Specifications For

2021 Gogebic Medical Care Facility-
Window Replacement Project

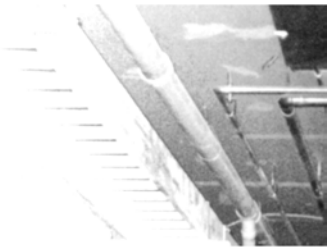
Owner

Gogebic Medical Care Facility
402 North St.
Wakefield, MI 49968

Prepared By

integrated designs inc.
IDI ARCHITECTURE ENGINEERING CONSULTING

1021 West Baraga Avenue
Marquette, MI 49855
906-228-4480 Fax: 906-228-7524



Issued for Construction: May 24, 2021

Project Number

20-954

SECTION 00005
TABLE OF CONTENTS

DIVISION 0 – BIDDING AND CONTRACT REQUIREMENTS

00001	Cover Page
00005	Table of Contents
00010	Pre-Bid Conference
00020	Invitation to Bid
00110	Instructions to Bidders
00310	Bid Form
00400	Supplements to Bid Forms
00500	Bond Form
00600	Form of Agreement
00800	Supplementary Conditions

DIVISION 1 - GENERAL REQUIREMENTS

01010	Summary of the Work
01012	Alternates
01015	Contractor's Use of the Premises
01027	Applications for Payment
01045	Cutting and Patching
01120	Alteration Project Procedures
01153	Change Order Procedure
01200	Project Meetings
01351	Electronic Submittals
01370	Schedule of Values
01400	Quality Control
01500	Temporary Facilities and Controls
01600	Product Requirements
01630	Substitutions, Product Acceptance
01700	Contract Close-Out
01710	Cleaning
01720	Project Record Documents
01740	Warranties and Bonds

DIVISION 2 – EXISTING CONDITIONS

024119	Selective Demolition

DIVISION 3 – CONCRETE

DIVISION 4 – MASONRY

DIVISION 5 – METALS

DIVISION 6 – WOOD & PLASTICS

061000	Rough Carpentry
062023	Interior Finish Carpentry
066100	Sani-Surface Hygienic Wall Cladding

DIVISION 7 – THERMAL & MOISTURE PROTECTION

076200 Sheet Metal Flashing and Trim
078413 Penetration Firestopping
079200 Joint Sealants

DIVISION 8 – DOORS & WINDOWS

085413 Fiberglass Double Hung Windows
088000 Glazing

DIVISION 9 – FINISHES

092216 Non-Structural Metal Framing
092900 Gypsum Board
099123 Interior Painting

DIVISION 10 – SPECIALTIES

102623 Palladium 3D Wall Panel System

DIVISION 11– EQUIPMENT – NOT USED

DIVISION 12 – FURNISHINGS

123661 Solid Surface Sills

NO DIVISION USED UNTIL DIVISION 22

DIVISION 22 – PLUMBING – NOT USED

DIVISION 23 – MECHANICAL – NOT USED

DIVISION 26 – ELECTRICAL – NOT USED

DIVISION 27 – COMMUNICATIONS – NOT USED

END OF SECTION

SECTION 00010
PRE-BID CONFERENCE

A non-mandatory pre-bid conference meeting will be held on Wednesday **June 2, 2021 @ 10:00 a.m.** CST at the **Gogebic Medical Care Facility, 402 North St. Wakefield, MI 49968. Attendees may park in the lot along the North side of the building.**

All attendees wishing to enter the building for the walk-thru, will be screened prior to entrance. A facility provided mask must also be worn and must cover the nose and mouth.

Non-Vaccinated persons are required to have a Rapid COVID-19 test at the door prior to entrance. Those in need of a test, shall arrive at the facility, at least 15 minutes prior to the start of the pre-bid conference.

All contractors will be responsible for reviewing the existing site conditions prior to bidding. Each bidder shall fully inform themself prior to bidding as to the existing conditions and limitations under which the work is to be performed, and shall include in their bid a sum to cover the cost of items necessary to perform the work as set forth in the contract documents. No allowance will be made to a bidder because of lack of such examination. The submission of a bid will be considered as conclusive evidence that the bidder has made such examination.

END OF SECTION

SECTION 00020
INVITATION TO BID

Notice is given hereby that **Gogebic Medical Care Facility** will accept bids from qualified contractors for renovations to:

Gogebic Medical Care Facility, 402 North St. Wakefield, MI 49968

according to Drawings and Specifications prepared by:

Integrated Designs Inc.
1021 West Baraga Avenue
Marquette, MI 49855

This work includes, but is not limited to:

Removal and replacement of existing window assemblies, including but not limited to selective demolition of windows, sills, extension jambs, damaged EIFS etc. Also, includes repair & refinishing of EIFS surrounding the window assemblies and in other areas as noted, along with other misc. items as identified in the construction documents.

A non-mandatory pre-bid conference meeting will be held on **Wednesday June 2, 2021 @ 10:00 a.m. CST** at the **Gogebic Medical Care Facility, 402 North St. Wakefield, MI 49968. Attendees may park in the lot along the North side of the building.**

All attendees wishing to enter the building for the walk-thru, will be screened prior to entrance. A facility provided mask must also be worn and must cover the nose and mouth. Non-Vaccinated persons are required to have a Rapid COVID-19 test at the door prior to entrance. Those in need of a test, shall arrive at the facility, at least 15 minutes prior to the start of the pre-bid conference.

Sealed bids will be received at the administration office of the **Gogebic Medical Care Facility, 402 North St. Wakefield, Mi 49968**, until **2:00 p.m., Local Time, June 8, 2021**. Bids will be privately opened. Bids received after the date and time specified will be returned to the bidder, unopened.

Bids will be taken on a lump sum basis as defined on the Bid Form. Each facility will be separate bid, and may be awarded as such. Bids shall be accompanied by bid security equal to 5% of the bid amount.

100% Surety Bonds for performance and payment of labor and materials are required. Bonds must be submitted on the forms provided. No alteration(s) to the form will be accepted.

Bid Documents may be examined at the following locations:

Integrated Designs Inc. 1021 West Baraga Ave Marquette, MI 49855	Green Bay Builders Exchange 1048 Glory RD – Suite G Green Bay, WI 54304-5608	Iron Mountain – Kingsford BX 600 Stephenson AVE Iron Mountain, MI 49801
Marquette Builders Exchange 1229 West Washington ST Marquette, MI 49855	Fox Valley Builders Exchange 1612 North Bullard RD Appleton, WI 54911-4212	Delta County Builders Exchange 230 Ludington St. Escanaba, MI 49829

Bid Documents will be available after **12:00 P.M. May 24, 2021** at the IDI Online Plan Room. Log on to www.idiplanspace.com, where you can view and order plans for this project. If you have any problems logging on, viewing, or ordering plans please call Blue Print Services at 1-800-640-4539.

The Owner reserves the right to reject any or all bids and to waive irregularity in the bidding or the bidding process and accept the bid that is most advantageous to the Owner.

Dated: 05.24.2021 By: Gogebic Medical Care Facility

END OF SECTION

SECTION 00110
INSTRUCTIONS TO BIDDERS

PART 1 GENERAL

1.1 PROCUREMENT OF DOCUMENTS

A. The Drawings and Specifications are on file in the following plan rooms:

Marquette Builders Exchange
1229 West Washington ST
Marquette, MI 49855

Iron Mountain – Kingsford BX
600 Stephenson AVE
Iron Mountain, MI 49801

Green Bay Builders Exchange
1048 Glory RD – Suite G
Green Bay, WI 54304-5608

Builders Exchange of WI – Fox Valley Plan Room
W2518 Co. Rd. JJ
Appleton, WI 54913

Delta County Builders Exchange
230 Ludington ST
Escanaba, MI 49829

IDI Online Plan Room. Log on to www.idiplanspace.com, where you can view and order plans for this project. If you have any problems logging on, viewing, or ordering plans please call Blue Print Services at 1-800-640-4539.

PART 2 MATERIALS – NOT USED

PART 3 EXECUTION

3.1 EXAMINATION OF DOCUMENTS AND SITE

A. Bidders shall carefully examine the Contract Documents and the construction site to obtain first-hand knowledge of existing conditions. Contractor will not be given extra payments for conditions that can be determined by visually examining the site and Contract Documents.

3.2 QUESTIONS, INTERPRETATIONS, AND ADDENDA

A. Should any bidder find discrepancies between the Drawings and Specifications, or should he be in doubt as to their exact meaning, he should notify the Architect/Engineer. The Architect/Engineer then, at his option, may then issue Addenda clarifying same. The Owner will not be responsible for oral instructions or for the Contractor's misinterpretations of Drawings and Specifications.

B. The Architect/Engineer reserves the right to issue Addenda at any time prior to the bid opening. All such addenda shall become, upon issuance, an inseparable part of the Contract Documents. Each bidder shall incorporate within his bid proposal all costs for items listed in the Addenda; and shall acknowledge receipt and the identifying number of each Addendum on the Bid Proposal Form and on the outside of the sealed bid envelope.

3.3 BID SECURITY, BONDS, AND INSURANCE

A. Bid Security, Performance, and Payment Bonds will be required on this project.

1. A Bid Bond is required in the amount of 5% of total Bid, minimum.
2. Performance Bond and Payment Bond Requirements are described in the General and Supplementary Conditions, 100% of total Bid, minimum. Cost for bonds shall be included in the base bid amount.
3. Insurance Requirements are described in the General and Supplementary Conditions.

3.4 MODIFICATION AND WITHDRAWAL

A. Proposals may be withdrawn and/or changed any time prior to the bid opening. Proposals may not be withdrawn or changed after the bid opening time; and shall be deemed a firm offer continuing for ninety (90) calendar days. Bids received after the time and date of the bid opening will be returned unopened to the bidder.

3.5 SUBSTITUTION OF SPECIFIED PRODUCTS

A. Coordinate substitution Requirements with Section 01630

3.6 CODES, ORDINANCES, REGULATIONS, ETC.

A. All labor and materials shall be furnished and installed in strict accordance with the latest applicable codes, ordinances, and regulations of any governing body that has jurisdiction over this project.
B. If the quality of the labor and materials required by the Drawings and Specifications exceeds the requirements of the applicable codes, ordinances, and regulations, the Drawings and Specifications shall take precedence.
C. If the quality of the labor and materials required by the applicable codes, ordinances, and regulations exceed the requirements of the Drawings and Specifications, the applicable codes, ordinances, regulations, etc., shall take precedence.

3.7 SUB-CONTRACTOR AND MATERIAL SUPPLIERS

A. The successful Bidder shall submit to the Owner, a complete list of all sub-contractors, suppliers, and all substitutions he proposes to engage in the work.
B. The successful bidder will be required to submit the list of sub-contractors for owner approval prior to execution of a contract.

3.8 AWARD OF CONTRACT

A. The material proposed to be used for the completion of work, and the competency, solvency, and responsibility of the bidders will receive due consideration before the awarding of this contract. In the reception of proposals for the work, the Owner incurs no obligation to accept the lowest or any proposal submitted. The right to accept or reject any and all bids is reserved by the Owner. The Owner reserves the right to require testimonial or legal documents pertaining to the solvency of a Contractor.

3.9 CONTRACTS WITH SUBCONTRACTORS

A. All contracts made by the successful Bidder with Subcontractors shall be covered by the terms and conditions of the Contract. The successful Bidder shall see to it that his Sub-contractors are fully informed in regard to these terms and conditions.

3.10 CHANGES IN THE WORK

A. The Bidder shall state in the space provided in the Proposal Form the changes, expressed as a percentage of the cost, for changes in the work, when done by his own organization and when done by Subcontractors under his Contract. Fees shall include all charges for supervision, on site superintendents, overhead and profit. Charges for taxes, social security payments and insurance shall be computed separately and shall not be subject to percentage fee.

3.11 PREVAILING WAGES

A. Davis-Bacon Act/Prevailing Wage rates are not required on this project.

END OF SECTION

SECTION 00310
BID FORM

TO: Gogebic Medical Care Facility
hereinafter called "Owner"

PROJECT: Gogebic Medical Care Facility: Window Replacement Project

DATE:

SUBMITTED BY: (hereinafter called "Bidder")

(full address)

(telephone #) (FAX #)

A. BASE BID

Having examined the place of the work and all matters referred to in the Instructions to Bidders and the Contract Documents prepared by Integrated Designs, Inc., Architect/Engineer for the above-mentioned project, we, the undersigned, hereby offer to enter into a contract to perform the work for the lump sum price of:

_____ Dollars ($_____) in lawful money of the United States of America. Lump sum includes all applicable taxes. (Bidder insert both written and numerical format)

B. ALTERNATES

N/A

_____ Dollars ($_____) in lawful money of the United States of America. Lump sum includes all applicable taxes. (Bidder insert both written and numerical format)

C. UNIT PRICES

UNIT COST PRICE #1 (Provide unit cost price per **Square Foot** for areas where complete existing EIFS assembly is to be replaced upon discovery of disintegration or disrepair during demolition. Work to be coordinated during construction.)

_____ Dollars ($_____) in lawful money of the United States of America. (Bidder insert both written and numerical format)

D. ACCEPTANCE

This offer shall be open to acceptance and is irrevocable for Thirty (30) days from the Bid date. If this Bid is accepted by the Owner within the time period stated above, we will:

Execute the agreement within ten (10) days of receipt of Notice of Award.

Furnish the required bonds if required within ten (10) days of receipt of Notice of Award in the form described in the Project Manual.

Commence work immediately upon receipt of executed agreement.

If this Bid is accepted within the time stated, and we fail to commence the work or 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 the 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.

D. CONTRACT TIME

If this Bid is accepted, we will achieve substantial completion by:

All work shall be substantially complete on or before September 30, 2021. Work is expected to begin as soon as the contract is awarded.

G. CHANGES TO THE WORK

For any additional work performed by subcontractors, the undersigned agrees to add to the subcontractor's sum a maximum fee of _____ percent (_____%), which fee includes all the charges of the undersigned for overhead and profit and general conditions.

For any additional work performed by the Contractor, the undersigned agrees that the charges shall be the actual cost of all labor and materials (less any discounts) plus a maximum fee of _____ percent (_____%) for overhead and profit. The undersigned agrees that the labor rate includes all cost of insurance, taxes, bond, payroll taxes, and labor multiplier (general conditions).

H. ADDENDA

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

Addendum #___ Dated:

Addendum #___ Dated:

Addendum #___ Dated:

Addendum #___ Dated:

Addendum #___ Dated:

I. APPENDICES

The following Appendices are hereby submitted concurrent with the Bid:

Appendix A: Subcontractors
Appendix B: Voluntary Alternates

J. BID FORM SIGNATURE(S)

The Corporate Seal of:

(Bidder, please print the full name of your Proprietorship, Partnership or Corporation)

was hereunto affixed in the presence of:

_____
(Authorized signing officer) (Title)

_____
(Authorized signing officer) (Title)

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 SECTION

SECTION 00400
SUPPLEMENTS TO BID FORMS

TO: **Gogebic Medical Care Facility**

PROJECT: **Gogebic Medical Care Facility –2021 Window Replacement Project**

SUBMITTED
BY: (Full name)

(Full address)

In accordance with Document 00100 - Instructions to Bidders and Document 00310 - Bid Form, we include the Supplements to Bid Form Appendices listed below. The information provided shall be considered an integral part of the Bid Form.

These Appendices are as follows:

Appendix A - Subcontractors: Include the names of primary subcontractors and the portions of the work they will perform.

Appendix B - Voluntary Alternates.

SUPPLEMENTS TO BID FORM SIGNATURE(S)

The Corporate Seal of:
(Bidder, please print the full name of your Proprietorship, Partnership or Corporation)

was hereunto affixed in the presence of:

_____
(Authorized signing officer) (Title)

_____
(Authorized signing officer) (Title)

APPENDIX A

Herewith is the list of subcontractors referenced in the Bid submitted by:

(Bidder)

To: **Gogebic Medical Care Facility**

dated:_____, 2021 which is an integral part of the Bid form.

The following work will be performed (or provided) by subcontractors and coordinated by us: (Use a separate sheet if necessary)
Prime contractors indicate your respective subcontractors

SECTION OF WORK	SUBCONTRACTOR	PROJECT
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Failure to identify sub contractors at the time of bid may be cause for rejection of the bid.

APPENDIX B

The following is a list of Voluntary Alternates referenced in the Bid submitted by:

_____ to **Gogebic Medical Care Facility**
(Bidder)

dated _____, 2021 which is an integral part of the Bid.

The Contract Sum proposed by the undersigned on the Bid Form is for the work as shown on the Drawings, described in the Specifications and otherwise defined in the Contract Documents. However, the undersigned proposes the following Voluntary Alternates for the Owner's consideration. Should the Owner accept any or all of the proposed substitutions, the bidders proposed Contract sum will be reduced by the amount shown.

Specified Product or Material:	Drawing Number or Spec Section:	Proposed Substitution:	Proposed Reduction in Contract Sum:
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

END OF SECTION

SECTION 00500
BOND FORM

PART 1 GENERAL

1.1 BOND FORM

A. AIA Document A-312 Performance and Payment Bond Forms are included by reference herein. Copies of these documents may be obtained from the office of the Architect.

B. Standard forms issued by surety companies are acceptable.

END OF SECTION

SECTION 00600
FORM OF AGREEMENT

PART 1 GENERAL

1.1 FORM OF AGREEMENT

A. AIA Document A-101 Standard Form of Agreement between Owner and Contractor where the basis of payment is a Stipulated Sum, 2017 edition, is included by reference herein.

B. AIA Document A-201 General Conditions of the Contract for Construction, 2017 edition, is included by reference herein.

C. Copies of these documents may be obtained from the office of the Architect upon request.

END OF SECTION

SECTION 00800
SUPPLEMENTARY CONDITIONS

1. The "General Conditions of the Contract for Construction," AIA Document A201, 2017, Articles 1 through 14 inclusive, is part of this Contract.
2. The following supplements modify, delete from, and/or add to the General Conditions.

   A. All Articles, or portions thereof, which are not specifically modified, deleted, or superseded hereby, remain in full effect.
   B. The General Conditions also may be supplemented elsewhere in the Contract Documents by provisions located in, but not necessarily limited to, Division 1 of the Specifications.

3. After subparagraph 1.1.7, add:

   1.1.8 MISCELLANEOUS DEFINITIONS

   .1 The term "product" includes materials, systems, and equipment.
   .2 The term "provide" includes furnishing and installing a product, complete in place, tested and approved.
   .3 The term "building code," and the term "code," refer to regulations of governmental agencies having jurisdiction.
   .4 The terms "approved," "required," and "as directed" refer to and indicate the work or materials that may be approved, required, or directed by the Architect acting as the agent of the Owner.
   .5 The term "similar" means in its general sense and not necessarily identical.
   .6 The terms "shown," "indicated," "detailed," "noted," "scheduled," and terms of similar import, refer to requirements contained in the Contract Documents.
   .7 The term "Architect/Engineer" means the Architect/Engineer himself or his assigned representative.

4. Paragraph 1.2 Correlation, and Intent; Add the following to Subparagraph 1.2.

   Subparagraph 1.2.3

   Wherever the quality of labor and materials required by the drawings and specification exceeds the requirements of the drawings and specifications, the applicable codes, ordinances, regulations, etc. shall take precedence.

5. Subparagraph 3.3.4 - Add the following:

   The Contractor shall, in the performance of the Contract, comply with and give all stipulations and representations required by all Federal, State, County, and Local Ordinances and Regulations, and shall require such compliance, stipulations, and representations by all other persons with whom he shall enter into Contract Documents and any additional work necessary to meet Code requirements shall be made by the Contractor without extra cost to the Owner.

   Subparagraph 3.10 - Contractor's Construction Schedules; Substitute the following for Subparagraph 3.10.1

   The Contractor, immediately after being awarded the Contract, shall prepare and submit for the Owner's and Architect's approval, an estimated progress schedule for the work. The progress schedule shall be related to the entire Project to the extent required by the Contract Documents. This schedule shall indicate the dates for the starting and completion of the various phases of construction and

shall be revised as required by the conditions of the Work, subject to the Owner's approval.

Subparagraph 3.10.2 - Add the following:

In planning his construction schedule within the agreed contract time, it shall be assumed that the Contractor has anticipated the amount of adverse weather conditions normal to the site of the Work for the season or seasons of the year involved. Only those weather delays attributable to other than normal weather conditions will be considered by the Architect/Engineer.

Subparagraph 3.10.3 - Add the following:

When the contract time has been extended, as provided under this Paragraph, such extension of time shall not be considered as justifying extra compensation to the Contractor for administrative costs or other such reasons.

Add the following subarticles:

Subparagraph 3.10.4

Scheduling of construction activities shall be submitted to the Architect by the General Contractor to establish a reasonable sequence of work and contract duration. Its purpose is to define the sequence and duration of activities, not the scope of the work, and its existence does not in any way relieve the Contractors of the responsibility of meeting other requirements of the Contract Documents.

Subparagraph 3.10.5

The schedule shall be based on a precedence network for development of a critical path, providing a comprehensive planning tool to permit completion of the Project in the allotted time. The activity sequence and durations describe a reasonable schedule for the work. Since other sequences are possible, the Contractor will, immediately after the award of the Contract or the issuance of a Letter of Intent, meet with the Owner and Architect to expand the detail of the Schedule and to allow the Contractor an opportunity to propose improvements and modifications to the established sequence and durations which will not alter the milestone dates or the duration of the Project itself. No extension of time for completion will be granted to the Contractor when it is evident that he could have avoided the need of same by the exercise of reasonable foresight.

Subparagraph 3.10.6

Periodically during construction, the Contractor will meet with the Owner and the Architect for the purpose of obtaining current and accurate progress data. This information will be used to monitor the schedule and to further revise activity sequences and durations when, in the opinion of the Architect, a need for doing so has been established. After such revisions, the Contractor shall submit a revised schedule indicating any changes.

6. Paragraph 3.14 - Cutting and Patching; Add the following subarticles:

Subparagraph 3.14.3

The Contractor and Subcontractors shall be responsible for all cutting and patching necessary for his work unless herein specifically stated to the contrary.

Subparagraph 3.14.4

Any cost caused by defective or ill-timed work shall be borne by the party responsible.

Subparagraph 3.14.5

Each Subcontractor shall do all fitting of his own work as required to make its several components fit together or to receive the work of other Contractors. Holes cut in exterior walls or roofs for installation of mechanical or electrical equipment shall be waterproofed by the Contractor responsible for such installation.

Subparagraph 3.14.6

Permission to patch any areas of work does not imply a waiver of the Architect's right to require complete removal and replacement in said areas and of said items if, in the Architect's opinion, appearance of the work is not according to the Contract Documents.

Subparagraph 3.14.7

Subcontractors shall place sleeves and inserts correctly for pipes, conduits, and similar items in forms, walls, partitions, and floors. All said work shall be done in cooperation with Concrete Foundation, Interior Concrete, and Mason Contractors. All items shall be placed in ample time so as not to delay concrete or masonry operations. Do not place sleeves so they pass vertically through beams, girders, trusses, and similar construction, unless locations are approved by the Architect.

Subparagraph 3.14.8

The Contractor shall see that sleeves are kept in their proper positions and not displaced by placing of concrete or other construction work. Locations of chases are indicated in the mechanical and electrical drawings. The Contractor shall be responsible for the inclusion of these items in the work and shall advise all Subcontractors and the Architect of all changes.

7. Paragraph 3.15 - Cleaning Up; Add the following subparagraphs:

Subparagraph 3.15.3

It shall be the duty of each separate Contractor to keep the premises free of accumulations of surplus materials and rubbish caused by his operations. Debris shall be removed immediately by the responsible Contractor.

Subparagraph 3.15.4

Each Friday afternoon, and more often if necessary, the General Contractor shall provide for an overall clean-up of the entire site, including removal from the site of all unidentified rubbish and debris and shall broom clean all appropriate surfaces. All Contractors and their subcontractors shall remove their rubbish and debris from the building and the site promptly upon its accumulation and in no event later than the regular Friday of general clean-up.

Subparagraph 3.15.5

Burning of rubbish on site will not be permitted. Rubbish shall not be thrown through from the building, except into approved rubbish containers or dumpsters. Dust control measures, chutes and clean up of scattered debris are the responsibilities of the general contractor.

Subparagraph 3.15.6

The Contractor shall keep the site free from accumulations of his rubbish and waste materials at all times and shall see that subcontractors remove and dispose of their rubbish. Arrangements for removal and disposition of the rubbish will be made by each Contractors concerned at no cost to the Owner.

