - Certification Listings.

D. National Fire Protection Association:
   1. NFPA 265 - Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Textile Coverings on Full Height Panels and Walls, Method B.
   2. NFPA 286 - Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Wall and Ceiling Interior Finish.

E. Underwriters Laboratories Inc.:
   1. UL - Fire Resistance Directory.

1.3 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit data on gypsum board, joint tape; decorative finish, and accessories.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with ASTM C840, GA-214, GA-216 and GA-600 as applicable.

1.5 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

B. Installer: Company specializing in performing Work of this section with minimum three years documented experience.

PART 2 PRODUCTS

2.1 GYPSUM BOARD ASSEMBLIES

A. Manufacturer List:
   1. Georgia-Pacific Corporation.
   2. National Gypsum Co.
   3. United States Gypsum Co.
   4. Gold Bond Building Products
   5. Or equal

2.2 COMPONENTS

A. Gypsum Board Materials: ASTM C1396/C1396M; Type X fire resistant where indicated on Drawings.
   1. Standard Gypsum Board: thickness indicated on Drawings, maximum available length in place; ends square cut, tapered edges.

2.3 ACCESSORIES

A. Gypsum Board Accessories: ASTM C1047; metal; corner beads, edge trim, and expansion joints.
   1. Metal Accessories: Galvanized steel.
   2. Edge Trim: Type LC, L, and U bead as required.

B. Joint Materials: ASTM C475/C475M; reinforcing tape, joint compound, and water.

C. Gypsum Board Screws: ASTM C1002; length to suit application.
   1. Screws for Wood Framing: Type W.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for installation examination.

B. Verify site conditions are ready to receive work and opening dimensions are as indicated on shop drawings.

3.2 DEMOLITION

A. Extend existing gypsum board installations using materials and methods as specified.

B. Repair and remodel existing gypsum board assemblies which remain or are to be altered.

3.3 INSTALLATION

A. Gypsum Board Installation:
   1. Install gypsum board in accordance with ASTM C840, GA-216, and GA-600.
   2. Erect single layer standard gypsum board in most economical direction, with ends and edges occurring over firm bearing.
   3. Use screws when fastening gypsum board to metal furring or framing.
   4. Place control joints consistent with lines of building spaces as recommended or otherwise required to prevent cracking in finished surfaces.
   5. Place corner beads at external corners. Use longest practical length. Place edge trim where gypsum board abuts dissimilar materials.

B. Joint Treatment:
   1. Finish in accordance with GA-214.
   2. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
   3. Feather coats on to adjoining surfaces so that camber is maximum 1/32 inch.
   4. Taping, filling, and sanding is required at all exposed to view surfaces
   5. Taping and filling is required at concealed surfaces.

C. Texture Finish (Knock-down):
   1. Apply texture to substrate using hopper and manufacturer’s recommended spray equipment to produce spatter texture.
   2. During setting process, knock-down high surfaces of texture using flexible, broad blade acrylic knife.

3.4 TOLERANCES

A. Section 01 40 00 - Quality Requirements: Tolerances.

B. Maximum Variation of Finished Gypsum Board Surface from Flat Surface: 1/8 inch in 10 feet.

3.5 ATTACHMENTS

A. Finishes in accordance with GA-214 Level:
   1. Level 1: Above finished ceilings concealed from view.
   2. Level 4: Walls exposed to view.
   3. Level 3 with Knock-down Texture: Ceilings exposed to view.

END OF SECTION

SECTION 09 30 00

TILING

PART 1 GENERAL

1.1 SUMMARY

A. Section includes tile for floor and wall applications; tile application methods; and accessories.

1.2 REFERENCES

A. American National Standards Institute:
   1. ANSI A108.1 - Installation of Ceramic Tile, A collection.
   2. ANSI A108.1B - Specifications for Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex Portland Cement Mortar.
   3. ANSI A108.5 - Specifications for Ceramic Tile Installed with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar.
   4. ANSI A108.10 - Specifications for Installation of Grout in Tilework.
   5. ANSI A108.13 – Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone.
   6. ANSI A118.4 - Latex-Portland Cement Mortar.
   7. ANSI A118.6 - Ceramic Tile Grouts.

B. Tile Council of America:
   1. TCA - Handbook for Ceramic Tile Installation.

1.3 SUBMITTALS

A. Section 01 33 00 - Submittals: Submittal procedures.

B. Product Data: Submit instructions for using grouts.

C. Samples:
   1. Submit tile and grout samples illustrating pattern, and color variations.
   2. Submit samples of external bullnose metal trim for selection.

1.4 CLOSEOUT SUBMITTALS

A. Section 01 70 00 – Execution and Closeout: Operation and maintenance data.

B. Operation and Maintenance Data: Submit recommended cleaning methods, cleaning materials, stain removal methods, and polishes and waxes.

