

Troy School District
Barnard, Bemis, Hill, and IAE
Exterior Door and Window
Upgrades
Troy , Michigan

9932
11-05-2021

**SECTION 000101
PROJECT TITLE PAGE**

**PROJECT MANUAL
FOR
TROY SCHOOL DISTRICT
BARNARD, BEMIS, HILL, AND IAE EXTERIOR DOOR AND WINDOW UPGRADES
BID PACKAGE # 33
SEALED BID # 9932**



Barton Malow

BUILDERS

A.

**TROY SCHOOL DISTRICT
1140 RANKIN DR,
TROY , MICHIGAN 48083**

DATE:11-05-2021

A.

PREPARED BY:

BARTON MALOW BUILDERS



A.

END OF SECTION

**SECTION 000102
PROJECT INFORMATION**

PART 1 GENERAL

1.01 PROJECT IDENTIFICATION

- A. Project: Barnard, Bemis, Hill, and IAE Exterior Door and Window Upgrades
- B. Bid Package Number: 33
- C. Sealed Bid Number: 9932
- D. Located at: 1140 Rankin Dr,
- E. Troy, Michigan48083
- F. Owner: Troy School District
- G. Owner's Project Number: 9932
- H. 1140 Rankin Dr,
- I. Troy, MI 48083
- J. Construction Manager: Barton Malow Builders
- K. Barton Malow Builders Project Number: 140077
- L. 26500 American Drive
- M. Southfield, Mi 48034
- N. (586) 651-2658
- O. Architect: TMP Architecture, Inc
- P. Architect's Project Number: 13157G, 13158E, 13164B, & 13175G
 - 1. 191 W Square Lake Rd
 - 1. Bloomfield Hills, MI 48302
 - 1. (248) 338-4561
- Q. The Troy School District , hereinafter referred to as Owner:
- R. Owner's Project Manager: Lecole Planners LLC
 - 1. Address: 145 N Center St B
 - 2. City, State, Zip: Northville, MI 48167
 - 3. Phone/Fax: (248) 921-3929
 - 4. E-mail: lecoleplanners@gmail.com

1.02 NOTICE TO PROSPECTIVE DESIGN-BUILDERS

- A. These documents constitute an invitation to prospective Design-Builders to submit qualifications and proposals for the design and construction of the project described below.

1.03 PROJECT DESCRIPTION

- A. Summary Project Description: Exterior door and window replacements at Barnard, Bemis, and Hill Elementary Schools and International Academy East .
- B. Contract Scope: Construction, demolition, and renovation.
- C. Contract Terms: Lump sum (fixed price, stipulated sum).

1.04 PROJECT CONSULTANTS

- A. The Architect and Engineer, hereinafter referred to as Architect/Engineer: TMP Architecture, Inc.
 - 1. Address: 191 W Square Lake Rd
 - 2. City, State, Zip: Bloomfield Hills, MI 48302
 - 3. Phone/Fax: (248) 338-4561

1.05 PROCUREMENT TIMETABLE

- A. RFP Documents Available:
<https://app.buildingconnected.com/public/55a1292ff1a96708004a19dc>.
- B. Pre-Construction Meeting: 11-10-2021 at 10:00 AM .
- C. Last Request for Information Due: 7 days prior to due date of proposals.
- D. Proposal Due Date: 11-23-2021, before 2 PM local time.
- E. Proposal Opening: Same day, 2 PM local time.
- F. Post-Bid Interviews: 11-23-2021.
- G. Notice of Award: 12-14-2021
- H. Proposals May Not Be Withdrawn Until: 90 days after due date.
- I. Desired Construction Start: Not later than 06-20-2022.
- J. Desired Substantial Completion Date: Not later than 06-14-2022.
- K. Completion date is critical due to requirements of Owner's operations.
- L. The Owner reserves the right to change the schedule or terminate the entire procurement process at any time.