Subparagraph 3.15.7

Should any Contractor or subcontractor allow rubbish or waste material to accumulate on any portion of the site or in any portion of the building to such extent that accumulation constitutes a hazard or obstructs the prosecution of the work, the Owner may, if the Contractor or subcontractor at fault fails to remove such rubbish or waste material within three days after written notice to clean up the accumulation, engage proper labor or services of another Contractor to make necessary removal and disposition and to charge cost against monies due the Contractor or subcontractor at fault.

8. Article 4 - Administration of the Contract - Paragraph 4.1 - Architect; Add the following to subparagraph 4.1.1

Integrated Designs, Inc.
Architect/Engineer
1021 West Baraga Avenue 906/228-4480
Marquette, Michigan 49855 (FAX) 906/228-7524

The word "Engineer" shall be synonymous with the word "Architect" hereafter.

9. At the end of Subparagraph 4.5.2, add:

Subparagraph 4.5.2.1

After appointment of the arbitrator or arbitrators, the parties to the arbitration shall have the right to take depositions and to obtain discovery regarding the subject matter of the arbitration and, to that end, to use and exercise all of the same rights, remedies, and procedures, and be subject to all of the same duties, liabilities, and obligations in the arbitration with respect to the subject matter thereof, as if the matter of the arbitration were pending in a civil action before a Superior Court of the State.

10. Article 9 - Payments and Completion. Amend Subparagraph 9.3.1 to read as follows:

Subparagraph 9.3.1

At least fourteen (14) days before each progress payment falls due, the Contractor shall submit to the Architect an itemized Application for Certificate for Payment, AIA Document G702, supported by such data substantiating the Contractor's right to payment as the Owner, and Architect may require.

Add the following subarticle:

Subparagraph 9.5.3

Until the work has been evaluated as substantially complete by the Owner and Architect, the Owner shall pay no less than 90% due the Contractor on account of progress payments for completed work. Upon presentation to the Owner by the Contractor, a Consent of Surety to Final Payment (A.I.A. Document G707) and Certificate of Substantial Completion (A.I.A. Document G704), the retainage shall be released in full.

Add the following Paragraph: 9.10.5

Each Contractor on his own behalf and on behalf of all his subcontractors and suppliers of material and labor (insofar as he is able to contract) shall hereby expressly waive the benefits of the Mechanics Lien Laws of the State of Michigan. The Contractor agrees to procure, from each of his subcontractors and suppliers of labor and material, a release of any claim to a Mechanics Lien of Laws of the State of Michigan. In addition, he agrees to furnish the Owner each and every document, affidavit, or assurance which, in the opinion of the Owner, is necessary or appropriate to assure the Owner immunity from Mechanics Liens. Liens on account of anything done by this Contractor, or those acting under him or as his subcontractors in carrying out the terms of this Contract and any and all work orders for additions thereto, all as a condition of payments by he Owner on account of this Contract or on account of any of said work ordered for additions thereto. Payments made by the Owner, without requiring strict compliance with the terms of this paragraph shall not be construed as a waiver by the Owner of the right to insist upon such compliance as a condition of later payments.

11. Article 10 - Protection of Persons and Property. Add to Article 10.2 - Safety of Persons and Property as follows:

At the end of subparagraph 10.2.6, add:

It shall be the sole responsibility of the Contractor's safety representative to do the inspection and protection of the construction workers and third parties and property against negligent construction techniques and to ensure the safety of the work site, and hold the Owner, and the Architect/Engineer harmless from the methods used and the consequences of construction.

Subparagraph 10.2.8

At the start of construction, adequate barricades and lighting to protect the building area, storage areas, driveways, parking areas, property lines adjoining neighbor’s properties are required.

Subparagraph 10.2.8.1

Once construction of the structures is started, the on-site storage of materials becomes significant. The Contractors shall provide whatever surveillance service is needed to protect the structures, stored materials, the workers, and the public.

Subparagraph 10.2.8.2

All temporary provisions shall be removed after completion of the Project, or when so directed by the Owner or the Architect.

12. Add the following to Article 11

Subparagraph 11.1.1.4

Claims made for damages or injury or destruction of tangible property, including loss of use resulting therefrom

Subparagraph 11.1.1.6

Claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle or piece of equipment.

Substitute the following for subparagraph 11.1.2:

The Insurance required by subparagraph 11.1.1 shall be written for not less than the following specified limits of liability or the limits required by law, whichever is greater.

Subparagraph 11.1.2.1 - Workmen's Compensation

A. State	Statutory
B. Applicable Federal (e.g., Longshoremen's, HUD)	Statutory
C. Employer's Liability	$100,000

Subparagraph 11.1.2.2 - Comprehensive General Liability

Including Premise, Operation, Independent Contractor's Protective, Products and Completed Operations, Broad Form Property Damage.

A. Bodily Injury

1. Each Occurrence	$1,000,000
2. Annual Aggregate	$1,000,000

B. Property Damage

1. Each Occurrence	$1,000,000
2. Annual Aggregate	$1,000,000

C. Builders Risk

1. Owner shall carry a builder’s risk policy equal to the value of the contract for the duration of the project. Contractor required to confirm this is in place prior to beginning any work.

Subparagraph 11.1.2.3 - Personal Injury

A. Annual Aggregate	$1,000,000

Subparagraph 11.1.2.4 - Comprehensive Automobile Liability

A. Bodily Injury

1. Each Person	$1,000,000
2. Each Occurrence	$1,000,000

B. Property Damage

1. Each Occurrence $1,000,000

Subparagraph 11.1.2.5 - Umbrella Liability $1,000,000

Subparagraph 11.1.2.6 - Property Damage Liability Insurance shall be in coverage for the following hazards: X,C,U, (explosion, collapse, underground) building, property, fire, and theft.

Subparagraph 11.1.2.7 - Independent Contractors and/or Subcontractors: Same limits as noted above.

Add to 11.1 the following subparagraphs:

Subparagraph 11.1.4

Furnish one copy of Certificates herein required for each copy of Agreements; specifically set forth evidence of all coverage required by 11.1.2 and 11.1.3. The form of the above Certificate shall be standard insurance certificate of coverage. Furnish to the Owner copies of any endorsements that are subsequently issued amending coverage or limits.

Subparagraph 11.1.5

The Contractor and all subcontractors in connection with the above-mentioned Workmen's Compensation and Occupational Disease Insurance, shall furnish to the Owner duly executed forms as prescribed by the Michigan Industrial Commission showing that such insurance is in full force and effect.

Subparagraph 11.1.6

Certificates of Insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work. These Certificates shall contain a provision that coverage afforded under the policies will not be cancelled until at least thirty days prior written notice has been given to the Owner.

Substitute the following for Subparagraph 11.5.1

The Contractors shall at the Owner’s option furnish a Performance Bond in an amount equal to One Hundred Percent (100%) of the Contract and, also a Labor and Material Payment Bond in the amount of not less than One Hundred Percent (100%) of the Contract Sum or in a penal sum not less than that prescribed by State, Federal, Territorial, or Local Law, as security for payment of persons performing the Labor on the Project under this Contract and furnishing material in connection with this Contract. The Performance and Material Payment Bond may be in one or separate instruments and shall be delivered to the Owner not later than the date of execution of the Contract.

END OF SECTION

SECTION 01010
SUMMARY OF THE WORK

PART 1 GENERAL

1.1 THE WORK

A. The project includes all material, labor, tools, equipment, field engineering, and transportation necessary to complete all work as identified in the Drawings and further defined in these Specifications. This includes all items not specifically mentioned, but incidental to the work to provide a complete and operational product.

B. This work includes, but is not limited to:

Removal and replacement of existing window assemblies, including but not limited to selective demolition of windows, sills, extension jambs, damaged EIFS etc. Also, includes repair and refinishing of existing EIFS surrounding the window assemblies and in other areas as noted, along with other miscellaneous items as identified in the construction documents.

During construction, 2 (two) resident rooms minimum, will be provided at one time for demolition and installation of the new window assemblies. Interior work will need to be completed prior to turnover to another area, so residents can be shifted to other rooms as required.

NOTE: WINDOW TYPES A, B & E at the South side of the building, are part of the facilities kitchen and food preparation areas. These assemblies will need to be replaced after 7:00PM and will need to be completed by 4:00AM for use the following day.

END OF SECTION

SECTION 01012
ALTERNATES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Description of bid alternates
B. Submission procedures.
C. Documentation of changes to contract sum/price and contract time.

1.2 RELATED SECTIONS

A. Section 00600 - Form of Agreement: Incorporating monetary value of accepted Alternates.
B. Section 00100 - Instructions to Bidders; Section 00400 - Supplements to Bid Forms; Appendix B - Listing of Voluntary Alternates.
C. Section 01300 - Submittals: 1.04 Substitutions: approval of substitutions

1.3 REQUIREMENTS

A. Submit requested Alternate Bid costs where identified.
B. Submit Voluntary Alternates with full description of the proposed Alternate and the effect on adjacent or related components.
C. Voluntary alternates submitted with the Bid will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in the Owner-Contractor Agreement.
D. Coordinate related work and modify surrounding work to integrate the work of each Alternate.

1.4 SELECTION AND AWARD OF ALTERNATIVES

A. Indicate variation of Bid Price for Alternates described below and listed in Document 00400 - Supplements to Bid Form. This form requests a "difference" in Bid Price by adding to or deducting from the bid price for requested bid alternates and voluntary alternates.
B. Bids will be initially evaluated on base bid amount. If Base Bids are within the Owner's project budget, consideration will be given to the lowest combination of Alternates and Base Bid and Alternates, subject to the Owner's right to accept or reject any or all bids or alternates and to accept any bid, alternate, or combination thereof, which is deemed to be in the best interest of the Owner.

1.5 ALTERNATE BID ITEMS

A. N/A

END OF SECTION

SECTION 01015
CONTRACTOR'S USE OF THE PREMISES

PART 1 GENERAL

1.1 DESCRIPTION

A. Work included: This Section applies to situations in which the Contractor or his representatives including, but not necessarily limited to, suppliers, subcontractors, employees, and field engineers, enter upon the Owner's property.

B. Related Work:

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division I of these Specifications.

1.2 QUALITY ASSURANCE

A. Promptly upon award of the Contract, notify all pertinent personnel regarding requirements of this Section.

B. Require that all personnel who will enter upon the Owner's property certify their awareness of and familiarity with the requirements of this Section.

1.3 TRANSPORTATION FACILITIES

A. Truck and equipment access:

1. To avoid traffic conflict with vehicles of the staff and others using the building, and to avoid overloading of streets and driveways elsewhere on the Owner's property, limit the access of trucks and equipment to designated area coordinated with the Owner.
2. Provide adequate protection for curbs and sidewalks over which trucks and equipment pass to reach the job site.

1.4 PERFORMANCE

A. The Contractor and his Sub-contractors shall conduct their operations in a manner so as to not cause any undue inconvenience or hazard to occupants and clients of the remainder of the site. Areas other than that of the project limits shall not be used for storage of material and shall be kept clean at all times at the Contractor's expense. Any damage to those areas shall be repaired or replaced at Contractor's expense. The Architect/Engineer shall make the determination as to the acceptability of the proposed repair or replacement.

1.5 SECURITY

A. Restrict the access of all persons entering upon the Owner's property in connection with the Work to the actual site of the Work.

END OF SECTION

SECTION 01027
APPLICATIONS FOR PAYMENT

PART 1 GENERAL

1.1 DESCRIPTION

A. Work included: Comply with procedures described in this Section when applying for progress payment and final payment under the Contract.
B. Related work:

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
2. The contract Sum and the schedule for payments are described in the form of agreement.
3. Payments upon Substantial Completion and Completion of the Work are described in the General Conditions and in Section 01700 of these Specifications.

1.2 QUALITY ASSURANCE

A. Prior to start of construction, secure the owners approval of the schedule of values required to be submitted in accordance with the General Conditions, and further described in these Specifications.
B. During progress of the Work, modify the schedule of values as approved by the owner to reflect changes in the Contract Sum due to Change Orders or other modifications of the Contract.
C. Base requests for payment on the approved schedule of values.

1.3 SUBMITTALS

A. Formal submittal: Unless otherwise directed by the owner:

1. Make formal submittal of request for payment by filling in the agreed data, by typewriter or neat lettering in ink, on AIA Document G702, "Application and Certificate for Payment," plus continuation sheet or sheets G703.
2. Sign and notarize the Application and Certificate for Payment.
3. Submit the original of the Application and Certificate for Payment,
4. The owner will review the formal submittal and when approved, will sign the Application Certificate for Payment, and will distribute.

   a. One copy to Contractor;
   b. One copy to Owner;

5. The Owner will disburse directly to the Contractor within 30 days in accordance with the agreement between Owner and Contractor.

END OF SECTION

SECTION 01045
CUTTING AND PATCHING

PART 1 GENERAL

1.1 DESCRIPTION

A. Work included: This Section establishes general requirements pertaining to cutting, fitting, and patching of the Work required to:

1. Make the several parts fit properly;
2. Uncover work to provide for installing, inspection, or both, of ill-timed work;
3. Remove and replace work not conforming to requirements of the Contract Documents; and
4. Remove and replace defective work.

B. Related work:

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Technical Sections of these Specifications.
2. In addition to other requirements specified, upon the Architect/Engineer's request uncover work to provide for inspection by the Architect/Engineer of covered work, and remove samples of installed materials for testing.
3. Do not cut or alter work performed under separate contracts without the Architect/Engineers written permission.

1.2 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.3 SUBMITTALS

A. Request for Architect/Engineer's consent:

1. Prior to cutting which effects structural safety, submit written request to the Architect/Engineer for permission to proceed with cutting.
2. Should conditions of the Work, or schedule, indicate a required change of materials or methods for cutting and patching, so notify the Architect/Engineer and secure his written permission and the required Change Order prior to proceeding.

B. Notices to the Architect/Engineer:

1. Prior to cutting and patching performed pursuant to the Architect/Engineer's instructions, submit cost estimate to the Architect/Engineer. Secure the Architect/Engineer's approval of cost estimates and type of reimbursement before proceeding with cutting and patching.
2. Submit written notice to the Architect/Engineer designating the time the Work will be uncovered, to provide for the Architect/Engineer's observation.
3. Cutting and patching is required under some of the Sections of these Documents. The cost for that work is to be included in the base bid.

PART 2 PRODUCTS

2.1 MATERIALS

A. For replacement of items removed, use materials complying with pertinent Sections of these Specifications. When no section covers the replacement of items removed, use materials identical to those removed.

2.2 PAYMENT FOR COSTS

A. The Owner will reimburse the Contractor for cutting and patching performed pursuant to any written Change Order, after claim for such reimbursement is submitted by the Contractor, and approved by the Architect/Engineer and Owner. Perform other cutting and patching needed to comply with the Contract Documents at no additional cost to the Owner.

PART 3 EXECUTION

3.1 SURFACE CONDITIONS

A. Inspection:

1. Inspect existing conditions, including elements subject to movement or damage during cutting, and patching.
2. After uncovering the work, inspect conditions affecting installation of new work.

B. Discrepancies:

1. If uncovered conditions are not as anticipated, immediately notify the Architect/Engineer and/or owner and secure needed directions.
2. Do not proceed until unsatisfactory conditions are corrected.

3.2 PREPARATION PRIOR TO CUTTING

A. Provide required protection including, but not necessarily limited to, shoring, bracing, and support to maintain structural integrity of the Work.

3.3 PERFORMANCE

A. Perform work required under pertinent other Sections of these Specifications.

1. Perform cutting and demolition by methods which will prevent damage to other portions of the Work and provide proper surfaces to receive installation of repair and new work.
2. Perform fitting and adjusting of products to provide finished installation complying with the specified tolerances and finishes.

END OF SECTION

SECTION 01120
ALTERATION PROJECT PROCEDURES

PART 1 GENERAL

1.1 REQUIREMENTS INCLUDED

A. Coordination of Work: Coordinate work of the trades and schedule alterations and renovation work by procedures and methods which expedite completion of the work.

B. Additional Demolition and Preparation Work: In addition to demolition specified in Section 02225, and that specifically noted on the Drawings to be cut, moved, or removed to allow for alterations and new work to proceed, include the following:

1. Remove abandoned items and items serving no useful purpose.
2. Remove unsuitable or extraneous materials not marked for salvage.
3. Clean surfaces and remove surface finishes as needed to install new work and finishes.

C. Restoration of Existing Construction: Patch, repair, and refinish existing items to remain, to the specified condition for each material, with a workmanlike transition to adjacent new items of construction acceptable to Architect/Engineer.

1.2 ALTERATIONS, CUTTING AND PROTECTION

A. Assignment of Work: Assign work of moving, removing, cutting, and patching to trades qualified to perform work in a manner to cause the least amount of damage to each type of work and provide a means of returning surfaces to appearance of new work.

B. Minimize Demolition Operations: Demolish minimum amount of existing construction necessary and perform demolition work in a manner to avoid damage to adjacent work.

C. Termination of Surfaces to be Demolished: Cut existing finished surfaces by methods to terminate surfaces in a straight line at a natural point of division.

D. Cutting and Patching Procedures: Perform cutting and patching as specified in the Special Conditions.

E. Protection of Existing Work to Remain: Protect existing finishes, equipment, and adjacent work scheduled to remain from damage.

1. Environmental Requirements: Protect existing and new work from weather and extremes of temperature.

a. Maintain existing interior work above 60F.
b. Provide weather protection, waterproofing, and heat and humidity control necessary to prevent damage to remaining existing work and to new work.

F. Temporary Enclosures: Provide temporary enclosures to separate work areas from existing buildings and areas occupied by Owner, and to provide weather protection.

G. Temporary Walkways: Maintain temporary walkways with railings from the existing exits across and beyond the Work.

PART 2 PRODUCTS

2.1 SALVAGED MATERIALS

A. Salvage sufficient quantities of cut or removed material to replace damaged work of existing construction when material is not readily obtainable on current market.

1. Store salvaged items in a dry, secure place on-site.

2. Items not required for use in the repair of existing work shall remain the property of Contractor, unless otherwise noted.
3. Do not incorporate salvaged or used material in new construction, except with permission of Architect/Engineer.

2.2 PRODUCTS FOR PATCHING, EXTENDING AND MATCHING

A. Provide same products or types of construction needed to patch, extend or match existing work. Generally, Contract Documents do not define products or standards of workmanship present in existing construction. Contractor shall be responsible for determining products by inspection and necessary testing and workmanship by use of existing building as a sample of comparison.
B. Patching, extending, or matching shall be performed to make work complete and consistent with identical standards of quality.

PART 3 EXECUTION

3.1 PERFORMANCE

A. Use of Skilled Mechanics: Patch and extend existing work using skilled mechanics who are capable of matching existing quality of workmanship. Quality of patched or extended work shall not be less than that specified for new work.

3.2 ADJUSTMENTS

A. Patching Where Existing Partitions Are Removed: Where partitions are removed, patch floors, walls, and ceilings and finish materials to match existing.

1. Where removal of partitions results in adjacent spaces becoming one, rework floors and ceilings to provide smooth planes without breaks, steps or bulkheads.
2. Where an extreme change of plane of 2" or more occurs, request instructions from Architect/Engineer as to method of making transition.

B. Adjusting Existing Doors: Trim and refinish edges of existing doors to clear new floors.

3.3 DAMAGED SURFACES

A. Patch and replace portions of an existing finished surface, found to be damaged, lifted, discolored or shows other imperfections, with matching material.

1. Provide adequate support of substrate prior to patching finish.
2. Refinish patched portions of painted or coated surfaces in a manner to produce uniform color and texture over entire surface.
3. When existing surface finish cannot be matched, refinish entire surface to nearest intersections.

3.4 TRANSITION FROM EXISTING TO NEW WORK

A. When new work abuts or finishes flush with existing work, make a smooth and workmanlike transition. Patched work shall match existing adjacent work in texture and appearance to ensure that patch or transition is invisible at a distance of 5 feet.
B. When finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface in a neat manner along a straight line at a natural line of division and provide appropriate trim to finished surface.

3.5 CLEANING

A. Perform periodic and final cleaning as specified.

1. Clean Owner-occupied areas daily.
2. Clean spillage, overspray, and heavy collection of dust in Owner-occupied areas immediately.

B. At completion of work of each trade, clean area and make surfaces ready for work of successive trades.

C. At completion of alteration work in each area, provide final cleaning and return space to a condition suitable for use by Owner.

END OF SECTION

SECTION 01153
CHANGE ORDER PROCEDURE

PART I GENERAL

1.1 DESCRIPTION

A. Work included: Make such changes in the Work, in the Contract Sum, in the Contract Time of Completion, or any combination thereof, as are described in written Change Orders signed by the Owner and the Architect/Engineer and issued after execution of the Contract, in accordance with the provisions of this Section.

B. Related work:

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
2. Changes in the Work are described further in Article 7 of the General Conditions.

1.2 QUALITY ASSURANCE

A. Include within the Contractor's quality assurance program such measures as are needed to assure familiarity of the Contractor's staff and employees with these procedures for processing Change Order data.

1.3 SUBMITTALS

A. Make submittals directly to the Architect/Engineer at the address shown in the Project Manual.

B. Submit the number of copies called for under the various items listed in this Section.

1.4 PRODUCT HANDLING

A. Maintain a "Register of Bulletins and Change Orders" at the job site, accurately reflecting current status of all pertinent data.

B. Make the Register available to the Architect/Engineer for review at his request.

1.5 PROCESSING CHANGES INITIATED BY THE OWNER

A. Should the Owner contemplate making a change in the Work or a change in the Contract Time of Completion, the Architect/Engineer will issue a "Bulletin" to the Contractor.

1. Bulletins will be dated and will be numbered in sequence.
2. The Bulletins will describe the contemplated change, and will carry one of the following instructions to the Contractor.

a. Make the described change in the Work at no change in the Contract Sum and no change in the Contract Time of Completion;
b. Make the described change in the Work, credit or cost for which will be determined in accordance with Article 7 of the General Conditions.
c. Promptly advise the Architect/Engineer (within 10 days) as to credit or cost proposed for the described change. This is not an authorization to proceed with the change.

B. If the Contractor has been directed by the Architect/Engineer to make the described change in the Work at no change in the Contract Sum and no change in the Contract Time of Completion, but the Contractor wishes to make a claim for one or both of such changes, the

Contractor shall proceed with the change and shall notify the Architect/Engineer as provided for under Paragraph 4.3.7 of the General Conditions.

C. If the Contractor has been directed by the Architect/Engineer to make the described change subject to later determination of cost or credit in accordance with Article 7.3.6 of the General Conditions, the Contractor shall:

1. Take such measures as needed to make the change.
2. Consult with the Architect/Engineer and reach agreement on the most appropriate method for determining credit or cost for the change.

D. If the Contractor has been directed by the Architect/Engineer to promptly advise him as to credit or cost proposed for the described change, the Contractor shall:

1. Analyze the described change and its impact on cost and time.
2. Secure the required information and forward it to the Architect/Engineer for review.
3. Meet with the Architect/Engineer as required to explain costs and, when appropriate, determine other acceptable ways to achieve the desired objective.
4. Alert pertinent personnel and subcontractors as to the impending change and, to the maximum extent possible, avoid such work as would increase the Owner's cost for making the change, advising the Architect/Engineer in writing when such avoidance is no longer practicable.

1.6 PROCESSING CHANGES INITIATED BY THE CONTRACTOR

A. Should the Contractor discover a discrepancy among the contract Documents, a concealed condition as described in Paragraph 4.3.6 of the General Conditions, or other cause for suggesting a change in the Work, a change in the Contract Sum, or a change in the Contract Time of Completion, he shall notify the Architect/Engineer as required by pertinent provisions of the Contract Documents.

B. Upon agreement by the Architect/Engineer that there is reasonable cause to consider the Contractor's proposed change, the Architect/Engineer will issue a Bulletin in accordance with the provisions described in Article 1.05 above.

1.7 BULLETIN RESPONSE PROCEDURE

A. Make written reply to the Architect/Engineer in response to each bulletin within 10 days of receipt.

1. State proposed change in the Contract Sum, if any.
2. State proposed change in the Contract Time of Completion, if any.
3. Clearly describe other changes in the Work required by the proposed change, or desirable therewith, if any.
4. Include full backup data such as subcontractor's letter of proposal or similar information.
5. Submit this response in single copy.