1.5 QUALITY ASSURANCE

A. Section 01 40 00 – Quality Requirements: Requirements for compliance with reference standards.

B. Perform Work in accordance with TCA Handbook and ANSI A108 Series/A118 Series.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

B. Installer: Company specializing in performing Work of this section with minimum three years documented experience.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 – Material and Equipment: Product storage and handling requirements.

B. Protect grouts from freezing or overheating.

1.8 ENVIRONMENTAL REQUIREMENTS

A. Do not install adhesives and grouts in unventilated environment.

B. Maintain ambient and substrate temperature of 50 degrees F during installation of mortar materials.

PART 2 PRODUCTS

2.1 QUARRY TILE

A. Quarry Tile: Match existing, conforming to the following:
   1. Size: 6 x 6 nominal.
   2. Shape: Square
   3. Surface: Unglazed.
   4. Color: Match existing.

B. Base: Cove Base, same as floor tile.
   1. Length: 6 inch.
   2. Height: 6 inch.

2.2 ACCESSORIES

A. Mortar Materials:
   1. Mortar Bed Materials: ANSI A108.1B; portland cement, sand, and water; proportioned in accordance with applicable code.
   2. Mortar Bond Coat Materials:
      a. Latex-Portland Cement type: ANSI A118.4.

B. Grout Materials:
   1. Grout: Latex-Portland cement type as specified in ANSI A118.6.
      a. Color: As selected.

PART 3 ECUTION

3.1 EXAMINATION

A. Section 01 40 00 – Quality Requirements: Examination and acceptance of preceding work.

B. Verify surfaces are ready to receive work.

3.2 PREPARATION

A. Protect surrounding work from damage.

B. Vacuum clean surfaces.

C. Seal substrate surface cracks with filler.

3.3 EXISTING WORK

A. Prepare and remodel existing tile installations using materials and methods as specified.

B. Clean and repair existing tile which remains.

3.4 INSTALLATION

A. Install tile and grout in accordance with applicable requirements of ANSI A108.1 through A108.10, and TCA Handbook recommendations.

B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.

C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor, base and wall joints.

D. Place tile with joints uniform in width, subject to variance in tolerance allowed in tile size. Make joints watertight, without voids, cracks, excess mortar, or excess grout.
   1. Quarry Tile: 3/8 inch.

E. Form internal angles square.

F. Sound tile after setting. Replace hollow sounding units.

G. Keep expansion and control joints free of adhesive or grout. Apply sealant to joints.

H. Allow tile to set for a minimum of 48 hours prior to grouting.

I. Grout tile joints.

J. Installation - Floors - Mortar Bed Methods:
   1. Over interior concrete substrates, install in accordance with TCA Handbook Method F112, bonded.

3.5 CLEANING

A. Section 01 70 00 – Execution and Closeout: Final cleaning.

B. Clean tile and grout surfaces.

3.6 PROTECTION OF INSTALLED CONSTRUCTION

A. Do not permit traffic over finished floor surface for 4 days after installation.

END OF SECTION

SECTION 09 90 00

PAINTING AND COATING

PART 1 GENERAL

1.1 SUMMARY

A. Section includes surface preparation and field application of paints, and other coatings.

1.2 REFERENCES

A. ASTM International:
   1. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications.
   2. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials.
   3. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

B. Painting and Decorating Contractors of America:
   1. PDCA - Architectural Painting Specification Manual.

C. SSPC: The Society for Protective Coatings:
   1. SSPC - Steel Structures Painting Manual.

1.3 DEFINITIONS

A. Conform to ASTM D16 for interpretation of terms used in this section.

1.4 SUBMITTALS

A. Section 01 33 00 - Submittals: Submittal procedures.

B. Product Data: Submit data on finishing products. Identify each component based upon paint system that it is used in.

C. Samples:
   1. Submit paper chip samples illustrating range of colors available for each surface finishing product scheduled.

1.5 CLOSEOUT SUBMITTALS

A. Section 01 70 00 – Execution and Closeout Requirements: Submittal requirements.

B. Operation and Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.

1.6 QUALITY ASSURANCE

A. Section 01 40 00 – Quality Requirements: Requirements for compliance with reference standards.

B. Surface Burning Characteristics:
   1. Fire Retardant Finishes: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

1.7 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.

B. Applicator: Company specializing in performing work of this section with minimum three years documented experience and approved by manufacturer.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 – Material and Equipment: Product storage and handling requirements.

B. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

C. 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.

D. Paint Materials: Store at minimum ambient temperature of 45 degrees F and 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 temperature ranges required by paint product manufacturer.

B. Do not apply exterior coatings during rain or snow when relative humidity is outside humidity ranges, or moisture content of surfaces exceed those required by 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 candle measured mid-height at substrate surface.