1.06 PROCUREMENT DOCUMENTS

- A. Availability of Documents: Complete sets of procurement documents may be viewed & downloaded via Building Connected.
- B. Documents may be viewed at:
<https://app.buildingconnected.com/public/55a1292ff1a96708004a19dc>
- C. Documents are on display at the offices of the following construction plan rooms:
 - 1. Building Connected and Barton Malow Plan Room

1.07 BID SECURITY

- A. Bids shall be accompanied by a security deposit as follows:
 - 1. Bid Bond of a sum no less than 5 percent of the Bid Amount on AIA A310 Bid Bond Form.
 - 2. Certified check in the amount of a sum no less than 5 percent of the Bid Amount

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

**SECTION 000103
PROJECT DIRECTORY**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Identification of project team members and their contact information.

1.02 OWNER:

- A. Name: Troy School District.
 - 1. Address Line 1: 1140 Rankin Dr,
 - 2. City, State, & Zip Code: Troy, MI 48083
 - 3. Telephone: (248) 823-4000
- B. Primary Contact: All correspondence from Contractors to the Architect TMP Architecture, Inc shall be through Barton Malow Builders, unless alternate arrangements are mutually agreed upon at preconstruction meeting.
 - 1. Title: Project Engineer.
 - 2. Name: Josh Eisenman.
 - 3. Email: Josh.Eisenman@BartonMalow.com.

1.03 CONSULTANTS:

- A. TMP Architecture, Inc: Design Professional of Record. All correspondence from Construction Manager regarding construction documents authored by Architect/Engineer's consultants will be through Barton Malow Builders , unless alternate arrangements are mutually agreed upon at preconstruction meeting.
 - 1. Company Name: TMP Architecture, Inc.
 - a. Address Line 1: 191 W Square Lake Rd.
 - b. City, State Zip Code: Bloomfield Hills, MI 48302.
 - c. Telephone: (248) 338-4561.
 - 2. Primary Contact: John Waldrop.
 - a. Title: Principal
 - b. Name: John Waldrop.
 - c. Email: JWaldrop@tmp-architecture.com.

1.04 CONSTRUCTION MANAGER:

- A. Company Name: Barton Malow Builders
 - 1. Address Line 1: 26500 American Drive
 - 2. City, State & Zip Code: Southfield, Mi 48034
 - 3. Telephone: []
- B. Primary Contact:
 - 1. Title: Project Engineer.
 - 2. Name: Josh Eisenman.
 - 3. Email: Josh.Eisenman@BartonMalow.com.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 000110
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- D. 000110 - Table of Contents
- E. 000120 - List of Schedules
- F. 001113 - Advertisement for Bids
- G. 002113 - Instructions to Bidders
- H. 002200 - Work Scopes
- I. 003100 - Available Project Information
- J. 003200.01 - SUB PREQUALIFICATION and BIDDING
- K. 004000 - Procurement Forms and Supplements
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- C. 012100 - Allowances
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- F. 012500 - Substitution Procedures
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- K. 014000 - Quality Requirements
- L. 014100 - Regulatory Requirements
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END OF SECTION

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**SECTION 000120
 LIST OF SCHEDULES
 PROJECT SCHEDULE**

BUILDING	MILESTONE	SCHEDULED START	SCHEDULED COMPLETION
ALL	SHOP DRAWINGS & SUBMITTALS	DECEMBER 7TH 2021	DECEMBER 21ST 2021
BARNARD ELEMENTARY	DOOR AND WINDOW REPLACEMENT	JUNE 17TH 2022	JULY 8TH 2022
BEMIS ELEMENTARY	DOOR AND WINDOW REPLACEMENT	JULY 11TH 2022	JULY 29TH 2022
INTERNATIONAL ACADEMY EAST	DOOR AND WINDOW REPLACEMENT	JUNE 17TH 2022	JULY 8TH 2022
HILL ELEMENTARY	DOOR AND WINDOW REPLACEMENT	JULY 11TH 2022	JULY 29TH 2022
ALL	SUBSTANTIAL COMPLETION	AUGUST 1ST 2022	
ALL	PUNCHLIST	AUGUST 1ST 2022	AUGUST 12TH 2022
ALL	CLOSEOUT	AUGUST 1ST 2022	AUGUST 12TH 2022