B. When cost or credit for the change has been agreed upon by the Owner and the Contractor, or the Owner has directed that cost or credit be determined in accordance with provisions of Paragraph 12.3.1 of the General Conditions, the Architect/Engineer will issue a "Change Order" to the Contractor.

1.8 PROCESSING CHANGE ORDERS

A. Change Orders will be dated and will be numbered in sequence.

B. The Change Order will describe the change or changes, will refer to the Bulletin or Bulletins involved, and will be signed by the Owner and the Architect/Engineer.

C. The Architect/Engineer will issue three copies of each Change Order to the Contractor.

1. The Contractor promptly shall sign all three copies and return them to the Architect/Engineer.
2. The Architect/Engineer will submit all copies to the Owner for signature, retain one copies in his file, will forward one signed copy to the Contractor, and one copy to the Owner.

D. Should the Contractor disagree with the stipulated change in Contract Sum or change in Contract Time of Completion, or both.

1. The Contractor promptly shall return two copies of the Change Order, unsigned by him, to the Architect/Engineer with a letter signed by the Contractor stating the reason or reasons for the Contractor's disagreement. In no case shall the Contractor proceed with a change until a signed order is issued to him.

END OF SECTION

SECTION 01200
PROJECT MEETINGS

PART 1 GENERAL

1.1 DESCRIPTION

A. Work included: To enable orderly review during progress of the Work, and to provide for systematic discussion of problems, the Contractor will conduct weekly project meetings with its sub-contractors and monthly progress meetings with the owner and architect throughout the construction period.

B. Related work:

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
2. The Contractor's relations with his subcontractors and materials suppliers, and discussions relative thereto, are the Contractor's responsibility and normally are not part of the project meetings content.

1.2 QUALITY ASSURANCE

A. For those persons designated by each Contractor to attend and participate in project meetings, provide required authority to commit the Contractor to solutions agreed upon in the project meetings.

1.3 SUBMITTALS

A. Agenda items: To the maximum extent practicable, advise the Architect/Engineer at least 24 hours in advance of project meetings regarding items to be added to the agenda.

B. Minutes:

1. The Contractor will compile minutes of each project meeting, and will furnish one copy to each Contractor, Subcontractor, Architect and Owner.
2. Recipients of copies may make and distribute such other copies as they wish.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 MEETING SCHEDULE

A. Except as noted below for the Preconstruction Meeting, progress meetings will be held once per month.

B. Coordinate as necessary to establish mutually acceptable schedule for meetings.

3.2 MEETING LOCATION

A. To the maximum extend practicable, meetings will be held at the job site.

3.3 PRECONSTRUCTION MEETING - TO BE CHAIRED BY THE ARCHITECT

A. The Preconstruction Meeting will be scheduled to be held within 15 working days after the Owner has issued the Notice to Proceed.

1. Attendance is required by authorized representatives of each Contractor and

major subcontractors working on the Project.

2. The Architect/Engineer will advise other interested parties, including the Owner, and request their attendance.

B. Minimum agenda: Data will be distributed and discussed on at least the following items:

1. Organizational arrangement of Contractor's forces and personnel, and those of subcontractors, materials suppliers, and Construction Manager.
2. Channels and procedures for communication.
3. Construction schedule, including sequence of critical work.
4. Contract Documents, including distribution of required copies of original Documents and revisions.
5. Processing of Shop Drawings and other data submitted to the Architect/Engineer for review.
6. Processing of bulletins, field decisions, and Change Orders.
7. Rules and regulations governing performance of the Work; and
8. Procedures for security, quality control, housekeeping and related matters.

3.4 PROGRESS MEETINGS

A. Attendance:

1. To the maximum extend practicable, assign the same person or persons to represent the Contractor at project meetings throughout progress of the Work.
2. Subcontractors, materials suppliers, and others may be invited to attend those project meetings in which their aspect of the Work is involved.

B. Minimum agenda:

1. Review, revise as necessary, and approve minutes of previous meetings.
2. Review progress of the Work since last meeting, including status of submittals for approval.
3. Identify problems which impede planned progress.
4. Develop corrective measures and procedures to regain planned schedule.
5. Complete other current business.

C. Revisions to minutes:

1. Unless published minutes are challenged in writing prior to the next regularly scheduled progress meeting, they will be accepted as properly stating the activities and decisions of the meeting.
2. Persons challenging published minutes shall reproduce and distribute copies of the challenge to all indicated recipients of the particular set of minutes.
3. Challenge to minutes shall be settled as priority portion of "old business" at the next regularly scheduled meeting.

END OF SECTION

SECTION 01351
ELECTRONIC SUBMITTALS

PART 1 GENERAL

1.1 REQUIREMENTS INCLUDED

A. Submittals Required Before Execution of Contract: Before Contract will be executed, the Contractor shall submit to the Architect/Engineer the following:

1. Performance Bond and Labor and Material Payment Bond.
2. Insurance Certificates.

B. Submittals Required Immediately After Execution of Contract: Submit the following to Architect/Engineer within the specified period after the execution of the Contract:

1. Construction schedule.
2. Schedule of values.

C. Submittals Required During Construction Period:

1. Shop drawings;
2. Application for payment; and
3. Test reports, required by individual sections of Specifications.

D. Submittals Required at Time of Project Closeout: Refer to Section 01700 for submittals required.

E. Related Requirements Specified Elsewhere:

1. Section 01027: Application for Payment; and
2. Section 01700: Closeout Submittals.

1.2 CONSTRUCTION SCHEDULE

A. General: The General Construction contractor shall, promptly after award of Contract, prepare and submit to the Architect/Engineer an estimated Construction Progress Schedule for the work, with sub-schedules of related activities which are essential to its progress. Submit revised progress schedules periodically.

B. Form of Schedules:

1. Format: Prepare schedules in the form of a horizontal bar chart, unless otherwise approved by the Architect/Engineer. Provide a separate horizontal bar for each trade or operation.
2. Time Scale: Identify first work day of each week.
3. Scale and Spacing: Use a scale and spacing which will allow space for notations and future revisions.
4. Format of Listings: Use the chronological order of the start of each item of work.
4. Identification of Listings: List by major specification section numbers.

C. Content of Schedule:

1. Sequence of Construction: Show complete sequence of construction by activity.
2. Dates: Show dates for beginning and completion of each major element of construction listed.

D. Progress Revisions: Show changes occurring since previous submission of schedule, including the following:

1. Major changes in scope of work;
2. Activities modified since previous submission; and
3. Revised projections of progress and completion.

E. Submissions:

1. Submission of Initial Schedule: Submit initial schedule within 15 days after award of Contracts.
2. Submission of Revised Schedules: Submit revised progress schedules with each Application for Payment or at each schedule revisions, whichever is sooner.
3. Number of Copies Submitted: Submit 1 electronic copy to the Architect/Engineer.

1.3 SUPPLIERS AND PRODUCTS LIST

A. General: Within 10 days after award of the Contract, The Contractor shall submit, to the Architect/Engineer and Owner's representative, a complete list of major suppliers being used in the work and products which are proposed for installation.

1.4 SHOP DRAWINGS AND PRODUCT DATA

A. General Requirements: Submit Shop Drawings and product data required by Contract Documents.
B. General Shop Drawing Requirements: Drawings shall be present in a clear and thorough manner. Details shall be identified by reference to sheet and detail, schedule or room numbers shown on Contract Drawings.
C. General Product Data Requirements: Product data submitted shall indicate the following:

1. Clearly mark each copy to identify pertinent products or models. Submittals containing information which is not pertinent to this project will be returned unchecked unless they are clearly identified.
2. Show performance characteristics and capacities.
3. Show dimensions and clearances required.
4. Show wiring and piping diagrams and controls.
4. Delete information not applicable to the work.

D. Contractor's Responsibilities:

1. Review Shop Drawings and product data prior to submission.
2. Determine and verify:

a. Field measurements;
b. Field construction criteria;
c. Catalog numbers and similar data; and
d. Conformance with specifications.
e. Coordination of all trades.

3. Coordinate each submittal with requirements of the work and Contract Documents.
4. Stamp and sign copy of each submittal, indicating conformance with these requirements. Do not forward submittals to the architect/engineer until conformance with the requirements is coordinated between the contractor and his suppliers/subcontractors.

5. Deviations: Notify Architect/Engineer, in writing, at time of submission, of all deviations in the submittals from requirements of the Contract Documents.
6. Begin no fabrication or work, which requires submittals until return of submittals with Architect/Engineer's approval.

F. Submission Requirements:

1. Submit Shop Drawings/Submittals electronically by email. Provide a transmittal letter indicating the full ARCHITECT/ENGINEER Project number and issuing a unique Shop Drawing Submittal Number. In addition, include name of Contractor's Project Manager, or his/her representative's name, mailing address, telephone number, and email address. Contractor shall submit Shop Drawings in Portable Data Format (pdf) at 300 dpi resolution.
2. Required Information: Submittals shall contain the following:

    a. The date of submission and dates of any previous submissions;
    b. Project title and number;
    c. Names of Contractor, suppliers and manufacturer;
    d. Field dimensions, clearly identified;
    e. Show relation to adjacent or critical features of the work or materials;
    f. Indicate applicable standards;
    g. Indicate specific model number of item to be reviewed. List all applicable accessories and optional features that are required.
    h. Identify deviations from Contract Documents;
    i. Identify revisions;
    j. Provide space for Contractor's and Architect/Engineer's stamp; and
    k. Contractor's stamp, initialed or signed, certifying review of submittal, verification of products, verification of field measurements and field construction criteria, and coordination of the information within the submittal with requirements of the work and the Contract Documents. In the case that there is no place for the stamp on the front, please stamp the back side of each sheet, indicating the page number (i.e. back of page 1 of 6). Insure that this page is also scanned in pdf format when submitting the Shop Drawing electronically. Clearly label and number each sheet in the submittal to indicate the total number of sheets in the series (i.e. 1 of 12, 2 of 12…12 of 12). For Contractor originated design/redesign, it is required that the Contractor submit one (1) original set of calculations and drawings, signed and sealed by the responsible Specialty Engineer, in conjunction with the electronic submission, using mail or messenger service. The one (1) original set should be forwarded directly to ARCHITECT/ENGINEER.
    l. Failure to stamp and review submittals will result in return of same unreviewed.
    m. If the Shop Drawing consists of samples, Contractor will submit three (3) samples for proper processing and in addition, the number of samples needed by Contractor. Contractor will need to indicate in their transmittal letter that they have forwarded the samples to ARCHITECT/ENGINEER.

3. Timing of Submittals:

    a. Make submittals far enough in advance of scheduled dates for installation to provide time required for reviews, for securing necessary approvals, for possible revisions and resubmittals, and for placing orders and securing delivery.
    b. In scheduling, allow at least ten (10) working days for review by the Architect/Engineer following his receipt of the submittal.

4. To facilitate logging and distribution of submittals and to expedite the Shop Drawing reviews, it is recommended that Contractor comply with the following:

   a. Provide a separate transmittal for each package in a submittal. A package may consist of one or more related items. For a multiple item package, list each item in the transmittal. Interrelated items should be submitted as a package. Each transmittal letter will have a unique submittal number assigned.
   b. For each submitted item, indicate the specification section it pertains to.

5. Contractor will not use shop drawings submittals for obtaining clarification regarding contract plans or specification requirements. Such clarifications required for preparation of complete and correct Shop Drawings will be requested by Request For Information (RFI) through ARCHITECT/ENGINEER.
6. Contractor's request for contract change in time, cost, design, material or product type, specification requirements and/or remedial design for correcting construction/fabrication deficiencies will not be made as a Shop Drawing submittal to ARCHITECT/ENGINEER, but will be sent in proper format to ARCHITECT/ENGINEER for further handling and processing.
7. Final Shop Drawing Approval rests with ARCHITECT/ENGINEER's Shop Drawing Review Stamp.

Electronic Shop Drawing Submittal Contact:

Shannon Finnila, Business Manager
Telephone: (906) 228-4480
Email: shannon@intdesigns.com

Send Samples To:

Integrated Designs, Inc.
1021 W. Baraga Avenue
Marquette, MI 49855

SHOP DRAWING SUBMITTAL CHECKLIST

ARCHITECT/ENGINEER Project #
Submittal #
Item Covered:

Prior to transmitting the submittal, the Contractor will verify and sign below, indicating that all applicable items on checklist are complied with:

___ Transmittal letter indicates project title, full ARCHITECT/ENGINEER project number, description of items enclosed and has a unique submittal number assigned.

___ Submittal package contains only related items. All items are separately described with page numbers or drawing numbers in the transmittal letter or in an attachment to the transmittal letter.

___ One (1) original set of prints (signed and sealed by the responsible professional engineer), when drawings are for the Contractor and/or specialty engineer originated transmittal letter.

___ Contractor approval stamp with company name, engineer's signature and date on each drawing and on each of the other individual items included in the scanned submittal.

___ All revisions from previously processed submittals are identified by clouding with revision number and date.

___ Minor plan deviations not affecting contract time, cost, design intent (structural integrity and load carrying capacity) or reducing durability/maintainability are identified by clouding.

___ Specification section and contract plan number are referenced for each item in the submittal.

___ Dimensions and details checked and coordinated for compatibility with work of all subcontractors.

___ Existing conditions and dimensions used in developing Shop Drawing details are field verified.

Compliance Verified

_____ _____
(Signature) (Title)

G. Architect/Engineer's Duties:

1. Review: Architect/Engineer will review submittals with reasonable promptness and in accordance with Construction Schedule.
2. Architect/Engineer's Stamp: Architect/Engineer will stamp and sign each submittal and indicate approval of the submittal or requirements for re-submittal.
3. Returning Submittals: Architect/Engineer will retain one (1) hard copy of submittal and will email one (1) copy of submittal in PDF format to Contractor for distribution or for resubmission.
4. Architect/Engineer receives Shop Drawing from Contractor, “electronically”, via email. Submittal shall be in PDF format at 300 dpi resolution. Architect/Engineer prints out a copy, reviews it, implements additional comments in red and stamps every sheet with the disposition (“Reviewed”, “Revise and Resubmit” or “Non-Compliant”), initials and date. Each item must have its own disposition, multiple dispositions on the same stamp is prohibited/illegal. Additional comments may be added either under the stamp or on the Transmittal or in an attached memo.
5. Architect/Engineer then rescans the Shop Drawings (including their letter of transmittal) into PDF format and 300 dpi resolution, which is then emailed to the Contractor. In the case that there is no place for the stamp on the front, please stamp the back side of each sheet, indicating the page number (back of page 1 of 6). Insure that this page is also scanned in PDF format when submitting the Shop Drawings electronically.

H. Distribution: The Contractor shall distribute Shop Drawings and product data which carry Architect/Engineer's stamp of approval to the following:

1. One copy to Contractor's job site file;
2. One copy to Contractor's record document file;
3. One or more copies returned to subcontractor (as required); and
4. One or more copies to supplier or fabricator (as required).

I. Resubmission Requirements: Make corrections or changes in the submittals required by the Architect/Engineer and resubmit until approved.

J. Substitutions:

1. The Contract is based on the standards of quality established in the Contract Documents. Substitutions will be considered only when listed at time of bidding, on the form provided therefore in the bidding documents, and when substantiated by the Contractor's submittal of required data within 10 calendar days after award of the Contract.
2. The following products may not require further approval except for interface within the work, contact the architect/engineer for direction.

    a. Products specified by reference to standard specifications such as ASTM and similar standards; and
    b. Products specified by manufacturer's name and catalog model number.

K. Or equal:

1. Where the phrase "or equal", or "or equal as approved by the Architect/Engineer", occurs in the Contract Documents, do not assume that the materials, equipment or methods will be approved as equal unless the item has been specifically so approved for this work by this Architect/Engineer.
2. The decision of the Architect/Engineer shall be final.

L. ARCHITECT/ENGINEER'S REVIEW

1. Review by the Architect/Engineer is for conformance with the design concept of the project only. The Contractor is responsible for compliance with information given in contract documents. Dimensions shall be correlated at job site, fabrication techniques and coordination of the work of all trades, remains the responsibility of the Contractor.
2. Revisions:

    a. Make revisions required by the Architect/Engineer;
    b. If the Contractor considers any required revisions to be a change, he shall so notify the Architect/Engineer as provided in Article 7 of the General Conditions; and
    c. Make only those revisions directed or approved by the Architect/Engineer.

3. Reimbursement of Architect/Engineer's costs:

    a. The Architect/Engineer will review and process only two (2) submission of each Shop Drawing and/or Sample. If shop drawings or samples are returned because the Contractor has not complied with the above requirement, he/she shall pay the costs of the Architect/Engineer or their consultants for reviewing and processing the third and subsequent submissions.

        1. The Architect/Engineer's cost shall be computed at two and one-half (2½) times payroll, plus reproduction and mailing expenses.
        2. The cost for Architect/Engineer's consultants shall be computed at two and one-half (2½) times payroll, plus reproduction and mailing expenses.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01370
SCHEDULE OF VALUES

PART 1 GENERAL

1.1 DESCRIPTION

A. Work included: Provide a detailed breakdown of the agreed Contract Sum showing values allocated to each of the various parts of the Work, as specified herein and in other provisions of the Contract Documents. Provide detailed breakdowns of sub-contractors (i.e. mechanical, plumbing, electrical).

B. Related work:

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
2. Paragraph 9.2 of the General Conditions.
3. Schedule of values is required to be compatible with the "continuation sheet" AIA Form G703 Accompanying Applications for Payment

1.2 QUALITY ASSURANCE

A. Use required means to assure arithmetical accuracy of the sums described.

B. When so required by the Architect/Engineer, provide copies of the subcontracts or other data acceptable to the Architect/Engineer, substantiating the sums described.

1.3 SUBMITTALS

A. Prior to first application for payment, submit a proposed schedule of values to the Architect/Engineer.

1. Meet with the Architect/Engineer and determine additional data, if any, required to be submitted.
2. Secure the Architect/Engineer's approval of the schedule of values prior to submitting first application for payment

END OF SECTION

SECTION 01400
QUALITY CONTROL

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Control of installation.
B. Testing and inspection and Testing Services.
C. Manufacturers' field services.

1.2 REFERENCES

A. ASTM C 1077 Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation; 1998.
B. ASTM C 1093 Standard Practice for Accreditation of Testing Agencies for Unit Masonry; 1995.
C. ASTM D 3740 Standard Practice for Minimum Requirements for Agencies Engaged in the testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
D. ASTM E 329 Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction; 1998a.
E. ASTME E 543 -Standard Practice for Agencies Performing Nondestructive Testing; 1999.
F. ASTM E 548 Standard Guide for General Criteria used for Evaluating Laboratory Competence; 1994.

1.3 SUBMITTALS

A. Testing Agency Qualifications:

1. Prior to start of Work, submit agency name, address, and telephone number, and names of full-time registered Engineer and responsible officer. Include list of certified technicians and certificate numbers with specialty.

B. Test Reports: After each test/inspection, promptly submit two copies of report to Architect and Contractor.

1. Include:

a. Date Issued.
b. Project title and number.
c. Name of inspector.
d. Date and time of sampling or inspection.
e. Identification of product and specifications section.
f. Location in the Project.
g. Type of test/inspection.
h. Date of test/inspection.
i. Results of test/inspection.
j. Conformance with Contract Documents.
k. When requested by Architect, provide interpretation of results

2. Test reports are submitted for Architect's information as contract administrator, for information for the limited purposes of assessing conformance with information given and the design concept expressed in the contract documents.

1.4 TESTING AND INSPECTION AGENCIES

A. Contractor shall employ and pay for services of a qualified testing agency to perform specified testing as part of the contract.

1. Contractor provided testing shall include: soils and concrete.

B. Employment of agency in no way relieves the Contractor of the obligation to perform Work in accordance with requirements of Contract Documents.

PART 2 PRODUCTS NOT USED

PART 3 EXECUTION

3.1 CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
B. Have Work performed by persons qualified to produce required and specified quality.

3.2 TESTING AND INSPECTION

A. See individual specification sections for testing required.
B. Testing Agency Duties:

1. Test samples of mixes submitted by Contractor.
2. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
3. Perform specified sampling and testing of products in accordance with specified standards.
4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
5. Promptly notify Architect and Contractor of observed irregularities.
6. Perform additional tests and inspections required by Architect.
7. Attend pre-construction meetings and progress meetings.
8. Submit reports of all tests/inspections specified.

C. Limits on Testing/Inspection Agency Authority:

1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
2. Agency may not approve or accept any portion of the Work.
3. Agency may not assume any duties of Contractor.
4. Agency has no authority to stop the Work.

D. Contractor Responsibilities:

1. Deliver to agency at designated location, adequate samples of materials proposed to be used which require testing, along with proposed mix designs.
2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.

3. Provide incidental labor and facilities:

   a. To provide access to Work to be tested/inspected.
   b. To obtain and handle samples at the site or at the source of Products to be tested/inspected.
   c. To facilitate tests/inspections.
   d. To provide storage and curing of test samples for operations requiring testing/inspection services.

4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.

E. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by Architect. Payment for re-testing will be charged to the Contractor by deducting testing charges from the Contract Price.

3.3 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 and other services as applicable, and to initiate instructions when necessary.
B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.4 DEFECT ASSESSMENT

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

END OF SECTION

SECTION 01500
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 DESCRIPTION

A. Work included: Provide temporary facilities and controls needed for the Work including, but not necessarily limited to:

1. Temporary utilities: electricity and construction lighting (by Contractor), use Owner's source.
2. Sanitary facilities: To be provided by contractor, on site.
3. Enclosures such as tarpaulins, barricades and canopies (by Contractor).
4. Telephone (by Contractor).

B. Related work:

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
2. Except that equipment furnished by subcontractors shall comply with requirements of pertinent safety regulations, such equipment normally furnished by the individual trades in execution of their own portions of the Work are not part of this Section.
3. Permanent installation and hookup of the various utility lines are described in other Sections.

1.2 PRODUCT HANDLING

A. Maintain temporary facilities and controls in proper and safe conditions throughout progress of the Work.

PART 2 PRODUCTS

2.1 UTILITIES

A. Electricity and construction lighting – By Contractor. Cost of electricity by owner.
B. Telephone and fax - By Contractor.

2.2 SANITARY FACILITIES

A. Contractor to provide their own sanitary facilities and maintain in sanitary condition at all times.

2.3 ENCLOSURES

A. Provide and maintain for the duration of construction all scaffolds, tarpaulins, canopies, warning signs, steps, platforms, bridges, and other temporary construction necessary for proper completion of the Work in compliance with pertinent safety and other regulations.

2.4 PROJECT SIGNS

A. A jobsite sign is not required for this project.
B. Except as otherwise specifically approved by the Architect/Engineer, do not permit other signs or advertising on the job site.

PART 3 EXECUTION

3.1 MAINTENANCE AND REMOVAL

A. Maintain temporary facilities and controls as long as needed for safe and proper completion of the Work.

B. Remove such temporary facilities and controls as rapidly as progress of the Work will permit, or as directed by the Owner.

END OF SECTION

SECTION 01600
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.

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 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 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. Substitutions may 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:
E. Has investigated proposed product and determined that it meets or exceeds quality level of specified product.
F. Will provide same warranty for Substitution as for specified product.
G. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
H. Waives claims for additional costs or time extension that may subsequently become apparent.
I. Will reimburse Owner and Architect/Engineer for review or redesign services associated with re-approval by authorities having jurisdiction.
J. 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 01630
SUBSTITUTIONS, PRODUCT ACCEPTANCE

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

A. DRAWINGS AND GENERAL PROVISIONS of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 SUBMITTALS

A. Substitution Request Submittal: Requests for substitution will be considered if presented to the Architect at least 10 days in advance of bid due date.

1. Identify the product, or the fabrication to be replaced in each request. Include related Specification Section and Drawing numbers. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:
2. Product Data, including Drawings and descriptions of products, fabrication and installation procedures.
3. Samples, where applicable or requested.
4. A detailed comparison of significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include elements such as size, weight, durability, performance and visual effect.
5. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate Contractors, that will become necessary to accommodate the proposed substitution.
6. A Statement indicating the substitution's effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.
7. Cost information, including all related costs under this Contract and excluding Architect's redesign costs, net change, if any, in the Contract Sum, and waiving all claims for additional costs related to the substitution which subsequently became apparent.
8. Certification by the Contractor that the substitution proposed is appropriate in every significant respect to that required by the Contract Documents, and that it will perform adequately in the application indicated. Include the Contractor's waiver of rights to additional payment or time, that may subsequently become necessary because of the failure of the substitution to perform adequately.