1.10 WARRANTY

A. Section 01 70 00 – Execution and Closeout Requirements: Product warranties and product bonds.

B. Furnish five year manufacturer warranty for paints and coatings.

PART 2 PRODUCTS

2.1 PAINTS AND COATINGS

A. Manufacturers: Paint
   1. Glidden Coatings and Resins
   2. Benjamin Moore and Company
   3. Sherwin Williams Company
   4. Valspar Corporation
   5. Devoe Paint Co.
   6. Fuller-O'Brien.
   7. PPG Architectural Finishes.

2.2 COMPONENTS

A. Coatings: Ready mixed, except field catalyzed coatings. Prepare coatings:
   1. To soft paste consistency, capable of being readily and uniformly dispersed to homogeneous coating.
   2. For good flow and brushing properties.
   3. Capable of drying or curing free of streaks or sags.

B. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve finishes specified; commercial quality.

C. Patching Materials: Latex filler.

D. Fastener Head Cover Materials: Latex filler.

2.3 FINISHES

A. Exterior Paint Systems (EPS-1):
   1. System EPS-1: Exterior Arcylic Latex:
      a. 1st Coat and 2nd Coat:
         1) Ferrous Metal: Exterior latex base emulsion, satin finish. Color as selected by Architect.
   2. Apply to the following scheduled exterior surfaces:
      a. Exterior cement board siding and trim.

B. Interior Paint Systems IPS-1:
   1. Latex Base, Satin Finish:
      a. 1st Coat; (Primer):
         1) Gypsum Drywall: Latex Primer (TT-P-650).
      b. 2nd Coat and 3rd Coat: Latex base emulsion, semi-gloss (TT-P-1511). Color as selected by Architect.
   2. Apply to the following interior surfaces as scheduled:
      a. Gypsum board walls and ceilings except as otherwise noted or scheduled to be unfinished.
      b. Other surfaces and rooms as scheduled on the Room Finish Schedule.

C. Interior Transparent Finish System ITF:
   1. System ITF; Oil Stain and Satin Finish.
      a. 1st Coat: Open grained wood; Paste wood filler.

b. 2nd Coat: Interior Oil Stain.
c. 3rd Coat: Elkyd (Sanding Sealer).
d. 4th and 5th Coat: Elkyd Satin Finish.

2. Apply to the following interior surfaces:
   a. New exposed to view standing and running wood trim.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 40 00 – Quality Requirements: Examination and acceptance of preceding work.

B. Verify surfaces and substrate conditions are ready to receive Work as instructed by product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report conditions capable of affecting proper application.

D. Test shop applied primer for compatibility with subsequent cover materials.

E. Measure moisture content of surfaces using electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
   1. Plaster and Gypsum Wallboard: 12 percent.
   2. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.
   3. Interior Wood: 15 percent, measured in accordance with ASTM D4442.
   4. Exterior Wood: 15 percent, measured in accordance with ASTM D4442.
   5. 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 capable of affecting work of this section. Remove or repair existing coatings exhibiting surface defects.

C. Marks: Seal with shellac those which may bleed through surface finishes.

D. Insulated Coverings: Remove dirt, grease, and oil from canvas and cotton.

E. Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.

F. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.

G. Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.

H. Plaster Surfaces: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.

I. Uncoated Steel and Iron Surfaces: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by [hand] [power tool] wire brushing or sandblasting; clean by washing with solvent. Apply treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Spot prime paint after repairs.

J. Shop Primed Steel Surfaces: 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.

K. Interior Wood Items Scheduled to Receive Paint 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.

3.3 EXISTING WORK

A. Extend existing paint and coatings installations using materials and methods compatible with existing installations and as specified.

3.4 APPLICATION

A. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

B. Apply each coat to uniform appearance. Apply each coat of paint slightly darker than preceding coat unless specified otherwise.

C. Sand metal surfaces lightly between coats to achieve required finish.

D. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

E. Finishing Mechanical and Electrical Equipment:
   1. Refer to Mechanical and Electrical sections for schedule of color coding and identification banding of equipment, duct work, piping, and conduit.
   2. Paint shop primed equipment.
   3. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
   4. Prime and paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, except where items are shop finished.
   5. Paint interior surfaces of air ducts visible through grilles and louvers with one coat of flat black paint to visible surfaces. Paint dampers exposed behind louvers, grilles, to match face panels.
   6. Paint exposed conduit and electrical equipment occurring in finished areas.
   7. Paint both sides and edges of plywood backboards for electrical and telephone equipment before installing equipment.
   8. Color code equipment, piping, conduit, and exposed duct work in accordance with requirements specified in respective mechanical and electrical sections.
   9. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.5 CLEANING

A. Section 01 70 00 – Execution and Close-out Requirements: Cleaning and Waste Management: Final cleaning.

B. Collect waste material which may constitute fire hazard, place in closed metal containers, and remove daily from site.

END OF SECTION