END OF SECTION

**SECTION 001113
ADVERTISEMENT FOR BIDS**

FROM:

1.01 CONSTRUCTION MANAGER (HEREINAFTER REFERRED TO AS BARTON MALOW BUILDERS):

- A. Barton Malow Builders
- B. Address:
 - 1. 26500 American Drive
 - 1. Southfield, Mi 48034

1.02 AND THE ARCHITECT/ENGINEER (HEREINAFTER REFERRED TO AS TMP ARCHITECTURE, INC):

- A. TMP Architecture, Inc
- B. Address:
 - a. 191 W Square Lake Rd
 - a. Bloomfield Hills, MI 48302

1.03 AND THE OWNER (HEREINAFTER REFERRED TO AS TROY SCHOOL DISTRICT:

I. TROY SCHOOL DISTRICT

- A. Address:
 - 1. 1140 Rankin Dr,
 - 2. Troy, MI 48083

1.04 DATE: 11-05-2021

1.05 TO: POTENTIAL BIDDERS

- A. Barton Malow Builders requests Bid Proposals on behalf of Owner for the construction of Barnard, Bemis, Hill, and IAE Exterior Door and Window Upgrades for Bid Package # 33 work. Bid Proposals will be received:
 - 1. By electronic delivery by 2 pm local standard time on the 23rd day of November, 2021 .
 - 2. Electronic bids are to be submitted via Building Connected.
 - a. A bid opening will be held via livestream
 - 1) Livestream can be viewed at <https://bit.ly/3CjQ1wt> .
- B. Proposals shall be based on the requirements set forth in the Barton Malow Builders project manual dated 11-05-2021 and construction bidding documents prepared by TMP Architecture, Inc project drawings and specifications dated 11-01-2021 for:
 - 1. Bid Category: Storefronts & Glazing
 - 2. Bid Category: Mechanical
 - 3. Bid Category: Electrical
 - 4. Bid Category: Roller Shades
- C. Bidding Documents will be available for examination and distribution on or after 10 am local standard time on the 5th day of November, 2021. Examination may be made at: Barton Malow Builders's Site office, Building Connected, & CAM/Plan rooms.
- D. Building Connected Link to copy & paste:
<https://app.buildingconnected.com/public/55a1292ff1a96708004a19dc>
- E. Building Connected
- F. Accepted Bidders will be required, as a condition precedent to award of Contract, to furnish, satisfactory Performance Bond and Payment Bond and Certificates of Insurance as required in the Project Manual
- G. Project is subject to state sales and/or use taxes and Bidder is required to include such taxes in its Bid Proposal.

- H. Project is not subject to prevailing wage rates.
- I. Barton Malow Builders has been contracted by the Owner in the capacity of Construction Manager for the Project, and shall act as representative of the Owner to the extent required/allowed under its Owner contract.
- J. A optional pre-bid conference and site visit/tour will be held for all trades at 10 am local standard time on the 10th day of November, 2021 at: All Bidders are responsible for attendance at the pre-bid conference. Pre-bid conference minutes will be distributed to all attendees and invited bidders. Information disclosed in the pre-bid conference minutes will be considered part of the Bidding and Contract Documents.
 - a. Barnard, Bemis, Hill, and IAE Exterior Door and Window Upgrades
 - a. 1140 Rankin Dr,
 - a. Troy , Michigan 48083
- K. Troy School District's Project Number: 9932
- L. Barton Malow Builders Project Number: 140077
- M. TMP Architecture, Inc Project Number: 13157G, 13158E, 13164B, & 13175G
- N. All bidders are required to prequalify to the requirements described in Document 002113 - Instructions to Bidders. Bidders must be pre-qualified for this bid package by Barton Malow Builders before document distribution or receipt of bids per the Instructions to Bidders. Barton Malow Builders reserve the right to request qualification forms or additional information from any Bidder before issuing Bidding Documents, receiving Bid Proposals or awarding the Agreement.
- O. Refer to other bidding requirements described in Document 002113 - Instructions to Bidders and Document 003100 - Available Project Information.
- P. Bid Proposals shall be on forms furnished by Barton Malow Builders via Building Connected. Bidders shall not withdraw or revoke Bid Proposals for a period of 90 Days after date for receipt of Bid Proposals.
- Q. Bidders will be required to submit with their Bid Proposals a Bid Security, in the amount of 5% of base bid, by a qualified surety authorized to do business in the state where the Project is located.
- R. Bidders with an Experience Modification Rate (EMR) greater than 1.0 may not be considered for contract award.
- S. The successful bidder will be required to enter into a contract with Troy School District on the AIA Document A132 Standard Form of Agreement between Owner and Contractor, Construction Manager as Adviser, 2009 Edition.
- T. The Owner reserves the right to accept or reject any or all offers.