B. Product Presentation: Conduct a presentation at the Architect's office if required by the Architect to prove appropriateness to the specified product.

C. Architect's Action: Within one week of receipt of Bids, the Architect may request additional information or documentation necessary for evaluation of the request. Within 2 week of receipt of the request, or one week of receipt of the additional information or documentation, which ever is later, the Architect will notify the Contractor of acceptance or rejection of the proposed substitution. If a decision on use of a proposed substitute is not made or obtained within the time allocated, use the product specified by name. If acceptance is made prior to award, it will be included in the Contract Amount. If acceptance is made after Award, it will be in the form of a Change Order.

1.3 GENERAL REQUIREMENTS FOR SUBSTITUTIONS

A. Substitutions During Bidding:

1. Substitutions shall be included in the proposal under the following conditions only and shall follow all requirements of "Acceptance of Substitutions".
2. When the Contractor is unable to obtain competitive prices from more than one of the specified manufacturers.
3. When the Contractor knows of another product of equal or better quality and performance.
4. When the Contractor has had unsatisfactory experience with one or more of the specified products or has reason to believe that the specified Manufacturer will not provide the necessary guarantees or assume responsibility for performance.

B. Substitutions After Contract:

1. Substitutions proposed after Award of the contract will only be considered for the following reasons.
2. A substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear. Additional responsibilities for the Owner may include additional compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner or separate Contractors, and similar considerations.

C. Acceptance of Substitutions:

1. Substitutions will be considered for any manufacturer except those followed by the words "No Substitutions" in the Specifications.
2. In all cases where substitutions are proposed by the Contractor, it shall be the sole responsibility of the Contractor to provide adequate data and samples as required by the Architect to evaluate the substitution.
3. The Architect shall not be obliged to justify his reason for rejecting a proposed substitution.
4. In the event that a substitution is accepted conditionally on the Contractor's agreement to assume full responsibility for equality and performance, the Contract shall provide a full value warranty and agree to make good all damages resulting from the failure of the substitute product.

1.4 ACCEPTANCE OF MATERIALS AND MANUFACTURERS

A. Standard Materials:

1. Architect's acceptance applies to the Manufacturer only and shall not act to permit any deviation from other requirements of the Specifications.
2. Acceptance will be based on the Manufacturer's specifications at time of issuance of Bidding Documents. Deviations from such specifications shall be considered as a substitution.
3. Requests for acceptance shall be in tabular form stating Specification paragraph and material selected, except as otherwise provided.
4. Shop Drawings shall not indicate any material for which acceptance has not been received, unless accompanied by a separate request for approval. In no case shall Architect's review and return of Shop Drawings constitute and acceptance of either specified or substitute manufacturers or materials.

B. Materials Involving Supplementary Warranty of Maintenance Contract:

1. These materials shall be submitted as a request for acceptance over the signature of a qualified technical representative in the direct employ of the Manufacturer of such other person as the manufacturer may authorize in writing. Request for acceptance shall contain the following information.

   a. Name of project.
   b. Name of Contractor, Subcontractor or other party to whom material is furnished.
   c. Reference to Specification Section and Article where material is specified and other Contract Documents necessary for identification.
   d. Statement of acceptance of documents, conditions, and performance requirements:

      1) Statement that documents as issued are in accordance with manufacturer's recommendations for use of specified materials, or
      2) Recommended modification of detail, use, application or for substitution of different product by same manufacturer as being more suitable for the performance requirements of the warranty.

   e. Statement that detailed installation instructions will be provided.
   f. Extent of job site technical services, consultants or instructors proposed, if any.
   g. Statement that warranty will be provided.
   h. Special provisions required to keep warranty in force.
   i. Requests for acceptance may be in the form of a letter including the above items and addressed to the subcontractor responsible for installation of the material, or may be according to a sample form of Material Proposal, provided by the Architect.
   j. Upon receipt of the manufacturer's proposal, the subcontractor shall add his own statement agreeing to comply with the manufacturer's requirements and warranting his own workmanship.
   k. The Contractor shall submit letter of endorsement of copies of all documents, including letters of comment, to the Architect for approval. In the event that the request for approval recommends a change in the work, modification of detail, or substitution of material, the Contractor shall indicate his concurrence with the change as being within the scope of the Contract or indicate the change in the Contract Sum for making such change, or state his objections to the change.

END OF SECTION

SECTION 01700
CONTRACT CLOSE-OUT

PART 1 GENERAL

1.1 DESCRIPTION

A. Work included: Provide an orderly and efficient transfer of the completed Work to the Owner.
B. Related Work:

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
2. Activities relative to Contract close-out are described in, but not necessarily limited to the General Conditions and Sections in Division 1 of these Specifications.
3. "Substantial Completion" is defined in Paragraph 9.8 of the General Conditions.

1.2 QUALITY ASSURANCE

A. Prior to requesting inspection by the Architect/Engineer, use adequate means to assure that the Work is completed in accordance with the specified requirements and is ready for the requested inspection (punch list).

1.3 PROCEDURES

A. Substantial Completion:

1. Prepare and submit the list required by the first sentence of Paragraph 9.8.2 of the General Conditions.
2. Within a reasonable time after receipt of the list, the Architect/Engineer will inspect to determine status of completion.
3. Should the Architect/Engineer determine that the Work is not substantially complete:

a. The Architect/Engineer promptly will so notify the Contractor, in writing, giving the reasons therefore.
b. Remedy the deficiencies and notify the Engineer when ready for inspection.
c. The Architect/Engineer will reinspect the Work.

4. When the Architect/Engineer concurs that the Work is substantially complete:

a. The Architect/Engineer will prepare a "Certificate of Substantial Completion" on AIA form G704, accompanied by the Contractor's list of items to be completed or corrected, as verified by the Architect/Engineer.
b. The Architect/Engineer will submit the certificate to the Owner and to the Contractor for their written acceptance of the responsibilities assigned to them in the Certificate.

B. Final Completion:

1. Prepare and submit the notice required by the first sentence of Paragraph 9.8.2 of the General Conditions.
2. Verify that the Work is complete including, but not necessarily limited to, the items mentioned in Paragraph 9.8.2 of the General Conditions.
3. Certify that:

a. Contract Documents have been reviewed;

b. Work has been inspected for compliance with the Contract Documents;
c. Work has been completed in accordance with the Contract Documents;
d. Equipment and systems have been tested as required, and are operation; and
e. Work is completed and ready for final inspection.

4. The Architect/Engineer will make an inspection to verify status of completion (final punch list).
5. Should the Architect/Engineer determine that the Work is incomplete or defective:

a. The Architect/Engineer promptly will so notify the Contractor, in writing, listing the incomplete or defective work.
b. Remedy the deficiencies promptly, and notify the Architect/Engineer when ready for reinspection.

6. When the Architect/Engineer determines that the work is acceptable under the Contract Documents, he will request the Contractor to make close-out submittals.

C. Close-out submittals include, but are not necessarily limited to:

1. Operation and maintenance data for items so listed in pertinent other Sections of the Contract Documents, and for other items when so directed by the Architect/Engineer;
2. Contractor 1 year written warranty, manufacturer's warranties and bonds;
3. Manufacturers Technical Representative Report;
4. Spare parts and materials extra stock;
5. Evidence of compliance with requirements of governmental agencies having jurisdiction including, but not necessarily limited to:

a. Certificates of Inspection and Occupancy;

6. Certificates of Insurance for products and completed operations.
7. Evidence of payment and release of liens;
8. List of subcontractors, service organizations, and principal vendors, including names, addresses, and telephone numbers where they can be reached for emergency service at all times including nights, weekends, and holidays.

D. Final adjustment of accounts:

1. Submit a final statement of accounting to the Architect/Engineer, showing all adjustments to the Contract Sum.
2. If so required, the Architect/Engineer will prepare a final Change Order showing adjustments to the Contract Sum which were not made previously by Change Orders.

1.4 INSTRUCTION

A. Instruct the Owner's personnel in proper operation and maintenance of systems, equipment, and similar items which were provided as part of the work.

END OF SECTION

SECTION 01710
CLEANING

PART 1 GENERAL

1.1 DESCRIPTION

A. Work included: Contractor shall, throughout the construction period, maintain the buildings and site in a standard of cleanliness as described in this Section. Failure by any contractor to comply will result in action by the Owner to provide cleanup services which will be back-charged to all contractors on the project.

B. Related work:

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
2. In addition to standards described in this Section, comply with requirements for cleaning as described in pertinent other Sections of these Specifications.

1.2 QUALITY ASSURANCE

A. Conduct daily inspection, and more often if necessary, to verify that requirements for cleanliness are being met.
B. In addition to standards described in this Section comply with pertinent requirements of governmental agencies having jurisdiction.

PART 2 PRODUCTS

2.1 CLEANING MATERIALS AND EQUIPMENT

A. Contractor shall provide required personnel, equipment, and materials needed to maintain the specified standard of cleanliness.

2.2 COMPATIBILITY

A. Use only the cleaning materials and equipment which are compatible with the surface being cleaned, as recommended by the manufacturer of the material.

PART 3 EXECUTION

3.1 PROGRESS CLEANING

A. General; Contractor shall:

1. Retain stored items in an orderly arrangement allowing maximum access, not impeding traffic or drainage, and providing protection of materials from weather.
2. Not allow accumulation of scrap, debris, waste material, and other items not required for construction of this Work.
3. At least once a week, and more often if necessary, completely remove all scrap, debris, and waste material from the building and place in a dumpster.
4. Provide adequate storage for all items awaiting removal from the job site, observing requirements for fire protection and protection of the ecology.

B. Site:

1. Daily, and more often if necessary, inspect the site and pickup all scrap, debris, and waste material. Remove such items to the place designated for their storage.
2. Weekly, and more often if necessary, inspect all arrangements of materials stored on the site. Restack, tidy, or otherwise service arrangements to meet the requirements of subparagraph 3.01-A-1 above.
3. Maintain the site in a neat and orderly condition at all times.

C. Structures:

1. Weekly, and more often if necessary, inspect the structures and pick up all scrap, debris, and waste material. Remove such items to the place designated for their storage.
2. Weekly, and more often if necessary, sweep interior spaces clean.

    a. "Clean," for the purposes of this subparagraph, shall be interpreted as meaning free from dust and other material capable of being removed by use of reasonable effort.

3. As required preparatory to installation of succeeding materials, clean the structures or pertinent portions thereof to the degree of cleanliness recommended by the manufacturer of the succeeding material, using equipment and materials required to achieve the necessary cleanliness.

PART 4 FINAL CLEANING

A. "Clean," for the purpose of this Article, and except as may be specifically provided otherwise, shall be interpreted as meaning the level of cleanliness generally provided by skilled cleaners using commercial quality building maintenance equipment and materials.
B. Prior to completion of the Work, remove from the job site all tools, surplus materials, equipment, scrap, debris, and waste.
C. Site:

1. Completely remove resultant debris.

D. Structures:

1. Exterior:

    a. Visually inspect exterior surfaces and remove all traces of soil, waste materials, smudges, and other foreign matter.
    b. Remove all traces of splashed materials from adjacent surfaces.
    c. If necessary to achieve a uniform degree of cleanliness, hose down the exterior of the structure.
    d. In the event of stubborn stains not removable with water, the Architect/Engineer may require light sandblasting or other cleaning at no additional cost to the Owner.

E. Schedule final cleaning as approved by the Architect/Engineer to enable the Owner to accept a completely clean Project.

END OF SECTION

SECTION 01720
PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.1 DESCRIPTION

A. Work included:

1. Throughout progress of the work, maintain an accurate record of changes in the Contract Documents, as described in Article 3.1 below.
2. Upon completion of the work, transfer the recorded changes to a single set of Record Documents, as described in Article 3.2 below.

B. Related work:

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
2. Other requirements affecting Project Record Documents may appear in pertinent other Sections of these Specifications.

1.2 QUALITY ASSURANCE

A. Delegate the responsibility for maintenance of Record Documents to one person on the Contractor's staff. Record the work of all subcontractors on a single sheet.
B. Accuracy of records:

1. Thoroughly coordinate changes within the Record Documents, making adequate and proper entries on each page of Specifications and each sheet of Drawings and other Documents where such entry is required to show the change properly.
2. Accuracy of records shall be such that future search for items shown in the Contract Documents may rely reasonably on information obtained from the approved Project Record Documents.

C. Make entries within 24 hours after receipt of information that the change has occurred.

1.3 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.
B. The Architect/Engineer's approval of the current status of Project Record Documents may be a prerequisite to the Architect/Engineer's approval of requests for progress payment and request for final payment under the Contract.
C. Prior to submitting each request for progress payment, secure the Architect/Engineer's approval of the current status of the Project Record Documents.
D. Prior to submitting the request for final payment, submit the final Project Record Documents to the Architect/Engineer and secure his approval.

1.4 PRODUCT HANDLING

A. Maintain the job set of Record Documents completely protected from deterioration and from loss and damage until completion of the work and transfer of all recorded data to the final Project Record Documents.
B. In the event of loss of recorded data, use means necessary to again secure the data to the Architect/Engineer's approval.

1. Such means shall include, if necessary in the opinion of the Architect/Engineer, removal and replacement of the concealing materials, at no cost to the Owner.
2. In such case, provide replacements to the standards originally required by the Contract Documents, at no cost to the Owner.

PART 2 PRODUCTS

2.1 RECORD DOCUMENTS

A. Job Set: Promptly following receipt of the Owner's Notice to Proceed, secure one complete set of all documents comprising the Contract.

PART 3 EXECUTION

3.1 MAINTENANCE OF JOB SET

A. Immediately upon receipt of the job set described in Paragraph 2.01-A above, identify each of the Documents with the title "RECORD DOCUMENTS - JOB SET."
B. Preservation:

1. Considering the contract completion time, the probable number of occasions upon which the job set must be taken out for new entries and for examination, and the conditions under which these activities will be performed, devise a suitable method for protecting the job set.
2. Do not use the job set for any purpose except entry of new data and for review by the Architect/Engineer.

C. Making entries on Drawings:

1. Using an erasable colored pencil (not ink or indelible pencil), clearly describe the change by graphic line and note as required. Use a separate color for each trade.
2. Date all entries.
3. Call attention to the entry by a "cloud" drawn around the area(s) affected.
4. In the event of overlapping changes, use different colors for the overlapping changes.

D. Make entries in the pertinent other documents as approved by the Architect/Engineer.

3.2 FINAL PROJECT RECORD DOCUMENTS

A. The purpose of the final Project Record Documents is to provide factual information regarding all aspects of the work, both concealed and visible, to enable future modification of the work to proceed without lengthy and expensive site measurement, investigation, and examination.
B. Transfer of data to other documents:

1. If the documents other than Drawings have been kept clean during progress of the work, and if entries thereon have been orderly to the approval of the Architect/Engineer, the job set of those Documents other than Drawings will be accepted as final Record Documents.
2. If any such document is not so approved by the Architect/Engineer, secure a new copy of that document from the Architect/Engineer at the Architect/Engineer's usual charge for reproduction and handling, and carefully transfer the change data to the new copy to the approval of the Architect/Engineer.

C. Review and submittal:

1. Submit the completed set of Project Record Documents to the Architect/Engineer as described in Paragraph 1.03-D above.
2. Participate in review meetings as required.
3. Make required changes and promptly deliver the final Project Record Documents to the Architect/Engineer.

3.3 CHANGES SUBSEQUENT TO ACCEPTANCE

A. The Contractor has no responsibility of recording changes in the work subsequent to final completion, except for change resulting from work performed under warranty.

END OF SECTION

SECTION 01740
WARRANTIES AND BONDS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Preparation and submittal.
B. Time and schedule of submittals.

1.2 RELATED SECTIONS

A. Invitation to Bid.
B. General Conditions, Form of Agreement, Performance Bond and Labor and Material Payment Bonds, Warranty and Correction of Work.
C. Section 01700 - Contract Closeout: Contract closeout procedures.
D. Individual Specifications Sections: Warranties required for specific Products of Work.

1.3 FORM OF SUBMITTALS

A. Bind in commercial quality, 8-1/2 x 11 inch three-ring side binders with hardback, cleanable, plastic covers.
B. Label cover of each binder with type or printed title WARRANTIES AND BONDS, with title of project, name, address and telephone number of Contractor and equipment supplier and name of responsible principal.
C. Table of Contents: Neatly type, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of the product or work item.
D. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate type sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address and telephone number of responsible principal.

1.4 PREPARATION OF SUBMITTALS

A. Obtain warranties and bonds, executed in duplicate by responsible subcontractors, suppliers, and manufacturers, within ten days after completion of the applicable item or work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty blank until the Date of Substantial Completion is determined.
B. Verify that documents are in proper form, contain full information, and are notarized.
C. Co-execute submittals when required.
D. Retain warranties and bonds until time specified for submittal.

1.5 TIME OF SUBMITTALS

A. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within ten days after acceptance.
B. Make other submittals within ten days after Date of Substantial Completion, prior to final Application for Payment.
C. For items of Work when acceptance is delayed beyond Date of Substantial Completion, submit within ten days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED
PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 024119
SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building or structure.
2. Demolition and removal of selected site elements.
3. Salvage of existing items to be reused or recycled.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.

B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse.

C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.

D. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

E. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

1.4 MATERIALS OWNERSHIP

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

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.5 CLOSEOUT SUBMITTALS

A. Inventory: Submit a list of items that have been removed and salvaged.

1.6 QUALITY ASSURANCE

A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

1.7 FIELD CONDITIONS

A. Owner will occupy portions of building adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

1. Before selective demolition, Owner will remove the following items:

a. Loose furnishings and teaching equipment.

C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

1. Hazardous materials will be removed by Owner before start of the Work.
2. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

E. Hazardous Materials: Present in buildings and structures to be selectively demolished. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.

1. Hazardous material remediation is specified elsewhere in the Contract Documents.
2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.
3. Owner will provide material safety data sheets for suspected hazardous materials that are known to be present in buildings and structures to be selectively demolished because of building operations or processes performed there.

F. Storage or sale of removed items or materials on-site is not permitted.

G. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1. Maintain fire-protection facilities in service during selective demolition operations. Indicate to Owner when down-time may occur.

1.8 COORDINATION

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

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.

C. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.

1. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

D. Verify that hazardous materials have been remediated before proceeding with building demolition operations.

E. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs or video.
1. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.
2. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

3.2 PREPARATION

A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.

1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
2. Arrange to shut off utilities with utility companies.
3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
4. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.

a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.

b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

3.4 PROTECTION

A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
4. Cover and protect furniture, furnishings, and equipment that have not been removed.
5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."

B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

1. Strengthen or add new supports when required during progress of selective demolition.

C. Remove temporary barricades and protections where hazards no longer exist.

3.5 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of

hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.

5. Maintain adequate ventilation when using cutting torches.
6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
9. Dispose of demolished items and materials promptly.

B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

C. Removed and Salvaged Items:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area on-site designated by Owner.
5. Protect items from damage during transport and storage.

D. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition, cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.6 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least 3/4 inch at junctures with construction to remain. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete. Neatly trim openings to dimensions indicated.

B. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, and then remove concrete between saw cuts.

C. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts.

D. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, and then break up and remove.

E. Roofing: Remove no more existing roofing than what can be covered in one day by new roofing and so that building interior remains watertight and weathertight.

1. Remove existing roof membrane, flashings, copings, and roof accessories.
2. Remove existing roofing system down to substrate, or insulation where indicated in drawings.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove demolition waste materials from Project site.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

B. Burning: Do not burn demolished materials.

3.8 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION

SECTION 061000
ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Rooftop bases and support curbs.
2. Wood blocking, cants, and nailers.
3. Wood furring.
4. Plywood backing panels.

1.3 DEFINITIONS

A. Boards or Strips: Lumber of less than 2 inches nominal size in least dimension.

B. Dimension Lumber: Lumber of 2 inches nominal size or greater but less than 5 inches nominal size in least dimension.

C. Exposed Framing: Framing not concealed by other construction.

D. OSB: Oriented strand board.

E. Timber: Lumber of 5 inches nominal size or greater in least dimension.

1.4 SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials based on testing by a qualified independent testing agency.
3. For fire-retardant treatments, include physical properties of treated lumber both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D5664.
4. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

B. Fastener Patterns: Full-size templates for fasteners in exposed framing.

C. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Stack wood products flat with spacers beneath and between each bundle to provide air circulation. Protect wood products from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. For exposed lumber indicated to receive a stained or natural finish, omit grade stamp and provide certificates of grade compliance issued by grading agency.
3. Dress lumber, S4S, unless otherwise indicated.

B. Maximum Moisture Content of Lumber: 15 percent for 2-inch nominal thickness or less; 19 percent for more than 2-inch nominal thickness unless otherwise indicated.

C. Engineered Wood Products: Acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.

1. Allowable design stresses, as published by manufacturer, shall meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

2.2 FIRE-RETARDANT-TREATED MATERIALS

A. General: Where fire-retardant-treated materials are indicated, materials shall comply with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.

B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.

1. Treatment shall not promote corrosion of metal fasteners.
2. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D2898. Use for exterior locations and where indicated.
3. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D3201 at 92 percent relative humidity. Use where exterior type is not indicated.
4. Design Value Adjustment Factors: Treated lumber shall be tested according to ASTM D5664 and design value adjustment factors shall be calculated according to ASTM D6841.

C. Kiln-dry lumber after treatment to maximum moisture content of 19 percent.

D. Identify fire-retardant-treated wood with appropriate classification marking of qualified testing agency.

1. For exposed lumber indicated to receive a stained or natural finish, omit marking and provide certificates of treatment compliance issued by testing agency.

E. For exposed items indicated to receive a stained or natural finish, chemical formulations shall not bleed through, contain colorants, or otherwise adversely affect finishes.

F. Application: Treat items indicated on Drawings, and the following:

1. Concealed blocking.
2. Roof construction.
3. Plywood backing panels.

2.3 DIMENSION LUMBER FRAMING

A. Joists, Rafters, and Other Framing Not Listed Above: Construction or No. 2 grade.

1. Species:
   a. Hem-fir (north); NLGA.
   b. Douglas fir-larch; WCLIB or WWPA.

B. Joists, Rafters, and Other Framing Not Listed Above: Any species of machine stress-rated dimension lumber with a grade of not less than 2400f-2.0E.

C. Joists, Rafters, and Other Framing Not Listed Above: Any species and grade with a modulus of elasticity of at least 900,000 psi and an extreme fiber stress in bending of at least 600 psi for 2-inch nominal thickness and 12-inch nominal width for single-member use.

D. Exposed Framing Indicated to Receive a Stained or Natural Finish: Hand-select material for uniformity of appearance and freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot-holes, shake, splits, torn grain, and wane.

1. Species and Grade: As indicated above for load-bearing construction of same type.

2.4 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1. Blocking.
2. Rooftop equipment bases and support curbs.
3. Cants.

B. Dimension Lumber Items: Construction or No. 2 grade lumber of any species.

C. Concealed Boards: 19 percent maximum moisture content and any of the following species and grades:

1. Hem-fir or hem-fir (north); Construction or No. 2 Common grade; NLGA, WCLIB, or WWPA.

D. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.

E. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

F. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

2.5 PLYWOOD BACKING PANELS

A. Equipment Backing Panels: Plywood, DOC PS 1, , fire-retardant treated, in thickness indicated or, if not indicated, not less than 3/4-inch nominal thickness.

2.6 FASTENERS

A. General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture.

1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A153/A153M.

B. Nails, Brads, and Staples: ASTM F1667.

C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

2.7 METAL FRAMING ANCHORS

A. Manufacturers: Subject to compliance with requirements, undefined:

1. Cleveland Steel Specialty Co.
2. KC Metals Products, Inc.
3. Simpson Strong-Tie Co., Inc.
4. USP Structural Connectors.

B. Allowable design loads, as published by manufacturer, shall meet or exceed those of products of manufacturers listed. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency. Framing anchors shall be punched for fasteners adequate to withstand same loads as framing anchors.

C. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A653/A653M, G60 coating designation. Use for interior locations unless otherwise indicated.

D. Hot-Dip, Heavy-Galvanized Steel Sheet: ASTM A653/A653M; structural steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G185 coating designation; and not less than 0.036 inch thick. Use for wood-preservative-treated lumber and where indicated.