1.06 SIGNATURE

- A. For: Barton Malow Builders
- B. By: Larry Bukowski

END OF SECTION

**SECTION 002113
INSTRUCTIONS TO BIDDERS**

SUMMARY

1.01 DOCUMENT INCLUDES

- A. Invitation
 - 1. Bid Submission
- B. Bidding Documents and Contract Documents
 - 1. Definitions
 - 2. Contract Documents Identification
 - 3. Availability
 - 4. Pre-bid RFI's, Inquiries, and Addenda
 - 5. Product/Assembly/System Substitutions
- C. Site Assessment
 - 1. Site Examination
 - 2. Prebid Conference
- D. Qualifications
 - 1. Qualifications
 - 2. Prequalification
 - 3. Subcontractors/Suppliers/Others
- E. Bid Submission
 - 1. Submission Procedure
- F. Bid Enclosures/Requirements
 - 1. Consent of Surety
 - 2. Performance Assurance
 - 3. Insurance
 - 4. Bid Form Requirements
 - 5. Fees for Changes in the work
 - 6. Bid Form Signature
 - 7. Additional Bid Information
 - 8. Selection and Award of Alternates
- G. Offer Acceptance/Rejection
 - 1. Duration of Offer
 - 2. Acceptance of Offer

1.02 RELATED DOCUMENTS

- A. Document 011000 - Use of Premises.
- B. Document 001113 - Advertisement for Bids.
- C. Document 003100 - Available Project Information.
- D. Document 004100 - Bid Form.

INVITATION

2.01 BID SUBMISSION

- A. By making its bid, all bidders represent that:
 - 1. Bidder has carefully read, reviewed and understands the Bidding Documents and its Bid Proposal is made in accordance therewith.
 - 2. Bidder's Bid Proposal is based upon the materials, systems, equipment, terms and conditions required by the Bidding Documents without exception.
 - 3. Bidder certifies that it:
 - a. has visited and examined the project site.
 - b. has carefully reviewed the Bidding Documents.
 - c. has compared its examination of the project site with the Bidding Documents.

- d. is satisfied as to the condition of the project site, any surface or subsurface obstruction, the actual levels, and all excavating, filling in, removal and demolition, measurements and quantities involved in the Work.
 - e. is familiar with weather conditions of the Project area.
 - f. has taken account of all of these factors in preparing and presenting its Bid Proposal.
4. Bidder further certifies that it:
 - a. has fully acquainted itself with the character and extent of the Owner's, Barton Malow Builders' and other Contractor's operations in the area of the Work.
 - b. has taken account of coordination of operations of others in its construction plans set forth in the Bid Proposal.
 5. No change orders will be issued to the Contractor for or on account of costs or expenses occasioned by its failure to comply with the provisions of this paragraph, or by reason of error or oversight on the part of the Contractor, or on account of interferences by the Owner's, Barton Malow Builders' or other contractor's activities.
 6. The Bidder, by submitting its Bid Proposal, represents that it has carefully reviewed the project schedule, along with the related requirements of the Project's Schedule and Phasing, and acknowledges that these are acceptable and have been taken into account in preparing its Bid Proposal.
- B. Bids signed, executed, and dated will be received via Building Connected before 2 p.m. local standard time on the 23rd day of November, 2021
1. If a Bidder chooses to submit an electronic bid, it assumes any and all risk related to software, connectivity, or any other issues related to the electronic bidding process. It is further recommended, but not required, that any electronic bids be submitted at least two hours before the deadline for bid submission to confirm that the bid has been timely, accurately, and completely received.
- C. Offers submitted after the above time shall not be opened.
- D. Offers will be opened publicly immediately after the time for receipt of bids.
1. A bid opening will be held via livestream.

2.02 INTENT

- A. The intent of this Bid request is to obtain an offer to perform Work to complete Barnard, Bemis, Hill, and IAE Exterior Door and Window Upgrades located at 1140 Rankin Dr., Troy, Michigan 48083 for a Stipulated Sum contract, in accordance with Contract Documents.

2.03 WORK IDENTIFIED IN THE CONTRACT DOCUMENTS

- A. Work of this proposed Contract comprises building construction, including demolition, general construction, finishes, mechanical, and electrical work.

2.04 CONTRACT TIME

- A. Perform the work within the Preliminary Project Schedule time stated in section 013216-Schedule & Phasing.

BID DOCUMENTS AND CONTRACT DOCUMENTS

3.01 DEFINITIONS

- A. "**Addenda**" means the written and graphic instruments issued by the Architect and/or Construction Manager prior to the execution of the Agreement that modify or interpret the Bidding Documents by additions, deletions, clarifications, or corrections.
- B. "**Agreement**" means the document defined in the Project Manual, including all other documents incorporated by reference in the Agreement.
- C. "**An Alternate Bid**" (or "**Alternate**") is an amount stated in the Bid Proposal to be added to or deducted from the amount of the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.
- D. "**Architect**" means the person or entity listed in section 00030 of the Project Manual and may include professional engineers if so designated.

- E. **"Base Bid"** is the sum stated in the Bid Proposal for which the Bidder offers to perform the Work described in the Bidding Documents as the base, to which work may be added to or deducted from for sums stated in Alternate Bids.
- F. A **"Bidder"** is a person or legal entity that submits a Bid Proposal in conformance with the Bidding Documents. After award of the Agreement, the Bidder will be referred to as the Contractor. All Contractors on this project are considered prime/principal contractors.
- G. **"Bid Categories"** are units of work performed by a Contractor and its Subordinate Parties which form part of the total Project. The term "Bid Category" should not be confused with the term **"Technical Section"**. Technical Sections of the Specification establish quality and performance criteria, and the Bid Categories designate work scope and assignment.
- H. **"Bidding Documents"** means the Bidding Requirements, the Contract Documents, and the Reference Documents collectively.
- I. A **"Bid Package"** means a series of Bid Categories that are released for bidding in the same set of Bidding Documents.
- J. **"Bidding Requirements"** include the Instructions to Bidders, Information Available to Bidders, and Bid forms and supplements.
- K. **"Bid Proposal"** is a complete and properly signed proposal to do the work of an individual Bid Category(ies) for the sums stipulated therein, submitted in accordance with the Bidding Documents.
- L. The **"Contract Documents"** consist of all Contracting Requirements set forth in the Project Manual, including, but not limited to, the Contract Forms (the Agreement, Performance/Payment Bonds, and Certificates), the Conditions of the Contract (General, Supplementary or Special), the General Requirements of the Project Manual, the Technical Specifications, Drawings, and all other documents incorporated into the Agreement by reference, all Addenda issued prior to and all modifications issued after execution of the Agreement.
- M. **"Contractor"** means the entity to which the Owner issues a contract for performance of the Work.
- N. **"Day"** means calendar day, unless otherwise defined in the particular Contract Document.
- O. **"Hazard Communications Program"** means Contractor's own hazard communications program that will govern project safety for its work. The Hazard Communications Program must be submitted to Barton Malow Builders by each successful Bidder before commencing work and be no less stringent than the Barton Malow Builders Safety Manual.
- P. **"Hazardous Materials"** means asbestos; asbestos containing material; lead (including lead-based paint); PCB; molds; any other chemical, material, or substance subject to regulation as a hazardous material, hazardous substance, toxic substance, or otherwise, under applicable federal, state, or local law; and any other chemical, material, or substance that may have adverse effects on human health or the environment.
- Q. **"Lowest Responsive, Responsible Bidder"** means a Bidder who's Bid Proposal conforms in all material aspects to the contract documents, terms, conditions, specifications and requirements of the solicitations and who has demonstrated the ability to properly perform the Work.
- R. **"MBE/WBE/SBE"** means Minority Owned Business Enterprise/Women Owned Business Enterprise/ Small Business Enterprise as these terms are defined in the applicable ordinances and laws governing the Project.
- S. **"Project Safety Program"** means the Contractor's site safety program that will govern project safety for its work. The Project Safety Program must be submitted to Barton Malow Builders by each successful Bidder before commencing work and be no less stringent than the Barton Malow Builders Safety Manual.
- T. **"Reference Documents"** are drawings that do not form a part of the Contract Documents and are included in the Bidding Documents as a courtesy only. The Bidder is not entitled to rely upon the accuracy of the Resource Drawings and they are not warranted to be correct