E. Joist Hangers: U-shaped joist hangers with 2-inch- long seat and 1-1/4-inch- wide nailing flanges at least 85 percent of joist depth.

1. Thickness: 0.050 inch.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

B. Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.

C. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

D. Install plywood backing panels by fastening to studs; coordinate locations with utilities requiring backing panels. Install fire-retardant-treated plywood backing panels with classification marking of testing agency exposed to view.

E. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.

F. Do not splice structural members between supports unless otherwise indicated.

G. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.

1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.

H. Provide fire blocking in furred spaces, stud spaces, and other concealed cavities as indicated and as follows:

1. Fire block furred spaces of walls, at each floor level, at ceiling, and at not more than 96 inches o.c. with solid wood blocking or noncombustible materials accurately fitted to close furred spaces.
2. Fire block concealed spaces of wood-framed walls and partitions at each floor level, at ceiling line of top story, and at not more than 96 inches o.c. Where fire blocking is not inherent in framing system used, provide closely fitted solid wood blocks of same width as framing members and 2-inch nominal thickness.
3. Fire block concealed spaces between floor sleepers with same material as sleepers to limit concealed spaces to not more than 100 sq. ft. and to solidly fill space below partitions.
4. Fire block concealed spaces behind combustible cornices and exterior trim at not more than 20 feet o.c.

I. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function

of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

J. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.

1. Use inorganic boron for items that are continuously protected from liquid water.
2. Use copper naphthenate for items not continuously protected from liquid water.

K. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.

L. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code (IBC).
2. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.
3. ICC-ES evaluation report for fastener.

M. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

N. For exposed work, arrange fasteners in straight rows parallel with edges of members, with fasteners evenly spaced, and with adjacent rows staggered.

1. Comply with approved fastener patterns where applicable.
2. Use finishing nails unless otherwise indicated. Countersink nail heads and fill holes with wood filler.
3. Use common nails unless otherwise indicated. Drive nails snug but do not countersink nail heads.

3.2 PROTECTION

A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

B. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION

SECTION 062023 - INTERIOR FINISH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Interior board paneling.
2. Finish carpentry items, other than new shop prefabricated manufactured casework.
3. Hardwood benchtops in all locker rooms

B. Related Requirements:

1. Section 061000 "Rough Carpentry" for furring, blocking, and other carpentry work not exposed to view and for framing exposed to view.
2. Section 099300 "Staining and Transparent Finish” for interior finish carpentry.

1.3 DEFINITIONS

A. MDF: Medium-density fiberboard.

B. MDO: Plywood with a medium-density overlay on the face.

C. PVC: Polyvinyl chloride.

1.4 ACTION SUBMITTALS

A. Submit Shop Drawings indicating materials, component profiles, fastening methods, jointing details, finishes, and accessories to a minimum scale of 1-1/2 inch to one foot.
B. Submit two samples 6 inches X 6 inches in size illustrating wood grain and/or plastic laminate pattern, color, and specified finish.
C. Submit instructions for use of adhesives, attachment hardware, and finish hardware.

1.5 QUALITY ASSURANCE

A. All millwork shall be provided by an AWI member.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber, plywood, and other panels flat with spacers between each bundle to provide air circulation.

1. Protect materials from weather by covering with waterproof sheeting, securely anchored.
2. Provide for air circulation around stacks and under coverings.

B. Deliver interior finish carpentry materials only when environmental conditions comply with requirements specified for installation areas. If interior finish carpentry materials must be stored in other than installation areas, store only where environmental conditions comply with requirements specified for installation areas.

1.7 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install interior finish carpentry materials until building is enclosed and weatherproof, wet-work in space is completed and nominally dry, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.

B. Do not install finish carpentry materials that are wet, moisture damaged, or mold damaged.

1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with applicable rules of any rules-writing agency certified by the American Lumber Standard Committee's (ALSC) Board of Review. Grade lumber by an agency certified by the ALSC's Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. For exposed lumber, mark grade stamp on end or back of each piece, or omit grade stamp and provide certificates of grade compliance issued by grading agency.

B. Hardwood Lumber: FS MM-L-736; Premium grade in accordance with AWI; maximum moisture content of 6 percent; Maple species, with vertical grain, of quality capable of transparent finish.

C. Softwood Plywood: DOC PS 1.

D. Hardboard: ANSI A135.4.

E. MDF: ANSI A208.2, Grade 130.

F. Particleboard: ANSI A208.1, Grade M-2.

G. Melamine-Faced Particleboard: Particleboard complying with ANSI A208.1, Grade M-2, finished on both faces with thermally fused, melamine-impregnated decorative paper and complying with NEMA LD 3, Grade VGL, for Test Methods 3.3, 3.4, 3.6, 3.8, and 3.10.

1. Color: Selected from manufacturers standard.

2.2 BENCHTOPS – NOT USED

A. 1 3/4" Standard Maple Benchtop as manufactured by Michigan Maple Block Co.
B. Edge grained lamination, solid maple, electronically bonded.
C. Wear-resistant finish, Durakryl 102.
D. Size: refer to drawings.

2.3 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment by Pressure Process: AWPA U1; Use Category .

1. Kiln dry lumber and plywood after treatment to a maximum moisture content of 19 and 18 percent, respectively.
2. Preservative Chemicals: Acceptable to authorities having jurisdiction.
3. For exposed items indicated to receive transparent finish, do not use chemical formulations that contain colorants or that bleed through or otherwise adversely affect finishes.
4. Do not use material that is warped or does not comply with requirements for untreated material.
5. Mark lumber with treatment-quality mark of an inspection agency approved by the ALSC's Board of Review.
   a. For exposed lumber indicated to receive a stained or natural finish,.
6. Mark plywood with appropriate classification marking of an inspection agency acceptable to authorities having jurisdiction.

   a. For exposed plywood indicated to receive a stained or natural finish, mark back of each piece.
7. Application: Where indicated on Drawings.

2.4 PANELING AND TRIM - NOT USED

A. Board Paneling: Interior wood-board paneling complying with MMPA WM 9.

1. Species: Maple.
2. Grade: Clear No. 1.
3. Maximum Moisture Content: 15 percent with at least 85 percent of shipment at 12 percent or less.
4. Pattern: to be selected.

2.5 MISCELLANEOUS MATERIALS

A. Fasteners for Interior Finish Carpentry: Nails, screws, and other anchoring devices of type, size, material, and finish required for application indicated to provide secure attachment, concealed where possible.

B. Low-Emitting Materials: Adhesives shall comply with testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

C. Glue: Aliphatic-resin, polyurethane, or resorcinol wood glue recommended by manufacturer for general carpentry use.

D. Installation Adhesive for Foam-Plastic Moldings: Product recommended for indicated use by foam-plastic molding manufacturer.

E. Paneling Adhesive: Comply with paneling manufacturer's written instructions for adhesives.

F. Multipurpose Construction Adhesive: Formulation, complying with ASTM D 3498, that is recommended for indicated use by adhesive manufacturer.

G. Lumber for Shimming and Blocking: Softwood lumber, Southern Pine.

H. Wood Filler: Solvent or Oil base, tinted to match surface finish color.

2.6 FABRICATION

A. Back out or kerf backs of the following members, except those with ends exposed in finished work:

1. Interior standing and running trim, except shoe and crown molds.
2. Wood-board paneling.

B. Ease edges of lumber less than 1 inch in nominal thickness to 1/16-inch radius and edges of lumber 1 inch or more in nominal thickness to 1/8-inch radius.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine finish carpentry materials before installation. Reject materials that are wet, moisture damaged, and mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrates of projections and substances detrimental to application.

B. Before installing interior finish carpentry, condition materials to average prevailing humidity in installation areas for a minimum of 24 hours.

3.3 INSTALLATION, GENERAL

A. Do not use materials that are unsound; warped; improperly treated or finished; inadequately seasoned; too small to fabricate with proper jointing arrangements; or with defective surfaces, sizes, or patterns.

B. Install interior finish carpentry level, plumb, true, and aligned with adjacent materials.

1. Use concealed shims where necessary for alignment.
2. Scribe and cut interior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
3. Where face fastening is unavoidable, countersink fasteners, fill surface flush, and sand unless otherwise indicated.
4. Install to tolerance of 1/8 inch in 96 inches for level and plumb. Install adjoining interior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.
5. Coordinate interior finish carpentry with materials and systems in or adjacent to it. Provide cutouts for mechanical and electrical items that penetrate interior finish carpentry.

3.4 PANELING INSTALLATION

A. Board Paneling: Install according to manufacturer's written instructions.

1. Arrange in random-width pattern suggested by manufacturer unless boards or planks are of uniform width.
2. Install in full lengths without end joints.
3. Stagger end joints in random pattern to uniformly distribute joints on each wall.
4. Install with uniform end joints with only end-matched (tongue-and-groove) joints within each field of paneling.
5. Install with uniform end joints. Locate end joints only over furring or blocking.
6. Select and arrange boards on each wall to minimize noticeable variations in grain character and color between adjacent boards.
7. Install with uniform tight joints between boards.
8. Fasten paneling by face nailing, setting nails, and filling over nail heads.
9. Fasten paneling with trim screws, set below face and filled.
10. Fasten paneling by blind nailing through tongues.
11. Fasten paneling with paneling system manufacturer's concealed clips.
12. Fasten paneling to gypsum wallboard with panel adhesive.

3.5 ADJUSTING

A. Replace interior finish carpentry that is damaged or does not comply with requirements.

1. Interior finish carpentry may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.

B. Adjust joinery for uniform appearance.

3.6 CLEANING

A. Clean interior finish carpentry on exposed and semi-exposed surfaces.

B. Restore damaged or soiled areas and touch up factory-applied finishes if any.

3.7 PROTECTION

A. Protect installed products from damage from weather and other causes during construction.

B. Remove and replace finish carpentry materials that are wet, moisture damaged, and mold damaged.

1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

3.8 TOLERANCES

A. Maximum Variation from True Position: 1/16 inch.
1. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch.

END OF SECTION 062023

SECTION 066100
SANI-SURFACE HYGIENIC WALL CLADDING

PART 1 - GENERAL

1.1 SUMMARY

A. Sani-Surface™ Hygienic Wall Cladding for wall protection and decoration

1.2 SECTION INCLUDES

A. Sani-Surface™ Hygienic Wall Cladding

1.3 REFERENCES

A. American Society for Testing and Materials (ASTM)
B. International Standards Organization for Standardization (ISO)
C. National Fire Protection Association (NFPA)
D. National Sanitation Foundation (NSF)
E. Society of Automotive Engineers (SAE)
F. International Standards Organization for Standardization (ISO)

1.04 SYSTEM DESCRIPTION

A. Performance Requirements: Provide Sani-Surface™ Hygienic Wall Cladding systems that conform to the following requirements of regulatory agencies and the quality control of IPC Door and Wall Protection Systems™, InPro Corporation.

1. Fire Performance Characteristics: Provide Sani-Surface™ Hygienic Wall Cladding conforming with NFPA Class A fire rating. Surface burning characteristics as determined by ASTM E84 shall be flame spread of 25 or less and smoke development of 450 or less.
2. Chemical and Stain Resistance: Provide material that shows resistance to stain when tested in accordance with ASTM D543. Sani-Surface™ Hygienic Wall Cladding shall show “No Change” from reagents.
3. Effect of Household Chemicals: Provide material that is effective against reaction to household chemicals when tested in accordance with ASTM D1308. Sani-Surface™ Hygienic Wall Cladding shall show “No Change” from reagents.
4. Mold Growth Resistance: Provide material that is resistant to mold growth when tested in accordance with ASTM D3273. Sani-Surface™ Hygienic Wall Cladding shall show no growth.
5. Abrasion Resistance: Provide material that is resistant to abrasion when tested in accordance with ASTM D4060. Sani-Surface™ Hygienic Wall Cladding shall have a 0.01 % weight loss; CS-17 wheels 1,000 gram weight at 25 cycles.
6. Impact Resistance: Provide material that is resistant to impact when tested in accordance to ASTM D4226. Sani-Surface™ Hygienic Wall Cladding shall show a mean failure energy of 11.5 in-lbs.
7. Fungi Resistance: Provide material that is resistant to fungi when tested in accordance to ASTM G21 and ISO 846 method A. Sani-Surface™ Hygienic Wall Cladding shall show no fungal growth.
8. Bacterial Resistance: Provide material that is resistant to bacteria when tested in accordance to ASTM G22 and ISO 846 method C.

Sani-Surface™ Hygienic Wall Cladding shall show no bacterial growth.

9. Effect of Liquids: Provide material that is effective against reaction to liquids when tested in accordance with ISO 2812. Sani-Surface™ Hygienic Wall Cladding shall have a “0” rating (no effect) from reagents.
10. Cleanroom Particle Concentration: Provide Sani-Surface™ Hygienic Wall Cladding that achieved an ISO class number of “Class 6” when evaluated using the test procedure outlined in VDI 2083-17 2013 section 6.2 (Particle Emission) and classified using ISO 14644.1-2015. Provide Sani-Surface™ Hygienic Wall Cladding that achieved a classification of "Class 5" when utilizing Federal Standard 209E for the determination for classification.
11. Indoor Air Quality: Provide material that passes the test requirements of ISO 16000-9. Sani-Surface™ Hygienic Wall Cladding shall have a TVOC concentration of <5 µg/m3 and Styrene concentration was <1 µg/m3.
12. GREENGUARD Certified: Provide Sani-Surface™ Hygienic Wall Cladding that has a GREENGUARD Gold Certification.
13. Color Consistency: Provide components matched in accordance with SAE J-1545 - (Delta E) with a color difference no greater than 1.0 units using CIE Lab, CIE CMC, CIE LCh, Hunter Lab or similar color space scale systems.
14. NSF Certified: Provide Sani-Surface™ Hygienic Wall Cladding that is NSF certified.

1.5 SUBMITTALS

A. Product Data: Manufacturer's printed product data for each type of Sani-Surface™ Hygienic Wall Cladding specified.
B. Samples: Verification samples of Sani-Surface™ Hygienic Wall Cladding, 5” x 8" (127mm x 203mm) piece, of each type and color indicated.
C. Manufacturer's Installation Instruction: Printed installation instructions for Sani-Surface™ Hygienic Wall Cladding.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in unopened factory packaging to the jobsite
B. Inspect materials at delivery to assure that specified products have been received.
C. Store in original packaging in a climate controlled location away from direct sunlight.

1.7 PROJECT CONDITIONS

A. Environmental Requirements: Products must be installed in an interior climate controlled environment.

1.8 WARRANTY

A. Standard IPC Limited Lifetime Warranty against material and manufacturing defects.

PART 2 – PRODUCTS

2.1 MANUFACTURER

A. Acceptable Manufacturer:
IPC Door and Wall Protection Systems, InPro Corporation, PO Box 406 Muskego, WI 53150 USA; Telephone: 800.222.5556, Fax: 888.715.8407, www.inprocorp.com

B. Substitutions: Not permitted

C. Provide all Sani-Surface™ Hygienic Wall Cladding and wall protection from a single source.

2.2 MANUFACTURED UNITS

A. Sani-Surface™ Hygienic Wall Cladding

1. Sani-Surface™ Hygienic Wall Cladding Options
Item # Dimensions Thickness
610-XXXX: 4'x8' (1.22m x 2.44m) .080" = 5/64" (2mm) standard
61010-XXXX: 4'x10' (1.22m x 3.04m) .080" = 5/64" (2mm) available

B. Accessories:

1. Trim
61710 Top Cap; Length: 10' (3.04m)
61810 Vertical Divider Bar; Length: 10' (3.04m)
61910 Inside Corner; Length: 10' (3.04m)
62010 Outside Corner; Length: 10' (3.04m)
2. Color Matched Caulk
3. Two-Part Urethane Waterproof Sealant (Bright White)

2.3 MATERIALS

A. Vinyl: Sani-Surface™ Hygienic Wall Cladding shall be manufactured from 100% chemical and stain resistant polyvinyl chloride. No plasticizers shall be added (plasticizers may aid in bacterial growth).

2.4 ACCESSORIES

A. Top caps, inside corners, divider bars and outside corners shall be made of extruded PVC.

2.5 FINISHES

A. Sani-Surface™ Hygienic Wall Cladding Surface shall have a velvet texture.

1. **Color: Pure White 0383**

B. Vinyl Accessories: Top caps, inside corners, divider bars and outside corners shall be of a color matching the IPC.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions in which the Sani-Surface™ Hygienic Wall Cladding will be installed.

1. Complete all finishing operations, including painting, before beginning installation of Sani-Surface™ Hygienic Wall Cladding materials.

B. Wall surface shall be dry and free from dirt, grease and loose paint.

3.2 PREPARATION

A. General: Prior to installation, clean substrate to remove dust, debris and loose particles.

3.3 INSTALLATION

A. General: Locate the Sani-Surface™ Hygienic Wall Cladding as indicated on the approved detail drawing for the appropriate substrate and in compliance with the IPC installation instructions. Install level and plumb at the height indicated on the drawings.

B. Installation of Sani-Surface™ Hygienic Wall Cladding

1. Adhere to substrate with Titebond GREENchoice Fast Grab FRP Construction, a freeze-thaw stable, nonflammable, high strength, water based adhesive that trowels on and allows approximately 20 minutes working time before firming.
2. Adhere to substrate with Titebond Advanced Polymer, a freeze-thaw stable, nonflammable, high strength, water based adhesive that trowels on and allows approximately 20 minutes working time before firming.

3.4 CLEANING

A. At completion of the installation, clean surfaces in accordance with the IPC clean-up and maintenance instructions.

END OF SECTION

SECTION 076200
SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes the following:
1. Miscellaneous flashing and trim

1.2 SUBMITTALS

A. Product Data: For each product indicated.
B. Shop Drawings: Show layouts, profiles, shapes, seams, dimensions, and details for fastening, joining, supporting, and anchoring sheet metal flashing and trim.
C. Samples: For each type of sheet metal flashing and trim.

1.3 QUALITY ASSURANCE

A. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual." Conform to dimensions and profiles shown unless more stringent requirements are indicated.

PART 2 PRODUCTS

2.1 SHEET METALS

A. Aluminum Sheet: ASTM B 209 (ASTM B 209M), Alloy 3003, 3004, 3105, or 5005, Temper suitable for forming and structural performance required, but not less than H14, finished as follows:

1. Termination and Edge Details at roof: Per drawings and in conformance with roofing manufacturer.
2. Termination at soffit, per exterior finish system manufacturer’s recommendation and in conformance with roofing manufacturer.
3. Finish: Kynar 500® PVDF prefinished 24 gauge Galvalume steel.
4. Color: of manufacturers full range of color options

2.2 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation.
B. Felt Underlayment: ASTM D 226, Type II (No. 30), asphalt-saturated organic felt, nonperforated.

1. Slip Sheet: Rosin-sized paper, minimum 3 lb/100 sq. ft. (0.16 kg/sq. m).

C. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads.

1. Fasteners for Flashing and Trim: Blind fasteners or self-drilling screws, gasketed, with hex washer head.
2. Blind Fasteners: High-strength aluminum or stainless-steel rivets.

D. Sealing Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealing tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, non-staining tape.

2.3 FABRICATION, GENERAL

A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated. Shop fabricate items where practicable. Obtain field measurements for accurate fit before shop fabrication.
B. Fabricate sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.

1. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
2. Seams for Other Than Aluminum: Fabricate nonmoving seams in accessories with flat-lock seams. Tin edges to be seamed, form seams, and solder.

C. Sealed Joints: Form non-expansion but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA recommendations.
D. Expansion Provisions: Where lapped or bayonet-type expansion provisions in the Work cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with sealant concealed within joints.
E. Conceal fasteners and expansion provisions where possible on exposed-to-view sheet metal flashing and trim, unless otherwise indicated.
F. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal, and in thickness not less than that of metal being secured.

2.4 WALL SHEET METAL FABRICATIONS

A. Openings Flashing in Frame Construction: Fabricate head, sill, jamb, and similar flashings to extend beyond wall openings. Form head and sill flashing with 2-inch- (50-mm-) high end dams. Fabricate from the following material:

1. Aluminum: 0.0320 inch thick.

PART 3 EXECUTION

3.1 INSTALLATION, GENERAL

A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.

1. Torch cutting of sheet metal flashing and trim is not permitted.

B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by fabricator or manufacturers of dissimilar metals.
C. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.
D. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
E. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

1. Space cleats not more than 12 inches (300 mm) apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.

F. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet (3 m) with no joints allowed within 24 inches (600 mm) of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with sealant concealed within joints.

G. Fasteners: Use fasteners of sizes that will penetrate substrate not less than 1-1/4 inches (32 mm) for nails and not less than 3/4 inch (19 mm) for wood screws.

1. Galvanized or Prepainted, Metallic-Coated Steel: Use stainless-steel fasteners.
2. Aluminum: Use aluminum or stainless-steel fasteners.
3. Copper: Use copper, hardware bronze, or stainless-steel fasteners.
4. Stainless Steel: Use stainless-steel fasteners.

H. Seal joints with [elastomeric] [butyl] sealant as required for watertight construction.

I. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pretin edges of sheets to be soldered to a width of 1-1/2 inches (38 mm) except where pretinned surface would show in finished Work.

3.2 WALL FLASHING INSTALLATION

A. General: Install sheet metal wall flashing to intercept and exclude penetrating moisture according to SMACNA recommendations and as indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.

B. Openings Flashing in Frame Construction: Install continuous head, sill, jamb, and similar flashings to extend beyond wall openings.

END OF SECTION 076200

SECTION 078413
PENETRATION FIRESTOPPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification Section, apply to work specified in this section.

1.2 DEFINITIONS

A. Firestopping: Material or combination of materials used to retain integrity of fire-rated construction by maintaining an effective barrier against the spread of flame, smoke, and hot gases through penetrations in fire rated wall and floor assemblies.

1.3 GENERAL DESCRIPTION OF THE WORK OF THIS SECTION

A. Only tested firestop systems shall be used in specific locations as follows:

1. Penetrations for the passage of duct, cable, cable tray, conduit, piping, electrical busways and raceways through fire-rated vertical barriers (walls and partitions), horizontal barriers (floor/ceiling assemblies), and vertical service shaft walls and partitions.

2. Blank openings through fire-rated vertical barriers (walls and partitions), horizontal barriers (floor/ceiling assemblies), and vertical service shaft walls and partitions.

3. Openings and penetrations in fire-rated partitions or walls containing fire doors.

4. Openings around structural members which penetrate floors or walls.

1.4 RELATED WORK OF OTHER SECTIONS

A. A. Coordinate work of this section with work of other sections as required to properly execute the work and as necessary to maintain satisfactory progress of the work of other sections, including:

1. Section 033000 - Cast-In-Place Concrete
2. Section 042000 - Unit Masonry
3. Section 092000 - Gypsum Board
4. Section 220000 - Plumbing
5. Section 230000 - Heating, Ventilating, and Air Conditioning
6. Section 260000 - Electrical

1.5 REFERENCES

A. Test Requirements: ASTM E 814, "Standard Method of Fire Tests of Through Penetration Fire Stops"

B. Test Requirements: UL 1479, “Fire Tests of Through-Penetration Firestops”

C. Underwriters Laboratories (UL) of Northbrook, IL publishes tested systems in their "FIRE RESISTANCE DIRECTORY" that is updated annually.

1. UL Fire Resistance Directory:

a. Firestop Devices (XHJI)
b. Fire Resistance Ratings (BXRH)
c. Through-Penetration Firestop Systems (XHEZ)
d. Fill, Voids, or Cavity Material (XHHW)
e. Forming Materials (XHKU)

1.6 QUALITY ASSURANCE

A. Fire-Test-Response Characteristics: Provide through-penetration fire stop systems that comply with specified requirements of tested systems.

B. Firestop System installation must meet requirements of ASTM E 814, UL 1479 or UL 2079 tested assemblies that provide a fire rating equal to that of construction being penetrated.

C. Proposed firestop materials and methods shall conform to applicable governing codes having local jurisdiction.

D. Firestop Systems do not reestablish the structural integrity of load bearing partitions/assemblies, or support live loads and traffic. Installer shall consult the structural engineer prior to penetrating any load bearing assembly.

E. For those firestop applications that exist for which no qualified tested system is available through a manufacturer, an engineering judgment derived from similar qualified tested system designs or other tests will be submitted to local authorities having jurisdiction for their review and approval prior to installation. Engineering judgment documents must follow requirements set forth by the International Firestop Council.