or reliable by the Owner or Barton Malow Builders. The Bidder is expected to have conducted its own investigation into the reliability or accuracy of any Reference Documents, and no adjustment to the Base Bid shall be made if such request arises or results from the Bidder's failure to conduct such investigation.

- U. **"Contractor"** means the entity to whom Troy School District issues a contract for the Work.
- V. **"Subordinate Parties"** means all of Contractor's employees, workers, laborers, agents, consultants, suppliers or subcontractors, at any tier, who perform, assist with, or otherwise are involved in any of the Work.
- W. A **"Unit Price"** is an amount stated in the Bid Proposal as a price per unit of measurement for materials or services as described in the Bidding Documents or in the proposed Contract Documents.
- X. The **"work"** includes all work and responsibilities performed or to be performed by Contractor under the Contract Agreement.
- Y. Bid Documents: Contract Documents supplemented with Invitation To Bid, Instructions to Bidders, Information Available to Bidders, Bid Form Supplements To Bid Forms and Appendices identified.

3.02 CONTRACT DOCUMENTS IDENTIFICATION

- A. Contract Documents are identified as Barton Malow Builders Project Manual Project Number: 140077, as prepared by Barton Malow Builders, Architect's Drawings & Specifications Project Number: 13157G, 13158E, 13164B, & 13175G, as prepared by TMP Architecture, Inc and with contents as identified in the Table of Contents.

3.03 AVAILABILITY

- A. Bid documents may be obtained via:
<https://app.buildingconnected.com/public/55a1292ff1a96708004a19dc>
- B. Building Connected
- C. Bid Documents are made available only for the purpose of obtaining Bid Proposals for this project. Their use does not grant a license for other purposes.
- D. Bidders shall use complete sets of Bidding Documents in preparing Bid Proposals. Neither the Owner, CM nor the Architect shall be responsible for errors, omissions or misinterpretations resulting from the Bidder's use of partial sets of Bidding Documents.

3.04 EXAMINATION

- A. Bid Documents may be viewed at the office of Owner at 1140 Rankin Dr, Troy, MI 48083
- B. Bid Documents may be viewed at:
 - 1. Copy and paste link in browser:
 - a. <https://app.buildingconnected.com/public/55a1292ff1a96708004a19dc>
- C. Bid Documents are on display at the offices of the following construction plan rooms:
 - 1. Building Connected
- D. Upon receipt of Bid Documents verify that documents are complete. Notify Barton Malow Builders should the documents be incomplete.
- E. Immediately notify Barton Malow Builders in writing upon finding discrepancies or omissions in the Bid Documents.

3.05 PRE-BID RFI'S, INQUIRIES, AND ADDENDA

- A. Bidder shall promptly notify Barton Malow Builders in writing of all ambiguities, inconsistencies, or errors that it may discover upon examination of the Bidding Documents or upon examination of the Project site and local conditions. Bidders requesting clarification or interpretation of the Bidding Documents shall make a written request, which shall reach Barton Malow Builders at least 7 days prior to the date for receipt of Bid Proposals. Direct all questions to:
- B. Barton Malow Builders Representative Name: Josh Eisenman, email; Josh.Eisenman@BartonMalow.com, telephone (586) 651-2658

- C. Addenda may be issued during the bidding period. All Addenda become part of Contract Documents. Include resultant costs in the Bid Amount.
- D. Any interpretation, correction, or change of the Bidding Documents will be made by Addendum and/or Bid Clarification. Interpretations, corrections, or changes of the Bidding Documents made in any other manner will not be binding, and Bidders shall not rely upon such interpretations, corrections and changes.
- E. Addenda and/or Bid Clarifications will be distributed to all who are known by CM to have received a complete set of Bidding Documents. Copies of Addenda and/or Bid Clarifications will be made available for inspection wherever Bidding Documents are on file for that purpose.
- F. No Addenda or Bid Clarifications will be issued later than 5 days prior to the date for receipt of Bids except an Addendum or Bid Clarification withdrawing or postponing the request for Bid Proposals.
- G. Verbal answers are not binding on any party.
- H. Clarifications requested by bidders must be in writing not less than 10 days before date set for receipt of bids.

3.06 PRODUCT/ASSEMBLY/SYSTEM SUBSTITUTIONS

- A. Substitute products will be considered if submitted as an voluntary alternate on the Bid Form. Bids must be submitted per plans and specifications.
- B. When a request to substitute a product is made via voluntary alternate, Owner may approve the substitution and will be taken in consideration in contract award.
- C. In submission of substitutions to products specified, bidders shall include in their bid all changes required in the Work and changes to Contract Time and Contract Sum to accommodate such substitutions. A later claim by the bidder for an addition to the Contract Time or Contract Sum because of changes in work necessitated by use of substitutions shall not be considered.
- D. The Bid Submission shall provide sufficient information to determine acceptability of such products.
- E. The Bid Submission shall provide complete information on required revisions to other work to accommodate each proposed substitution.
- F. The Bid Submission shall provide products as specified unless substitutions are submitted in this manner and accepted.

SITE ASSESSMENT

4.01 SITE EXAMINATION

- A. Examine the project site before submitting a bid.

4.02 PREBID CONFERENCE

- A. A Bidders Conference has been scheduled for 10 a.m. on the 10th day of November, 2021 at the location of Barnard Elementary School, 3601 Forge Dr, Troy, MI 48083 .
- B. All Contract bidders are invited.
- C. Representatives of Architect/Engineer and Owner may be in attendance.
- D. Summarized minutes of this meeting will be circulated to attendees. These minutes will form part of Contract Documents.
- E. Information relevant to the Bid Documents will be recorded and issued to Bid Document recipients via Building Connected.

QUALIFICATION OF BIDDER

5.01 EVIDENCE OF QUALIFICATIONS

- A. To demonstrate qualification for performing the work of this Contract, bidders may be requested to submit written evidence of financial position, license to perform work in the State and project references of equivalent size and scope .

5.02 PREQUALIFICATION

- A. Bidders shall complete the Barton Malow Prequalification prior to submitting a bid.
- B. Reference Section 003200 for Prequalification Procedures
- C. The Owner and/or Barton Malow Builders have prequalified Bidders and only Bid Proposals from those that are prequalified will be accepted.
- D. Completed Barton Malow Builders Contractors Qualification Form can be found at:
<http://www.bartonmalow.com/subcontractors/subcontractors.htm>
- E. The Barton Malow Builders and Owner reserve the right to request qualification forms or additional information from any Bidder before issuing documents, receiving Bid Proposals or awarding an Agreement. The Barton Malow Builders and Owner may, at their sole discretion, accept or reject Bidders as qualified. The right to waive any informalities or irregularities in qualification materials is reserved by the Barton Malow Builders and Owner.