1.7 SUBMITTALS

A. Submit Product Data: Manufacturer's specifications and technical data for each material including the composition and limitations, documentation of qualified firestop systems to be used and manufacturer's installation instructions to comply with Section 013000.

B. Manufacturer's engineering judgment identification number and drawing details when no qualified tested system is available for an application. Engineering judgment must include both project name and contractor’s name who will install firestop system as described in document.

C. Submit material safety data sheets provided with product delivered to job-site.

1.8 INSTALLER QUALIFICATIONS

A. Engage an experienced Installer who is certified, licensed, or otherwise qualified by the firestopping manufacturer as having been provided the necessary training to install manufacturer’s products per specified requirements. A supplier’s willingness to sell its firestopping products to the Contractor or to an Installer engaged by the Contractor does not in itself confer qualification on the buyer.

B. Installation Responsibility: assign installation of through-penetration fire stop systems and fire-resistive joint systems in Project to a single sole source firestop specialty contractor.

C. The work is to be installed by a contractor with at least one of the following qualifications:

1. FM 4991 Approved Contractor
2. UL Approved Contractor

D. Firm with not less than 3 years' experience with fire stop installation.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials undamaged in manufacturer's clearly labeled, unopened containers, identified with brand, type, and UL label where applicable.

B. Coordinate delivery of materials with scheduled installation date to allow minimum storage time at job-site.

C. Store materials under cover and protect from weather and damage in compliance with manufacturer's requirements, including temperature restrictions.

D. Comply with recommended procedures, precautions or remedies described in material safety data sheets as applicable.

E. Do not use damaged or expired materials.

1.10 PROJECT CONDITIONS

A. Do not use materials that contain flammable solvents.

B. Schedule installation of firestopping after completion of penetrating item installation but prior to covering or concealing of openings.

C. Verify existing conditions and substrates before starting work. Correct unsatisfactory conditions before proceeding.

D. Weather conditions: Do not proceed with installation of firestop materials when temperatures exceed the manufacturer's recommended limitations for installation printed on product label and product data sheet.

E. During installation, provide masking and drop cloths to prevent firestopping materials from contaminating any adjacent surfaces.

PART 2 - PRODUCTS

2.1 FIRESTOPPING - GENERAL

A. Provide firestopping composed of components that are compatible with each other, the substrates forming openings, and the items, if any, penetrating the firestopping under conditions of service and application, as demonstrated by the firestopping manufacturer based on testing and field experience.

B. Provide components for each firestopping system that are needed to install fill material. Use only components specified by the firestopping manufacturer and approved by the qualified testing agency for the designated fire-resistance-rated systems.

C. Penetrations in Fire Resistance Rated Walls: Provide firestopping with ratings determined in accordance with UL 1479 or ASTM E 814.

D. F-Rating: Not less than the fire-resistance rating of the wall construction being penetrated.

E. Penetrations in Horizontal Assemblies: Provide firestopping with ratings determined in accordance with UL 1479 or ASTM E 814.

F. F-Rating: Minimum of 1-hour rating, but not less than the fire-resistance rating of the floor construction being penetrated.

G. T-Rating: when penetrant is located outside of a wall cavity, minimum of 1-hour rating, but not less than the fire-resistance rating of the floor construction being penetrated.

H. W-Rating: Class 1 rating in accordance with water leakage test per UL 1479.

I. Penetrations in Smoke Barriers: Provide firestopping with ratings determined in accordance with UL 1479 or ASTM E 814.

J. L-Rating: Not exceeding 5.0 cfm/sq. ft. of penetration opening at both ambient and elevated temperatures.

K. Mold Resistance: Provide penetration firestoppping with mold and mildew resistance rating of 0 as determined by ASTM G21.

L. Firestopping Materials are either “cast-in-place” (integral with concrete placement) or “post installed.” Provide cast-in-place firestop devices prior to concrete placement.

2.2 ACCEPTABLE MANUFACTURERS

A. A. Subject to compliance with through penetration firestop systems (XHEZ) listed in Volume II of the UL Fire Resistance Directory, provide products of the following manufacturer as identified below:

1. Hilti, Inc., Tulsa, Oklahoma
2. 3M Products
3. Tremco Sealants

2.3 MATERIALS

A. Use only firestop products that have been UL 1479 or ASTM E 814 tested for specific fire-rated construction conditions conforming to construction assembly type, penetrating item type, annular space requirements, and fire-rating involved for each separate instance.

B. Pre-installed firestop devices for use with noncombustible and combustible pipes (closed and open systems), conduit, and/or cable bundles penetrating concrete floors and/or gypsum walls, the following products (basis of design) are acceptable:

1. Hilti Cast-In Place Firestop Device (CP 680-P)
2. Add Aerator Adaptor when used in conjunction with aerator system.
3. Hilti Tub Box Kit (CP 681) for use with tub installations.
4. Hilti Cast-In Place Firestop Device (CP 680-M) for use with noncombustible penetrants.
5. Hilti Speed Sleeve (CP 653) for use with cable penetrations.
6. Hilti Firestop Drop-In Device (CFS-DID) for use with noncombustible and combustible penetrants.
7. Hilti Firestop Block (CFS-BL)

C. Sealants, caulking materials, or foams for use with non-combustible items including steel pipe, copper pipe, rigid steel conduit and electrical metallic tubing (EMT), the following products are acceptable:

1. Hilti Intumescent Firestop Sealant (FS-ONE)
2. Hilti Self-leveling Firestop Sealant (CP 604)
3. Hilti Fire Foam (CP 620)
4. Hilti Flexible Firestop Sealant (CP 606)
5. Hilti Elastomeric Firestop Sealant (CP 601S)

D. Sealants or caulking materials for use with sheet metal ducts, the following products are acceptable:

1. Hilti Elastomeric Firestop Sealant (CP 601S)
2. Hilti Flexible Firestop Sealant (CP 606)
3. Hilti Intumescent Firestop Sealant (FS-ONE)

E. Intumescent sealants, caulking materials for use with combustible items (penetrants consumed by high heat and flame) including insulated metal pipe, PVC jacketed, flexible cable or cable bundles and plastic pipe, the following products are acceptable:

1. Hilti Intumescent Firestop Sealant (FS-ONE)

F. Foams, intumescent sealants, or caulking materials for use with flexible cable or cable bundles, the following products are acceptable:

1. Hilti Intumescent Firestop Sealant (FS-ONE)

G. Hilti Fire Foam (CP 620)

1. Hilti Elastomeric Firestop Sealant (CP 601S)
2. Hilti Flexible Firestop Sealant (CP 606)

H. Non-curing, re-penetrable, intumescent putty or foam materials for use with flexible cable or cable bundles, the following products are acceptable:

1. Hilti Firestop Putty Stick (CP 618)
2. Hilti Firestop Plug (CFS-PL)

I. Wall opening protective materials for use with U.L. listed metallic and specified nonmetallic outlet boxes, the following products are acceptable:

1. Hilti Firestop Putty Pad (CP 617)
2. Hilti Firestop Box Insert

J. Firestop collar or wrap devices attached to assembly around combustible plastic pipe (closed and open piping systems), the following products are acceptable:

1. Hilti Firestop Collar (CP 643N)
2. Hilti Firestop Collar (CP 644)
3. Hilti Wrap Strips (CP 648E/648S)

K. J. Materials used for large openings and complex penetrations made to accommodate cable trays and bundles, multiple steel and copper pipes, electrical busways in raceways, the following products are acceptable:

1. Hilti Firestop Mortar (CP 637)
2. Hilti Firestop Block (CFS-BL)
3. Hilti Fire Foam (CP 620)
4. Hilti Firestop Board (CP 675T)

L. Non curing, re-penetrable materials used for large openings and complex penetrations made to accommodate cable trays and bundles, multiple steel and copper pipes, electrical busways in raceways, the following products are acceptable:

1. Hilti Firestop Block (CFS-BL)
2. Hilti Firestop Board (CP 675T)

M. Re-penetrable, round cable management devices for use with new or existing cable bundles penetrating gypsum or masonry walls, the following products are acceptable:

1. Hilti Speed Sleeve (CP 653) with integrated smoke seal fabric membrane.
2. Hilti Firestop Sleeve (CFS-SL SK)
3. Hilti Retrofit Sleeve (CFS-SL RK) for use with existing cable bundles.
4. Hilti Gangplate (CFS-SL GP) for use with multiple cable management devices.
5. Hilti Gangplate Cap (CFS-SL GP CAP) for use at blank openings in gangplate for future penetrations.

N. For blank openings made in fire-rated wall or floor assemblies, where future penetration of pipes, conduits, or cables is expected, the following products are acceptable:

1. Hilti Firestop Block (CFS-BL)
2. Hilti Firestop Plug (CFS-PL)

O. Provide a firestop system with a "F" Rating as determined by UL 1479 or ASTM E 814 which is equal to the time rating of construction being penetrated.

PART 3 - EXECUTION

3.1 PREPARATION

A. Verification of Conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.

1. Verify penetrations are properly sized and in suitable condition for application of materials.
2. Surfaces to which firestop materials will be applied shall be free of dirt, grease, oil, rust, laitance, release agents, water repellents, and any other substances that may affect proper adhesion.
3. Provide masking and temporary covering to prevent soiling of adjacent surfaces by firestopping materials.
4. Comply with manufacturer's recommendations for temperature and humidity conditions before, during and after installation of firestopping.
5. Do not proceed until unsatisfactory conditions have been corrected.

3.2 COORDINATION

A. Coordinate construction of openings, penetrations and construction joints to ensure that the fire stop systems are installed according to specified requirements.

B. Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate through-penetration fire stop systems. Coordinate construction and sizing of joints to ensure that fire-resistive joint systems are installed according to specified requirements.

C. Coordinate fire stopping with other trades so that obstructions are not placed in the way prior to the installation of the fire stop systems.

D. Do not cover up through-penetration fire stop and joint system installations that will become concealed behind other construction until each installation has been examined by the building inspector..

3.3 INSTALLATION

A. Regulatory Requirements: Install firestop materials in accordance with UL Fire Resistance Directory.

B. Manufacturer's Instructions: Comply with manufacturer's instructions for installation of through-penetration materials.

1. Seal all holes or voids made by penetrations to ensure an air and water resistant seal.
2. Consult with mechanical engineer, project manager, and damper manufacturer prior to installation of UL firestop systems that might hamper the performance of fire dampers as it pertains to duct work.
3. Protect materials from damage on surfaces subjected to traffic.

3.4 FIELD QUALITY CONTROL

A. Examine sealed penetration areas to ensure proper installation before concealing or enclosing areas.

3.5 Keep areas of work accessible until inspection by applicable code authorities.

A. Perform under this section patching and repairing of firestopping caused by cutting or penetrating of existing firestop systems already installed by other trades.

B. Manufacturer’s Field Services: During Installation, provide periodic destructive testing inspections to assure proper installation/application. After installation is complete, submit findings in writing indicating whether or not the installation of the tested system identified was installed correctly.

3.6 ADJUSTING AND CLEANING

A. Remove equipment, materials and debris, leaving area in undamaged, clean condition.

B. Clean all surfaces adjacent to sealed holes and joints to be free of excess firestop materials and soiling as work progresses.

3.7 LABOR USE TO INSTALL FIRESTOP SYSTEMS

A. To ensure complete harmony on the project site, the installation of each scope of work is to be performed jurisdictionally correct per existing trade agreements.

END OF SECTION

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Silicone joint sealants.
2. Non-staining silicone joint sealants.
3. Mildew-resistant joint sealants.
4. Butyl joint sealants.
5. Latex joint sealants.

1.3 SUBMITTALS

A. Product Data: For each joint-sealant product.

B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

C. Joint-Sealant Schedule: Include the following information:

1. Joint-sealant application, joint location, and designation.
2. Joint-sealant manufacturer and product name.
3. Joint-sealant formulation.
4. Joint-sealant color.

D. Product Test Reports: For each kind of joint sealant, for tests performed by manufacturer and witnessed by a qualified testing agency.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.

B. Product Testing: Test joint sealants using a qualified testing agency.

1. Testing Agency Qualifications: Qualified according to ASTM C 1021 to conduct the testing indicated.

C. Mockups: Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.

1.5 FIELD CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer.
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.6 WARRANTY

A. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

B. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:

1. Movement of the structure caused by stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
2. Disintegration of joint substrates from causes exceeding design specifications.
3. Mechanical damage caused by individuals, tools, or other outside agents.
4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 JOINT SEALANTS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.2 SILICONE JOINT SEALANTS

A. Silicone, S, NS, 100/50, T, NT: Single-component, non-sag, plus 100 percent and minus 50 percent movement capability, traffic- and non-traffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 100/50, Uses T and NT.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Dow Corning Corporation.
b. May National Associates, Inc.; a subsidiary of Sika Corporation.
c. Pecora Corporation.
d. Sika Corporation; Joint Sealants.

B. Silicone, S, NS, 50, T, NT: Single-component, non-sag, plus 50 percent and minus 50 percent movement capability, traffic- and non-traffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 50, Uses T and NT.

1. Manufacturers: Subject to compliance with requirements, undefined:

a. Dow Corning Corporation.
b. Soudal USA.

C. Silicone, S, NS, 25, T, NT: Single-component, non-sag, plus 25 percent and minus 25 percent movement capability, traffic- and non-traffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 25, Uses T and NT.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. May National Associates, Inc.; a subsidiary of Sika Corporation.
b. Pecora Corporation.
c. Sika Corporation; Joint Sealants.

2.3 NONSTAINING SILICONE JOINT SEALANTS

A. Non-staining Joint Sealants: No staining of substrates when tested according to ASTM C 1248.

B. Silicone, Non-staining, S, NS, 50, NT: Non-staining, single-component, non-sag, plus 50 percent and minus 50 percent movement capability, non-traffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 50, Use NT.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Dow Corning Corporation.
b. GE Construction Sealants; Momentive Performance Materials Inc.
c. May National Associates, Inc.; a subsidiary of Sika Corporation.
d. Pecora Corporation.
e. Sika Corporation; Joint Sealants.
f. Tremco Incorporated.

C. Silicone, Non-staining, S, NS, 100/50, T, NT: Non-staining, single-component, non-sag, plus 100 percent and minus 50 percent movement capability, traffic- and non-traffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 100/50, Uses T and NT.

1. Manufacturers: Subject to compliance with requirements, undefined:

a. Dow Corning Corporation.

2.4 MILDEW-RESISTANT JOINT SEALANTS

A. Mildew-Resistant Joint Sealants: Formulated for prolonged exposure to humidity with fungicide to prevent mold and mildew growth.

B. Silicone, Mildew Resistant, Acid Curing, S, NS, 25, NT: Mildew-resistant, single-component, non-sag, plus 25 percent and minus 25 percent movement capability, non-traffic-use, acid-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 25, Use NT.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Dow Corning Corporation.
b. GE Construction Sealants; Momentive Performance Materials Inc.

c. May National Associates, Inc.; a subsidiary of Sika Corporation.
d. Pecora Corporation.
e. Tremco Incorporated.

C. STPE, Mildew Resistant, S, NS, 50, NT: Mildew-resistant, single-component, non-sag, plus 50 percent and minus 50 percent movement capability, non-traffic-use, silyl-terminated polyether joint sealant; ASTM C 920, Type S, Grade NS, Class 50, Use NT.

1. Manufacturers: Subject to compliance with requirements, undefined:

a. BASF Corporation.

2.5 BUTYL JOINT SEALANTS

A. Butyl-Rubber-Based Joint Sealants: ASTM C 1311.

1. Manufacturers: Subject to compliance with requirements, undefined:

a. Bostik, Inc.
b. Pecora Corporation.

2.6 LATEX JOINT SEALANTS

A. Acrylic Latex: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. May National Associates, Inc.; a subsidiary of Sika Corporation.
b. Pecora Corporation.
c. Sherwin-Williams Company (The).
d. Tremco Incorporated.

2.7 JOINT-SEALANT BACKING

A. Sealant Backing Material, General: Non-staining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Adfast.
b. Alcot Plastics Ltd.
c. BASF Corporation.
d. Construction Foam Products; a division of Nomaco, Inc.

B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin) Type O (open-cell material) Type B (bicellular material with a surface skin) or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
   a. Concrete.
   b. Masonry.
   c. Unglazed surfaces of ceramic tile.
   d. Exterior insulation and finish systems.

3. Remove laitance and form-release agents from concrete.
4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
   a. Metal.
   b. Glass.
   c. Porcelain enamel.
   d. Glazed surfaces of ceramic tile.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application, and replace them with dry materials.

D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

F. Tooling of Non-sag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint profile per Figure 8A in ASTM C 1193 unless otherwise indicated.
4. Provide flush joint profile at locations indicated on Drawings according to Figure 8B in ASTM C 1193.
5. Provide recessed joint configuration of recess depth and at locations indicated on Drawings according to Figure 8C in ASTM C 1193.

    a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

3.4 FIELD QUALITY CONTROL

3.5 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.6 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.7 JOINT-SEALANT SCHEDULE

A. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal non-traffic surfaces.

1. Joint Locations:

   a. Construction joints in cast-in-place concrete.
   b. Control and expansion joints in unit masonry.
   c. Joints between metal panels.
   d. Joints between different materials listed above.
   e. Perimeter joints between materials listed above and frames of doors windows and louvers.
   f. Control and expansion joints in ceilings and other overhead surfaces.

2. Joint Sealant: Silicone, non-staining, S, NS, 50, NT.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

B. Joint-Sealant Application: Interior joints in horizontal traffic surfaces.

1. Joint Locations:

   a. Isolation joints in cast-in-place concrete slabs.
   b. Control and expansion joints in tile flooring.

2. Joint Sealant: Urethane, S, P, 25, T, NT.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

C. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal non-traffic surfaces.

1. Joint Locations:

   a. Control and expansion joints on exposed interior surfaces of exterior walls.
   b. Tile control and expansion joints.
   c. Vertical joints on exposed surfaces of unit masonry and concrete.

2. Joint Sealant: Urethane, S, NS, 25, NT.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

D. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal non-traffic surfaces not subject to significant movement.

1. Joint Locations:

   a. Control joints on exposed interior surfaces of exterior walls.
   b. Perimeter joints between interior wall surfaces and frames of interior doors windows and elevator entrances.

2. Joint Sealant: Acrylic latex.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

E. Joint-Sealant Application: Mildew-resistant interior joints in vertical surfaces and horizontal non-traffic surfaces.

1. Joint Locations:

   a. Joints between plumbing fixtures and adjoining walls, floors, and counters.
   b. Tile control and expansion joints where indicated.

2. Joint Sealant: Silicone, mildew resistant, acid curing, S, NS, 25, NT.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

END OF SECTION

SECTION 085413
FIBERGLASS DOUBLE HUNG WINDOWS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Ultrex® double hung and related double hung stationary window complete with hardware, glazing, weather strip, insect screen, standard or specified anchors, trim, attachments, and accessories.

1.2 RELATED SECTIONS

A. Section 01 33 23 – Submittal Procedures: Shop Drawings, Product Data and Samples
B. Section 01 62 00 – Product Options
C. Section 01 65 00 – Product Delivery
D. Section 01 66 00 – Product Storage and Handling Requirements
E. Section 01 71 00 – Examination and Preparation
F. Section 01 73 00 - Execution
G. Section 01 74 00 – Cleaning and Waste Management
H. Section 01 76 00 – Protecting Installed Construction
I. Section 06 22 00 – Millwork: Wood trim other than furnished by window manufacturer
J. Section 07 92 00 – Joint Sealants: Sill sealant and perimeter caulking
K. Section 09 90 00 – Paints and Coatings: Paint and stain other than factory-applied finish

1.3 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. C1036: Standard Specification for Flat Glass.
2. E90-09: Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
3. E 283: Standard Test Method for Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors.
4. E 330: Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Door by Uniform Static Air Pressure Difference.
5. E 547: Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Cyclic Static Air Pressure Differential.
6. E 2190: Standard Specification for Insulating Glass Unit Performance Evaluation.
7. E 2068: Standard Test Method to Determine the Operating and Breakaway Forces of Sliding Windows and Doors.
8. F2090-17: Standard Specification for Window Fall Prevention Devices with Emergency Escape (Egress) Release Mechanisms.

B. Insulating Glass Manufacturer’s Alliance/Insulating Glass Certification Council (IGMA/IGCC)
C. American Architectural Manufacturer’s Association/Window and Door Manufacturer’s Association/Canadian Standards Association (AAMA/WDMA/CSA):

1. AAMA/WDMA/CSA 101/I.S.2/A440-11: NAFS - North American Fenestration Standard/Specification for windows, doors, and skylights
2. AAMA/WDMA/CSA 101/I.S.2/A440-17: NAFS - North American Fenestration Standard/Specification for windows, doors, and skylights.

D. Window and Door Manufacturer’s Association (WDMA): Hallmark Certification Program.

E. American Architectural Manufacturer's Association (AAMA): 624-10: Voluntary Specification, Performance Requirements and Test Procedures for Organic Coatings on Fiber Reinforced Thermoset Profiles.

F. National Fenestration Rating Council (NFRC):

1. 100: Procedures for Determining Fenestration Product U-factors
2. 200: Procedure for Determining Fenestration Product Solar Heat Gain Coefficients and Visible Transmittance at Normal Incidence

1.4 SYSTEM DESCRIPTION

A. Design and Performance Requirements:

Product	Air Tested to psf	Water Tested to psf	Design Pressure (DP)	Certification Rating	Max Overall Width		Max Overall Height	
					in	mm	in	mm
Infinity Double Hung	1.57	3.76	25	LC-PG25-H	54	(1372)	85	(2159)
Infinity Double Hung	1.57	4.6	30	LC-PG30-H	48	(1219)	96	(2438)
Infinity Double Hung Picture	1.57	4.5	30	LC-PG30-FW	72	(1829)	72	(1829)
	1.57	4.5	30	LC-PG30-FW	60	(1524)	75	(1905)
	1.57	4.5	25	LC-PG25-FW	75	(1905)	75	(1905)

1.5 SUBMITTALS

A. Shop Drawings: Submit shop drawings under provision of Section 01 33 23.

B. Product Data: Submit catalog data under provision of Section 01 33 23.

B. Samples:

1. Submit corner section under provision of section 01 33 23.
2. Include glazing system, quality of construction, and specified finish.

D. Quality Control Submittals: Certificates: submit manufacturer's certification indicating compliance with specified performance and design requirement under provision of section 01 33 23.

1.6 QUALITY ASSURANCE

A. Code Requirements: consult local code for IBC [International Building Code] and IRC [International Residential Code] adoption year and pertinent revisions for information on:

1. Egress, emergency escape and rescue requirements
2. Basement window requirements
3. Windows fall prevention and/or window opening control device requirements.

1.7 DELIVERY

A. Comply with provisions of Section 01 65 00

B. Deliver in original packaging and protect from weather

1.8 STORAGE AND HANDLING

A. Store window units in an upright position in a clean and dry storage area above ground to protect from weather under provision of Section 01 66 00.

1.9 WARRANTY

A. Windows shall be warranted to be free from defects in manufacturing, materials, and workmanship for a period of ten (10) years from purchase date.
B. Insulating glass shall be warranted against visible obstruction through the glass caused by a failure of the insulating glass air seal for a period of twenty (20) years from the date of the original purchase.

PART 2 PRODUCTS

2.1 MANUFACTURED UNITS

A. Description: Factory-assembled Ultrex® Infinity Double Hung windows and related stationary units as manufactured by Infinity Windows & Doors, Fargo, North Dakota

2.2 FRAME DESCRIPTION

A. Ultrex®, a fiberglass reinforced pultrusion
B. Exterior and Interior 0.075 inch (2 mm) thick
C. Frame thickness: 31/32 inch (25 mm) head jamb, 31/32 inch (25 mm) composite side jamb, 25/32 inches (20 mm) sill, flat bottom sill with 8 degree bevel
D. Frame width: 2 7/8 inches (73mm)

2.3 SASH DESCRIPTION

A. Ultrex®, a fiberglass reinforced pultrusion. Interior 0.075 inch (2mm) thick
B. Composite sash thickness: 1-3/8 inches (35mm) overall
C. Sash exterior Ultrex®, an advanced glass fiber reinforced material, 0.075 inch (2mm) thick
D. Operable sash tilt to interior for cleaning or removal

2.4 GLAZING

A. Select quality complying with ASTM C 1036. Insulating glass SIGMA/IGCC when tested in accordance with ASTM E 2190. STC/OITC ratings are tested to the stated performance level in accordance with ASTM E 90-09.
B. Glazing Method: 11/16 inch (17 mm) Insulating glass, altitude adjusted
C. Glass Type: Low E2 with Argon Gas, (tempered where indicated on the plans)
D. Glazing Seal: Silicone bedding on interior; silicone bedding on exterior

2.5 FINISH

A. Exterior: Ultrex with a cross-head extruded acrylic organic coating system. Meets AAMA 624-10 requirements.

1. Exterior Colors: Stone White

B. Interior: Ultrex with a cross-head extruded acrylic organic coating system. Meets AAMA 624-10 and 00022716 requirements.

1. Interior Color: EverWood. Stain color to be selected during construction.

2.6 HARDWARE

A. Balance system: Coil spring block and tackle with nylon cord and fiber filled nylon clutch
B. Lock: zinc die-cast lock and keeper

1. Color: White
2. Extended sizes – two locks and keepers

C. Lift:

1. Color: White
2. Extended sizes – two lifts

D. Sash Hanger: fixed upper sash only

1. Color: White and Black

E. Factory Installed Window Opening Control Device for operating units per ASTM F2090-17: A system consisting of an acetal lever housed in an acetal shell on each stile of the top sash.

1. Available on all sizes
2. Color: White

2.7 WEATHER STRIP

A. Jamb: Foam filled bulb with flexible TPE skin, to match weather strip package
B. Parting Stop: PVC with flexible hinged wand seal to match weather strip package
C. Bottom Sash: “V” shaped profile, vinyl foam filled with flexible TPE skin to match weather strip package
D. Checkrail: PVC with flexible hinged wand seal to match weather strip package
E. Stationary Units: Continuous foam weather strip at perimeter of sash.

1. Color: White

2.8 INSECT SCREEN

A. Roll formed or extruded aluminum full screen.

1. Factory-installed (removable)

B. Screen cloth:

1. Standard screen mesh material: 18 by 16 mesh: Charcoal Fiberglass
2. WINDOW TYPES A & B (KITCHEN AREA): PROVIDE #16 GRADE MESH OR FINER PER MICHIGAN DEPT. OF AGRICULTURE

C. Frame Color: Stone White

1. Spring loaded pins

2.9 ACCESSORIES AND TRIM

A. Installation Accessories: Package of installation hardware for operable units consisting of:

1. Six #8 x 2” Torx® truss head installation screws
2. Six jamb hole plugs
3. One sash lift (two sash lifts on extended sizes)
4. Two #7 x ¾” Phillips flat head screws (for sash lift) (Four screws on extended sizes)

B. Installation Accessories: Package of installation hardware for Picture/Transom units consisting of:

1. 14 #8 x2” Torx® truss head installation screws

C. Panning Accessories (where indicated on the drawings)

1. Fiberglass reinforced ABS

a. Profile: Frame Expander
b. Color: Stone White

2. Aluminum Extrusions:

a. Coil panning (where indicated on the drawings)
b. Finish: High solids polyester
c. Color: Stone White

PART 3 EXECUTION

3.1 EXAMINATION

A. Verification of Condition: Before installation, verify openings are plumb, square and of proper dimensions as required in Section 01 71 00. Report frame defects or unsuitable conditions to the General Contractor before proceeding.
B. Acceptance of Condition: Beginning installation confirms acceptance of existing conditions.

3.2 INSTALLATION

A. Comply with Section 01 73 00.
B. Assemble and install window/door unit(s) according to manufacturer’s instruction and reviewed shop drawing.
C. Install sealant and related backing materials at perimeter of unit or assembly in accordance with Section 07 92 00 Joint Sealants.
D. Install accessory items as required.

1. To achieve certified performance, all full frame windows must be professionally installed with either jamb extension, sheet rock receiver or interior frame cover.

3.3 FIELD QUALITY CONTROL

A. Remove visible labels and adhesive residue according to manufacturer’s instruction.
B. Unless otherwise specified, air leakage resistance tests shall be conducted at a uniform static pressure of 75 Pa (~1.57 psf). The maximum allowable rate of air leakage shall not exceed 2.3 L/sm2 (~0.45 cfm/ft2).
C. Unless otherwise specified, water penetration resistance testing shall be conducted per AAMA 502 and ASTM E1105 at 2/3 of the fenestration products design pressure (DP) rating using “Procedure B” – cyclic static air pressure difference. Water penetration shall be defined in accordance with the test method(s) applied.

3.4 CLEANING

A. Remove visible labels and adhesive residue according to manufacturer's instruction.
B. Leave windows and glass in a clean condition. Final cleaning as required in Section 01 74 00.

3.5 PROTECTING INSTALLED CONSTRUCTION

A. Comply with Section 07 76 00.
B. Protect windows from damage by chemicals, solvents, paint or other construction operations that may cause damage.

END OF SECTION

SECTION 088000 - GLAZING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Glass for windows.
2. Glazing sealants and accessories.

B. Related Requirements:

1. Section 085113 Aluminum Windows

1.3 COORDINATION

A. Coordinate glazing channel dimensions to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Glass Samples: For each type of glass product other than clear monolithic vision glass; 12 inches square.

1. Tinted glass.
2. Coated glass.
3. Laminated glass.
4. Tempered glass
5. Insulating glass.

C. Glazing Schedule: List glass types and thicknesses for each size opening and location. Use same designations indicated on Drawings.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect glazing materials according to manufacturer's written instructions. Prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.

B. Comply with insulating-glass manufacturer's written instructions for venting and sealing units to avoid hermetic seal ruptures due to altitude change.

1.6 FIELD CONDITIONS

A. Environmental Limitations: Do not proceed with glazing when ambient and substrate temperature conditions are outside limits permitted by glazing material manufacturers and when glazing channel substrates are wet from rain, frost, condensation, or other causes.

1. Do not install glazing sealants when ambient and substrate temperature conditions are outside limits permitted by sealant manufacturer or are below 40 deg F.

1.7 WARRANTY

A. Manufacturer's Special Warranty for Coated-Glass Products: Manufacturer agrees to replace coated-glass units that deteriorate within specified warranty period. Deterioration of coated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in coating.

1. Warranty Period: 10 years from date of Substantial Completion.

B. Manufacturer's Special Warranty for Laminated Glass: Manufacturer agrees to replace laminated-glass units that deteriorate within specified warranty period. Deterioration of laminated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning laminated glass contrary to manufacturer's written instructions. Defects include edge separation, delamination materially obstructing vision through glass, and blemishes exceeding those allowed by referenced laminated-glass standard.

1. Warranty Period: 10 years from date of Substantial Completion.

C. Manufacturer's Special Warranty for Insulating Glass: Manufacturer agrees to replace insulating-glass units that deteriorate within specified warranty period. Deterioration of insulating glass is defined as failure of hermetic seal under normal use that is not attributed to glass breakage or to maintaining and cleaning insulating glass contrary to manufacturer's written instructions. Evidence of failure is the obstruction of vision by dust, moisture, or film on interior surfaces of glass.

1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Guardian Glass; SunGuard.
2. Oldcastle BuildingEnvelope™.
3. Pilkington North America.
4. Viracon, Inc.
5. Vitro Architectural Glass.

B. Source Limitations for Glass: Obtain from single source from single manufacturer for each glass type.

1. Obtain tinted glass from single source from single manufacturer.
2. Obtain reflective-coated glass from single source from single manufacturer.

C. Source Limitations for Glazing Accessories: Obtain from single source from single manufacturer for each product and installation method.

2.2 PERFORMANCE REQUIREMENTS

A. General: Installed glazing systems shall withstand normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, or installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.

B. Thermal and Optical Performance Properties: Provide glass with performance properties specified, as indicated in manufacturer's published test data, based on procedures indicated below:

1. For monolithic-glass lites, properties are based on units with lites 6 mm thick.
2. For laminated-glass lites, properties are based on products of construction indicated.
3. For insulating-glass units, properties are based on units of thickness indicated for overall unit and for each lite.
4. U-Factors: Center-of-glazing values, according to NFRC 100 and based on LBL's WINDOW 5.2 computer program, expressed as Btu/sq. ft. x h x deg F.
5. Solar Heat-Gain Coefficient and Visible Transmittance: Center-of-glazing values, according to NFRC 200 and based on LBL's WINDOW 5.2 computer program.
6. Visible Reflectance: Center-of-glazing values, according to NFRC 300.

2.3 GLASS PRODUCTS, GENERAL

A. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below unless more stringent requirements are indicated. See these publications for glazing terms not otherwise defined in this Section or in referenced standards.

1. GANA Publications: "Laminated Glazing Reference Manual" and "Glazing Manual."
2. AAMA Publications: AAMA GDSG-1, "Glass Design for Sloped Glazing," and AAMA TIR A7, "Sloped Glazing Guidelines."
3. IGMA Publication for Sloped Glazing: IGMA TB-3001, "Guidelines for Sloped Glazing."
4. IGMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."

B. Safety Glazing Labeling: Where safety glazing is indicated, permanently mark glazing with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.

C. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of IGCC.

D. Thickness: Where glass thickness is indicated, it is a minimum. Provide glass that complies with performance requirements and is not less than the thickness indicated.

1. Minimum Glass Thickness for Exterior Lites: 6 mm.
2. Thickness of Tinted Glass: Provide same thickness for each tint color indicated throughout Project.

E. Strength: Where annealed float glass is indicated, provide annealed float glass, heat-strengthened float glass, or fully tempered float glass as needed to comply with "Performance Requirements" Article. Where heat-strengthened float glass is indicated, provide heat-

strengthened float glass or fully tempered float glass. Where fully tempered float glass is indicated, provide fully tempered float glass.

2.4 GLASS PRODUCTS

A. Clear Annealed Float Glass: ASTM C1036, Type I, Class 1 (clear), Quality-Q3.

B. Ultraclear Float Glass: ASTM C1036, Type I, Class I (clear), Quality-Q3; and with visible light transmission of not less than 91 percent and solar heat gain coefficient of not less than 0.87.

C. Tinted Annealed Float Glass: ASTM C1036, Type I, Class 2 (tinted), Quality-Q3.

D. Fully Tempered Float Glass: ASTM C1048, Kind FT (fully tempered), Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.

1. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed unless otherwise indicated.

E. Heat-Strengthened Float Glass: ASTM C1048, Kind HS (heat strengthened), Type I, Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.

1. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed unless otherwise indicated.

F. Reflective-Coated Vision Glass: ASTM C1376.

2.5 LAMINATED GLASS

A. Laminated Glass: ASTM C1172. Use materials that have a proven record of no tendency to bubble, discolor, or lose physical and mechanical properties after fabrication and installation.

1. Construction: Laminate glass with polyvinyl butyral interlayer to comply with interlayer manufacturer's written instructions.
2. Interlayer Thickness: Provide thickness not less than that indicated and as needed to comply with requirements.
3. Interlayer Color: Clear unless otherwise indicated.

B. Windborne-Debris-Impact-Resistant Laminated Glass: Comply with requirements specified above for laminated glass except laminate glass with one of the following to comply with interlayer manufacturer's written instructions:

1. Polyvinyl butyral interlayers reinforced with polyethylene terephthalate film.
2. Ionomeric polymer interlayer.
3. Cast-in-place and cured-transparent-resin interlayer.
4. Cast-in-place and cured-transparent-resin interlayer reinforced with polyethylene terephthalate film.

2.6 INSULATING GLASS

A. Insulating-Glass Units: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, qualified according to ASTM E2190.

1. Sealing System: Dual seal, with manufacturer's standard primary and secondary sealants.
2. Perimeter Spacer: Manufacturer's standard spacer material and construction.
3. Desiccant: Molecular sieve or silica gel, or a blend of both.

B. Basis of Design: Guardian SunGuard, SNR 43, SuperNeutral Low-E

2.7 MISCELLANEOUS GLAZING MATERIALS

A. General: Provide products of material, size, and shape complying with referenced glazing standard, with requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.

B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.

C. Setting Blocks:

1. Silicone with a Shore A durometer hardness of 85, plus or minus 5.
2. Type recommended by sealant or glass manufacturer.

D. Spacers:

1. Neoprene blocks or continuous extrusions of hardness required by glass manufacturer to maintain glass lites in place for installation indicated.
2. Type recommended by sealant or glass manufacturer.

E. Edge Blocks:

1. Silicone with a Shore A durometer hardness per manufacturer's written instructions.
2. Type recommended by sealant or glass manufacturer.

2.8 FABRICATION OF GLAZING UNITS

A. Fabricate glazing units in sizes required to fit openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing publications, to comply with system performance requirements.

1. Allow for thermal movements from ambient and surface temperature changes acting on glass framing members and glazing components.
   a. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

B. Clean-cut or flat-grind vertical edges of butt-glazed monolithic lites to produce square edges with slight chamfers at junctions of edges and faces.

C. Grind smooth and polish exposed glass edges and corners.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine framing, glazing channels, and stops, with Installer present, for compliance with the following:

1. Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.
2. Presence and functioning of weep systems.
3. Minimum required face and edge clearances.
4. Effective sealing between joints of glass-framing members.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.

B. Examine glazing units to locate exterior and interior surfaces. Label or mark units as needed so that exterior and interior surfaces are readily identifiable. Do not use materials that leave visible marks in the completed Work.

3.3 GLAZING, GENERAL

A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.

B. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass includes glass with edge damage or other imperfections that, when installed, could weaken glass, impair performance, or impair appearance.

C. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.

D. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

E. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

F. Provide spacers for glass lites where length plus width is larger than 50 inches.

1. Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.

2. Provide 1/8-inch minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.

G. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.

H. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.

I. Set glass lites with proper orientation so that coatings face exterior or interior as specified.

J. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.

K. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.

3.4 GASKET GLAZING (DRY)

A. Cut compression gaskets to lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.

B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.

C. Installation with Drive-in Wedge Gaskets: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.

D. Installation with Pressure-Glazing Stops: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket. Install dense compression gaskets and pressure-glazing stops, applying pressure uniformly to compression gaskets. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.

E. Install gaskets so they protrude past face of glazing stops.

3.5 CLEANING AND PROTECTION

A. Immediately after installation remove nonpermanent labels and clean surfaces.

B. Protect glass from contact with contaminating substances resulting from construction operations. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains.

1. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended in writing by glass manufacturer. Remove and replace glass that cannot be cleaned without damage to coatings.

C. Remove and replace glass that is damaged during construction period.

D. Wash glass on both exposed surfaces not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended in writing by glass manufacturer.

3.6 MONOLITHIC GLASS SCHEDULE

A. Glass Type: Clear fully tempered float glass.

1. Minimum Thickness: 6 mm.
2. Safety glazing required.

3.7 TEMPERED GLASS SCHEDULE

A. Glass Type: Clear heat strengthened fully tempered float glass.

1. Basis-of-Design Product: Guardian ClimaGuard.
2. Minimum Thickness of Each Glass Ply: 6 mm.
3. Safety glazing required.

3.8 LAMINATED GLASS SCHEDULE

A. Glass Type: Clear laminated glass with two plies of ultraclear fully tempered float glass.

1. Basis-of-Design Product: Guardian ClimaGuard.
2. Minimum Thickness of Each Glass Ply: 6 mm.
3. Interlayer Thickness: 0.090 inch.
4. Safety glazing required.

3.9 INSULATING GLASS SCHEDULE

A. Glass Type: Low-E-coated, tinted insulating glass. Laminated or Tempered where indicated in drawings.

1. Basis-of-Design Product: Guardian SuperNeutral Low-E SNX 62/27.
2. Overall Unit Thickness: 1 inch.
3. Minimum Thickness of Each Glass Lite: 6 mm.
4. Outdoor Lite: Tinted annealed float glass.
5. Tint Color: Gray
6. Interspace Content: Argon.
7. Indoor Lite: Clear fully tempered float glass.
8. Low-E Coating: Pyrolytic on third surface.
9. Winter Nighttime U-Factor: 0.24 maximum.
10. Summer Daytime U-Factor: 0.27maximum.
11. Visible Light Transmittance: 31 percent minimum.
12. Solar Heat Gain Coefficient0.24 maximum.

13. Safety glazing required.

3.10 MIRROR GLASS SCHEDULE

1. UltraMirror heat strengthened fully tempered float glass

END OF SECTION 088000

SECTION 092216
NON-STRUCTURAL METAL FRAMING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Non-load-bearing steel framing systems for interior partitions.
2. Suspension systems for interior ceilings and soffits.
3. Grid suspension systems for gypsum board ceilings.

B. Related Requirements:

1. Section 054000 "Cold-Formed Metal Framing" for exterior and interior load-bearing and exterior non-load-bearing wall studs; floor joists; and roof rafters and ceiling joists.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated, according to ASTM E 119 by an independent testing agency.

B. Horizontal Deflection: For composite wall assemblies, limited to 1/240 of the wall height based on horizontal loading of 5 lbf/sq. ft..

2.2 FRAMING SYSTEMS

A. Framing Members, General: Comply with ASTM C 754 for conditions indicated.

1. Steel Sheet Components: Comply with ASTM C 645 requirements for steel unless otherwise indicated.
2. Protective Coating: ASTM A 653/A 653M, G60, hot-dip galvanized unless otherwise indicated.

B. Studs and Tracks: ASTM C 645. Use either conventional steel studs and tracks or embossed, high-strength steel studs and tracks.

1. Steel Studs and Tracks:

a. <u>Manufacturers:</u> Subject to compliance with requirements, provide products by one of the following:
1) <u>ClarkDietrich.</u>
2) <u>Jaimes Industries.</u>
3) <u>SCAFCO Steel Stud Company.</u>
b. Minimum Base-Steel Thickness: As required by performance requirements for horizontal deflection.
c. Depth: As indicated on Drawings.
2. Embossed, High Strength Steel Studs and Tracks: Roll-formed and embossed with surface deformations to stiffen the framing members so that they are structurally comparable to conventional ASTM C 645 steel studs and tracks.

a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1) ClarkDietrich.
   2) MarinoWARE.
   3) MBA Building Supplies.
   4) SCAFCO Steel Stud Company.
b. Minimum Base-Steel Thickness: As required by horizontal deflection performance requirements 0.0190 inch.
c. Depth: As indicated on Drawings.

C. Slip-Type Head Joints: Where indicated, provide one of the following:

1. Deflection Track: Steel sheet top track manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.

   a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      1) ClarkDietrich.
      2) MarinoWARE.
      3) MBA Building Supplies.
      4) SCAFCO Steel Stud Company.

D. Hat-Shaped, Rigid Furring Channels: ASTM C 645.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

   a. ClarkDietrich.
   b. Jaimes Industries.
   c. MarinoWARE.
   d. MRI Steel Framing, LLC.
   e. SCAFCO Steel Stud Company.
2. Minimum Base-Steel Thickness: 0.0296 inch.
3. Depth: 1-1/2 inches.

E. Resilient Furring Channels: 1/2-inch- deep, steel sheet members designed to reduce sound transmission.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

   a. ClarkDietrich.
   b. MarinoWARE.
   c. MRI Steel Framing, LLC.
   d. SCAFCO Steel Stud Company.
2. Configuration: hat shaped.

F. Cold-Rolled Furring Channels: 0.053-inch uncoated-steel thickness, with minimum 1/2-inch-wide flanges.

1. Depth: 3/4 inch.
2. Furring Brackets: Adjustable, corrugated-edge-type steel sheet with minimum uncoated-steel thickness of 0.0329 inch.

3. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch- diameter wire, or double strand of 0.048-inch- diameter wire.

G. Z-Shaped Furring: With slotted or nonslotted web, face flange of 1-1/4 inches, wall attachment flange of 7/8 inch, minimum uncoated-steel thickness of 0.0179 inch, and depth required to fit insulation thickness indicated.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. ClarkDietrich.
b. MarinoWARE.
c. MRI Steel Framing, LLC.
d. SCAFCO Steel Stud Company.

2.3 SUSPENSION SYSTEMS

A. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch- diameter wire, or double strand of 0.048-inch- diameter wire.

B. Hanger Attachments to Concrete:

1. Power-Actuated Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

C. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.16 inch in diameter.

D. Carrying Channels (Main Runners): Cold-rolled, commercial-steel sheet with a base-steel thickness of 0.0538 inch and minimum 1/2-inch- wide flanges.

1. Depth: 1-1/2 inches.

E. Furring Channels (Furring Members):

1. Cold-Rolled Channels: 0.0538-inch uncoated-steel thickness, with minimum 1/2-inch-wide flanges, 3/4 inch deep.
2. Steel Studs and Tracks: ASTM C 645.

a. Minimum Base-Steel Thickness: 0.0269 inch.
b. Depth: As indicated on Drawings 1-5/8 inches 3-5/8 inches.

3. Embossed, High-Strength Steel Studs and Tracks: ASTM C 645.

a. Minimum Base-Steel Thickness: 0.0190 inch.
b. Depth: 1-5/8 inches 3-5/8 inches.

4. Hat-Shaped, Rigid Furring Channels: ASTM C 645, 7/8 inch deep.

a. Minimum Base-Steel Thickness: 0.0296 inch.

5. Resilient Furring Channels: 1/2-inch- deep members designed to reduce sound transmission.

a. Configuration: hat shaped.

F. Grid Suspension System for Gypsum Board Ceilings: ASTM C 645, direct-hung system composed of main beams and cross-furring members that interlock.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

   a. Armstrong World Industries, Inc.
   b. USG Corporation.

2.4 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards.

1. Fasteners for Steel Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Suspended Assemblies: Coordinate installation of suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive hangers at spacing required to support the Work and that hangers will develop their full strength.

3.3 INSTALLATION, GENERAL

A. Installation Standard: ASTM C 754.

1. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.

B. Install framing and accessories plumb, square, and true to line, with connections securely fastened.

C. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.

D. Install bracing at terminations in assemblies.

E. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.4 INSTALLING FRAMED ASSEMBLIES

A. Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.

1. Single-Layer Application: As required by horizontal deflection performance requirements 16 inches o.c. unless otherwise indicated.
2. Tile Backing Panels: 16 inches o.c. unless otherwise indicated.

B. Install studs so flanges within framing system point in same direction.

C. Install tracks at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts that penetrate partitions above ceiling.

1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install track section (for cripple studs) at head and secure to jamb studs.
   a. Install two studs at each jamb unless otherwise indicated.
   b. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.
3. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
4. Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure.
   a. Firestop Track: Where indicated, install to maintain continuity of fire-resistance-rated assembly indicated.

D. Direct Furring:

1. Screw to wood framing.
2. Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c.

E. Z-Shaped Furring Members:

1. Erect insulation, specified in Section 072100 "Thermal Insulation," vertically and hold in place with Z-shaped furring members spaced 24 inches o.c.
2. Except at exterior corners, securely attach narrow flanges of furring members to wall with concrete stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c.
3. At exterior corners, attach wide flange of furring members to wall with short flange extending beyond corner; on adjacent wall surface, screw-attach short flange of furring channel to web of attached channel. At interior corners, space second member no more than 12 inches from corner and cut insulation to fit.

F. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch from the plane formed by faces of adjacent framing.

3.5 INSTALLING CEILING SUSPENSION SYSTEMS

A. Install suspension system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.

1. Hangers: 48 inches o.c.
2. Carrying Channels (Main Runners): 48 inches o.c.

3. Furring Channels (Furring Members): 24 inches o.c.

B. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.

C. Suspend hangers from building structure as follows:

1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.

   a. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.

   a. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced installation standards.
3. Wire Hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye screws, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause hangers to deteriorate or otherwise fail.
4. Flat Hangers: Secure to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices and fasteners that are secure and appropriate for structure and hanger, and in a manner that will not cause hangers to deteriorate or otherwise fail.
5. Do not attach hangers to steel roof deck.
6. Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
7. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
8. Do not connect or suspend steel framing from ducts, pipes, or conduit.

D. Fire-Resistance-Rated Assemblies: Wire tie furring channels to supports.

E. Grid Suspension Systems: Attach perimeter wall track or angle where grid suspension systems meet vertical surfaces. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall track.

F. Installation Tolerances: Install suspension systems that are level to within 1/8 inch in 12 feet measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

END OF SECTION

SECTION 092900
GYPSUM BOARD

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes: Interior gypsum board.

B. Related Requirements:

1. Section 092216 "Non-Structural Metal Framing" for non-structural steel framing and suspension systems that support gypsum board panels.

1.3 SUBMITTALS

A. Product Data: For each type of product.

1.4 DELIVERY, STORAGE AND HANDLING

A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.5 FIELD CONDITIONS

A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written instructions, whichever are more stringent.

B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.

C. Do not install panels that are wet, moisture damaged, and mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.

2.2 INTERIOR GYPSUM BOARD

A. Gypsum Wallboard: ASTM C 1396/C 1396M.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

    a. CertainTeed Corporation.
    b. Continental Building Products, LLC.
    c. Georgia-Pacific Gypsum LLC.
    d. National Gypsum Company.
    e. USG Corporation.
2. Thickness: 5/8 inch
3. Long Edges: Tapered and featured (rounded or beveled) for prefilling.

B. Gypsum Board, Type X: ASTM C 1396/C 1396M.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

    a. CertainTeed Corporation.
    b. Continental Building Products, LLC.
    c. Georgia-Pacific Gypsum LLC.
    d. National Gypsum Company.
    e. USG Corporation.
2. Thickness: 5/8 inch.
3. Long Edges: Tapered and featured (rounded or beveled) for prefilling.

C. Gypsum Ceiling Board: ASTM C 1396/C 1396M.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

    a. CertainTeed Corporation.
    b. Continental Building Products, LLC.
    c. Georgia-Pacific Gypsum LLC.
    d. National Gypsum Company.
    e. USG Corporation.
2. Thickness: 5/8 inch
3. Long Edges: Tapered.

D. Impact-Resistant Gypsum Board: ASTM C 1396/C 1396M gypsum board, tested according to ASTM C 1629/C 1629M.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

    a. CertainTeed Corporation.
    b. Continental Building Products, LLC.
    c. Georgia-Pacific Gypsum LLC.
    d. National Gypsum Company.
    e. USG Corporation.
2. Core: 5/8-inch, Type X.
3. Surface Abrasion: ASTM C 1629/C 1629M, meets or exceeds Level 3 requirements.
4. Indentation: ASTM C 1629/C 1629M, meets or exceeds Level 3 requirements.
5. Soft-Body Impact: ASTM C 1629/C 1629M, meets or exceeds Level 3 requirements.
6. Hard-Body Impact: ASTM C 1629/C 1629M, meets or exceeds Level 3 requirements according to test in Annex A1.
7. Long Edges: Tapered.

8. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

2.3 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.

1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet.
2. Shapes:

a. Cornerbead.
b. LC-Bead: J-shaped; exposed long flange receives joint compound.
c. L-Bead: L-shaped; exposed long flange receives joint compound.
d. U-Bead: J-shaped; exposed short flange does not receive joint compound.
e. Expansion (control) joint.

2.4 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape:

1. Interior Gypsum Board: Paper.
2. Tile Backing Panels: As recommended by panel manufacturer.

C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.

a. Use setting-type compound for installing paper-faced metal trim accessories.
3. Fill Coat: For second coat, use setting-type, sandable topping compound.
4. Finish Coat: For third coat, use setting-type, sandable topping compound.
5. Skim Coat: For final coat of Level 5 finish, use setting-type, sandable topping compound high-build interior coating product designed for application by airless sprayer and to be used instead of skim coat to produce Level 5 finish.

D. Joint Compound for Tile Backing Panels:

1. Cementitious Backer Units: As recommended by backer unit manufacturer.

2.5 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.

B. Steel Drill Screws: ASTM C 1002 unless otherwise indicated.

1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.

C. Sound-Attenuation Blankets: 3 1/2", ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.

1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates including welded hollow-metal frames and support framing, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 APPLYING AND FINISHING PANELS, GENERAL

A. Comply with ASTM C 840.

B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.

C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.

D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.

E. Form control and expansion joints with space between edges of adjoining gypsum panels.

F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.

1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
2. Fit gypsum panels around ducts, pipes, and conduits.
3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- wide joints to install sealant.

G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments. Provide 1/4- to 1/2-inch- wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

I. Install sound attenuation blankets before installing gypsum panels unless blankets are readily installed after panels have been installed on one side.

3.3 APPLYING INTERIOR GYPSUM BOARD

A. Install interior gypsum board in the following locations:

1. Wallboard Type: As indicated on Drawings.
2. Type X: Where required for fire-resistance-rated assembly.
3. Ceiling Type: As indicated on Drawings.
4. Impact-Resistant Type: As indicated on Drawings.
5. Glass-Mat Interior Type: As indicated on Drawings.

B. Single-Layer Application:

1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated.
2. On partitions/walls, apply gypsum panels horizontally (perpendicular to framing) unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.

   a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
   b. At stairwells and other high walls, install panels horizontally unless otherwise indicated or required by fire-resistance-rated assembly.
3. On Z-shaped furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
4. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

C. Multilayer Application:

1. On ceilings, apply gypsum board indicated for base layers before applying base layers on walls/partitions; apply face layers in same sequence. Apply base layers at right angles to framing members and offset face-layer joints one framing member, 16 inches minimum, from parallel base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly.
2. On partitions/walls, apply gypsum board indicated for base layers and face layers vertically (parallel to framing) with joints of base layers located over stud or furring member and face-layer joints offset at least one stud or furring member with base-layer joints unless otherwise indicated or required by fire-resistance-rated assembly. Stagger joints on opposite sides of partitions.
3. On Z-shaped furring members, apply base layer vertically (parallel to framing) and face layer either vertically (parallel to framing) or horizontally (perpendicular to framing) with vertical joints offset at least one furring member. Locate edge joints of base layer over furring members.
4. Fastening Methods: Fasten base layers with screws; fasten face layers with adhesive and supplementary fasteners.

3.4 INSTALLING TRIM ACCESSORIES

A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

B. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect for visual effect.

C. Interior Trim: Install in the following locations:

1. Cornerbead: Use at outside corners.
2. LC-Bead: Use at exposed panel edges.
3. U-Bead: Use at exposed panel edges.

3.5 FINISHING GYPSUM BOARD

A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.

B. Prefill open joints, rounded or beveled edges, and damaged surface areas.

C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.

D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:

1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
2. Level 2: Panels that are substrate for tile.
3. Level 4: At panel surfaces that will be exposed to view and receive a flat paint unless otherwise indicated.
4. Level 4: At panel surfaces that will be exposed to view and receive a paint finish other than flat unless otherwise indicated.

a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."

3.6 PROTECTION

A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.

B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

C. Remove and replace panels that are wet, moisture damaged, and mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 092900

SECTION 099123 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes surface preparation and the application of paint systems on the following interior substrates:

1. Concrete.
2. Clay masonry.
3. Concrete masonry units (CMUs).
4. Steel and iron.
5. Galvanized metal.
6. Gypsum board.

B. Related Requirements:

1. Section 051200 "Structural Steel Framing" for shop priming structural steel.
2. Section 055000 "Metal Fabrications" for shop priming metal fabrications.

1.3 DEFINITIONS

A. MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, in accordance with ASTM D523.

B. MPI Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, in accordance with ASTM D523.

C. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, in accordance with ASTM D523.

D. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, in accordance with ASTM D523.

E. MPI Gloss Level 5: 35 to 70 units at 60 degrees, in accordance with ASTM D523.

F. MPI Gloss Level 6: 70 to 85 units at 60 degrees, in accordance with ASTM D523.

G. MPI Gloss Level 7: More than 85 units at 60 degrees, in accordance with ASTM D523.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

1. Include Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
2. Indicate VOC content.

B. Samples for Initial Selection: For each type of topcoat product.

C. Product List: Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Paint: 5 percent, but not less than 1 gal. of each material and color applied.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

1.7 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.

B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product: Subject to compliance with requirements, provide Sherwin-Williams products as designated in the Finish Schedule or comparable products by one of the following:

1. Behr Process Corporation.
2. Benjamin Moore Company.
3. PPG Paints

B. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to products listed in the Finish Schedule for the paint category indicated.

2.2 PAINT, GENERAL

A. Material Compatibility:

1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.

B. Colors: As selected by Architect from manufacturer's full range.

2.3 SOURCE QUALITY CONTROL

A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure:

1. Owner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
2. Testing agency will perform tests for compliance with product requirements.
3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Concrete: 12 percent.
2. Masonry (Clay and CMUs): 12 percent.
3. Gypsum Board: 12 percent.

C. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.

D. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.

E. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.

E. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.

F. Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods recommended in writing by paint manufacturer.

G. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

H. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

3.3 APPLICATION

A. Apply paints in accordance with manufacturer's written instructions and to recommendations in "MPI Manual."

1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
5. Primers specified in painting schedule may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

E. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:

1. Paint the following work where exposed in equipment rooms:
   a. Equipment, including panelboards.
   b. Uninsulated metal piping.
   c. Pipe hangers and supports.
   d. Metal conduit.

2. Paint the following work where exposed in occupied spaces:
   a. Equipment, including panelboards.
   b. Uninsulated metal piping.
   c. Pipe hangers and supports.
   d. Metal conduit.

3. Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

3.4 FIELD QUALITY CONTROL

A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.

1. Contractor shall touch up and restore painted surfaces damaged by testing.
2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written instructions, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written instructions.

3.5 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 INTERIOR PAINTING SCHEDULE

A. Concrete Substrates, Nontraffic Surfaces:

1. Latex System:
   a. Prime Coat: Latex, interior, matching topcoat.
      1) Sherwin-Williams: Loxon Concrete and Masonry Primer, A24 Series (5.3 – 8.0 mil wet, 2.1-3.2 mil dry)
   b. Intermediate Coat: Latex, interior, matching topcoat.
   c. Topcoat: Latex, interior (MPI Gloss Level 2).
      1) Sherwin-Williams: ProMar 200 Zero VOC Interior Latex Eg-shel, B20 Series (4 mil wet, 1.7 mil dry)

2. High-Performance Architectural Latex System:

   a. Prime Coat: Primer, alkali resistant, water based.
      1) Sherwin-Williams: Loxon Concrete and Masonry Primer, A24 Series (5.3 – 8.0 mil wet, 2.1-3.2 mil dry)
   b. Intermediate Coat: Latex, interior, high performance architectural, matching topcoat.
   c. Topcoat: Latex, interior, high performance architectural (MPI Gloss Level 2).
      1) Sherwin-Williams: Pro Industrial Pre Catalyzed Waterbased Epoxy Eg-shel, K45 Series

B. CMU Substrates:

1. Latex System:

   a. Block Filler: Block filler, latex, interior/exterior.
      1) Sherwin-Williams: PrepRite Block Filler, B25 Series (16 mil wet, 7.7 mil dry)
   b. Intermediate Coat: Latex, interior, matching topcoat.
   c. Topcoat: Latex, interior (MPI Gloss Level 2).
      1) Sherwin-Williams: ProMar 200 Zero VOC Interior Latex Eg-shel, B20 Series (4 mil wet, 1.7 mil dry)

2. High-Performance Architectural Latex System:

   a. Prime Coat: Primer, alkali resistant, water based.
      1) Sherwin-Williams: PrepRite Block Filler, B25 Series (16 mil wet, 7.7 mil dry)
   b. Intermediate Coat: Latex, interior, high performance architectural, matching topcoat.
   c. Topcoat: Latex, interior, high performance architectural (MPI Gloss Level 2).
      1) Sherwin-Williams: Pro Industrial Pre Catalyzed Waterbased Epoxy Eg-shel, K45 Series

C. Steel Substrates:

1. Latex over Shop-Applied Quick-Drying Shop Primer System:

   a. Prime Coat: Primer, rust inhibitive, metal.

1) Sherwin-Williams: Pro Industrial Pro Cryl Universal Primer, B66 Series (5-10 mil wet, 1.8-3.6 mil dry)

b. Intermediate Coat: Latex, interior, matching topcoat.

c. Topcoat: Latex, interior (MPI Gloss Level 2).

1) Sherwin-Williams: Pro Industrial Acrylic Eg-Shel, B66 Series (6-12 mil wet, 2.1-4.2 mil dry)

2. Acrylic Dry-Fall System:

a. Prime Coat: Primer, quick dry.

1) Sherwin-Williams: Waterborne Acrylic Dryfall, B42 Series (6-9 mil wet, 1.5-2.3 mil dry)

b. Topcoat: Dry fall, flat.

1) Sherwin-Williams: Waterborne Acrylic Dryfall, B42 Series (6-9 mil wet, 1.5-2.3 mil dry)

D. Galvanized-Metal Substrates:

1. Latex System:

a. Prime Coat: Primer, galvanized, cementitious.

1) Sherwin-Williams: Pro Industrial Pro Cryl Universal Primer, B66 Series (5-10 mil wet, 1.8-3.6 mil dry)

b. Intermediate Coat: Latex, interior, matching topcoat.

c. Topcoat: Latex, interior (MPI Gloss Level 2).

1) Sherwin-Williams: Pro Industrial Acrylic Eg-Shel, B66 Series (6-12 mil wet, 2.1-4.2 mil dry)

E. Gypsum Board Substrates:

1. Latex over Latex Sealer System:

a. Prime Coat: Primer sealer, latex, interior.

1) Sherwin-Williams: ProMar 200 Zero VOC Interior Latex Primer, B28 Series (4 mil wet, 1.0 mil dry)

b. Intermediate Coat: Latex, interior, matching topcoat.

c. Topcoat: Latex, interior (MPI Gloss Level 2).

1) Sherwin-Williams: ProMar 200 Zero VOC Interior Latex Eg-shel, B20 Series (4 mil wet, 1.7 mil dry)

END OF SECTION 099123

SECTION 102623
PALLADIUM 3D WALL PANEL SYSTEM

PART 1 – GENERAL

1.1 SUMMARY

A. Wall Panel system for wall protection and decoration

1.2 SECTION INCLUDES

A. Palladium® Full Height Wall Panel System
B. Palladium® Partial Height Wall Panel System
C. Palladium® Wall Panel System with Vertical Joints Using Color Matched Caulk

1.3 REFERENCES

A. American Society for Testing and Materials (ASTM)
B. National Building Code of Canada (NBC)
C. National Fire Protection Association (NFPA)
D. Society of Automotive Engineers (SAE)
E. Underwriters Laboratory (UL)
F. Underwriters Laboratory of Canada (ULC)
G. Uniform Building Code (UBC)

1.4 SYSTEM DESCRIPTION

A. Performance Requirements: Provide rigid vinyl sheet systems that conform to the following requirements of regulatory agencies and the quality control of IPC Door and Wall Protection Systems, InPro Corporation.

1. Fire Performance Characteristics: Provide UL Classified IPC Rigid Vinyl Sheet conforming with the NFPA Class A fire rating. Surface burning characteristics as determined by UL-723 (ASTM E-84), for IPC Rigid Vinyl Sheet installed with 3M Fastbond 30, InPro Bond Adhesive, or Formulated Solutions, LLC “XT-2000+" Adhesive shall be a maximum flame spread of 20 and a maximum smoke developed of 350 for .060" (1.5mm) thick material. Provide ULC (Canada) listed IPC Rigid Vinyl Sheet conforming to the requirements of the National Building Code of Canada 2010, Subsection 3.1.13. Surface burning characteristics, as determined by CAN/ULC-S102.2, shall be flame spread of 15 and smoke developed of 30.
2. Fire Performance Characteristics: Provide UL Classified Palladium 3D Boards conforming with the NFPA Class A fire rating. Surface burning characteristics as determined by ASTM E-84 shall be flame spread of 25 and smoke developed of 400.
3. Self Extinguishing: Provide rigid vinyl sheet with a CC1 classification, as tested in accordance with the procedures specified in ASTM D-635-74, Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position, as referenced in UBC 52-4- 1988.
4. Provide sheet materials that have been tested and results filed in compliance with article 15, part 1120 of the New York State uniform fire prevention and building code. DOS # 09960-930.504.4001.

5. Impact Strength: Provide IPC Rigid Vinyl Sheet that has an Impact Strength of 30.4 ft-lbs/ inch of thickness as tested in accordance with the procedures specified in ASTM D-256-90b, Impact Resistance of Plastics.
6. Chemical and Stain Resistance: Provide rigid vinyl sheet that show resistance to stain when tested in accordance with applicable provisions of ASTM D-543.
7. Fungal and Bacterial Resistance: Provide rigid vinyl that does not support fungal or bacterial growth as tested in accordance with ASTM G-21 and ASTM G-22.
8. Color Consistency: Provide components matched in accordance with SAE J-1545 - (Delta E) with a color difference no greater than 1.0 units using CIE Lab, CIE CMC, CIE LCh, Hunter Lab or similar color space scale systems.

1.5 SUBMITTALS

A. Product Data: Manufacturer's printed product data for each type of IPC Rigid Vinyl Sheet specified.
B. Detail Drawings: Mounting details with the appropriate adhesives for specific project substrates.
C. Samples: Verification samples of IPC Rigid Vinyl Sheet, 8" (203mm) square, of each type and color indicated.
D. Manufacturer's Installation Instruction: Printed installation instructions for IPC Rigid Vinyl Sheet.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in unopened factory packaging to the jobsite
B. Inspect materials at delivery to assure that specified products have been received.
C. Store in original packaging in a climate controlled location away from direct sunlight.

1.7 PROJECT CONDITIONS

A. Environmental Requirements: Products must be installed in an interior climate controlled environment.

1.8 WARRANTY

A. Standard IPC Limited Lifetime Warranty against material and manufacturing defects.

PART 2 – PRODUCTS

2.1 MANUFACTURER

A. Acceptable Manufacturer: IPC Door and Wall Protection Systems, InPro Corporation, PO Box 406 Muskego, WI 53150 USA;
Telephone: 800.222.5556, Fax: 888.715.8407, www.inprocorp.com
B. Substitutions: Not permitted
C. Provide all IPC Rigid Vinyl Sheet and wall protection from a single source.

2.2 MANUFACTURED UNITS

A. Rigid Vinyl Sheet – NOT USED

1. IPC Rigid Vinyl Sheet Options
Item # Dimensions Thickness
305 3'x8' (.91m x 2.44m) .040" = 3/64" (1mm), available

306 3'x8' (.91m x 2.44m) .060" = 1/16" (1.5mm), available
405 4'x8' (1.22m x 2.44m) .040" = 3/64" (1mm), standard
406 4'x8' (1.22m x 2.44m) .060" = 1/16" (1.5mm), standard
410 4'x8' (1.22m x 2.44m) .080" = 5/64" (2mm), available

B. Moldings

1. Palladium 3D Boards: PROVIDE 3” Vertical Board for WINDOW TRIM/CASING, Color: Designer White0101

a. Description, Thickness, Width, Length

OPTIONS: Horizontal Board –3”, 4”, 6” or 8” wide, 96” long.
Horizontal Top Cap Board – 3/8” thick, 2”, 3”, 4”, 6” or 8” wide, 96” long.
Vertical Board – 3/8” thick, 2”, 3”, 4”, 6” or 8” wide, 96” long.
Inside Corners Partial Height – 3/8” thick, 2”, 3”, 4”, 6” or 8” wide, 96” long, 90° and 135°.
Inside Corners Full Height – 5/8” thick, 2”, 3”, 4”, 6” or 8” wide, 96” long, 90° and 135°.
Outside Corners – 3/8” thick, 2”, 3”, 4”, 6” or 8” wide, 96” long, 90° and 135°.
Outside Corners Full Height – 5/8” thick, 2”, 3”, 4”, 6” or 8” wide, 96” long, 90° and 135°.
Top/Base Shoe, 5/8” thick x 2” wide, 96” long.
Top/Base Shoe #2, ½”thick x 2” wide, 96” long

2.3 MATERIALS

A. Vinyl: IPC Rigid Sheet shall be manufactured from chemical and stain resistant polyvinyl chloride with the addition of impact modifiers. No plasticizers shall be added (plasticizers may aid in bacterial growth).

2.4 MOLDING

A. Palladium 3d Boards: 3D boards shall be made from .040” IPC Rigid Sheet factory bonded to MDF Board. MDF board shall have No Added Urea Formaldehyde.

2.5 FINISHES

A. Color or pattern of IPC Sheet to be selected by the architect from the IPC Sheet finish selection. Surface shall have a velvet texture.
B. Color or pattern of Palladium 3D Wall Boards to be selected by the architect from the IPC finish selection. Surface shall have a velvet texture. Back of 3D molding shall be black melamine

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions in which the Palladium 3D Wall Panels will be installed.

1. Complete all finishing operations, including painting, before beginning installation of rigid vinyl sheet materials.

B. Wall surface shall be dry and free from dirt, grease and loose paint.

3.2 PREPARATION

A. General: Prior to installation, clean substrate to remove dust, debris and loose particles.

3.3 INSTALLATION

A. General: Locate the Palladium 3D Wall Panel System as indicated on the approved detail drawing for the appropriate substrate and in compliance with the IPC installation instructions. Install level and plumb at the height indicated on the drawings.

3.4 CLEANING

A. At completion of the installation, clean surfaces in accordance with the IPC clean-up and maintenance instructions.

END OF SECTION

SECTION 123661.16 - SOLID SURFACING COUNTERTOPS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Solid surface material countertops.
2. Solid surface material backsplashes.
3. Solid surface material end splashes.

1.2 ACTION SUBMITTALS

A. Product Data: For countertop materials.

B. Shop Drawings: For countertops. Show materials, finishes, edge and backsplash profiles, methods of joining, and cutouts for plumbing fixtures.

C. Samples: For each type of material exposed to view.

PART 2 - PRODUCTS

2.1 SOLID SURFACE COUNTERTOP AND WINDOW SILL MATERIALS

Manufacturers: Subject to compliance with requirements, provide the product below from one the following:

a. Wilsonart LLC, **Jovian 9211CM**

b. Durasein, **Boardwalk DM5003**

A. Solid Surface Countertop Material: Homogeneous-filled plastic resin complying with ICPA SS-1.

2. Type: Provide Standard type unless Special Purpose type is indicated.

Colors and Patterns:

B. Solid Surface Window Sill material.

1. ½” thickness w/ satin finish.
   a. Color/Pattern: **(Above)**

C. Particleboard: ANSI A208.1, Grade M-2-Exterior Glue.

D. Plywood: Exterior softwood plywood complying with DOC PS 1, Grade C-C Plugged, touch sanded.

2.2 COUNTERTOP FABRICATION – NOT USED

A. Fabricate countertops according to solid surface material manufacturer's written instructions and to the AWI/AWMAC/WI's "Architectural Woodwork Standards."

1. Grade: Premium.

B. Countertops: 1/2-inch- thick, solid surface material with ½” Top and Bottom Round Over edge finish at Office Desk and 1/8” Round Over Top at toilet rooms.

C. Backsplashes: 1/2-inch- thick, solid surface material. Beveled at toilet rooms.

D. Joints: Fabricate countertops without joints.

E. Provide cutouts/holes where indicated by District or shown on drawings. Minimum 4 at Office Desk.

F. Cutouts and Holes:

1. Undercounter Plumbing Fixtures: Make cutouts for fixtures [in shop] using template or pattern furnished by fixture manufacturer. Form cut outs to smooth, even curves.

a. Provide vertical edges, slightly eased at juncture of cutout edges with top and bottom surfaces of countertop.

2. Counter-Mounted Plumbing Fixtures: Prepare countertops in shop for field cutting openings for counter-mounted fixtures. Mark tops for cutouts and drill holes at corners of cutout locations. Make corner holes of largest radius practical.

3. Fittings: Drill countertops in shop for plumbing fittings, undercounter soap dispensers, and similar items.

4. Provide cutouts/holes where indicated by District or shown on drawings. Minimum three (3) 2” grommets shall be cut at Office Desk where indicated by Architect or Owner. Provide stainless steel grommet cap and sleeve.

2.3 INSTALLATION MATERIALS

A. Adhesive: Product recommended by solid surface material manufacturer.

B. Sealant for Countertops: Comply with applicable requirements in Section 079200 "Joint Sealants."

PART 3 - EXECUTION

3.1 INSTALLATION

A. Fasten countertops by screwing through corner blocks of base units into underside of countertop. Predrill holes for screws as recommended by manufacturer.

B. Install backsplashes and end splashes by adhering to wall and countertops with adhesive.

C. Complete cutouts not finished in shop. Mask areas of countertops adjacent to cutouts to prevent damage while cutting. Make cutouts to accurately fit items to be installed, and at right angles to finished surfaces unless beveling is required for clearance. Ease edges slightly to prevent snipping.

D. Apply sealant to gaps at walls; comply with Section 079200 "Joint Sealants."

END OF SECTION 123661.16