5.03 CONTRACTORS/SUBCONTRACTOR/SUPPLIERS/OTHERS

- A. Troy School District reserves the right to reject a proposed Contractor and or subordinate party for reasonable cause.

BID SUBMISSION

6.01 SUBMISSION PROCEDURE

- A. Bidders shall be solely responsible for the delivery of their bids in the manner and time prescribed.
- B. Improperly completed information, irregularities in bid bond, may be cause not to open the Bid Form envelope and declare the bid invalid or informal.
- C. An abstract summary of submitted bids will be made available to all bidders following bid opening.

6.02 BID INELIGIBILITY

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

BID ENCLOSURES/REQUIREMENTS

7.01 SECURITY DEPOSIT

- A. Bids shall be accompanied by a security deposit as follows:
 - 1. Bid Bond of a sum no less than 5 percent of the Bid Amount on AIA A310 Bid Bond Form.
 - 2. Certified check in the amount of a sum no less than 5 percent of the Bid Amount
- B. Endorse the Bid Bond in the name of the Troy School District as obligee and Barton Malow Builders as dual obligee, signed and sealed by the principal Contractor and surety.
- C. Endorse the certified check in the name of Troy School District.
- D. The security deposit will be returned after delivery to the Owner of the required Performance and Payment Bond(s) by the accepted bidder.
- E. The cost of bid security in the Bid Amount.
- F. If no contract is awarded, all security deposits will be returned.

7.02 PERFORMANCE ASSURANCE

- A. Include the cost of performance assurance bonds in the Bid Amount.

7.03 INSURANCE

- A. Provide an executed "Undertaking of Insurance" on the form provided stating their intention to provide insurance to the bidder in accordance with the insurance requirements of Contract Documents.

7.04 BID FORM REQUIREMENTS

- A. Complete all requested information in the Bid Form and Appendices.

7.05 BID FORM SIGNATURE

- A. The Bid Form shall be signed by the bidder, as follows (except when submitted electronically via Building Connected):
 1. Sole Proprietorship: Signature of sole proprietor in the presence of a witness who will also sign. Insert the words "Sole Proprietor" under the signature. Affix seal.
 2. Partnership: Signature of all partners in the presence of a witness who will also sign. Insert the word "Partner" under each signature. Affix seal to each signature.
 3. Corporation: Signature of a duly authorized signing officer(s) in their normal signatures. Insert the officer's capacity in which the signing officer acts, under each signature. Affix the corporate seal. If the bid is signed by officials other than the president and secretary of the company, or the president/secretary/treasurer of the company, a copy of the by-law resolution of their board of directors authorizing them to do so, must also be submitted with the Bid Form in the bid envelope.

7.06 ADDITIONAL BID INFORMATION

7.07 SELECTION AND AWARD OF ALTERNATES/VOLUNTARY ALTERNATES

- A. See Section 012300 Alternates
- B. Indicate variation of bid price for Alternates/voluntary alternates listed on the Bid Form.
- C. Bids will be evaluated on the total of the base bid price and all of the Alternates. After determination of the successful bidder, consideration will be given to which Alternates will be included in the work.

OFFER ACCEPTANCE/REJECTION

8.01 DURATION OF OFFER

- A. Bids shall remain open to acceptance and shall be irrevocable for a period of 90 days after the bid closing date.

8.02 ACCEPTANCE OF OFFER

- A. Owner reserves the right to accept or reject any or all offers.
- B. After acceptance by Owner, Barton Malow Builders on behalf of Owner, will issue to the successful bidder, a written Letter of Intent (LOI) or Notice to Proceed (NTP).

END OF SECTION

Troy School District
Barnard, Bemis, Hill, and IAE
Exterior Door and Window
Upgrades
Troy , Michigan

9932
11-05-2021

**SECTION 002200
WORK SCOPES**

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS – NOT USED

PART 3 WORK SCOPE

3.01 REFERENCE APPROPRIATE BID CATEGORY FOR YOUR SCOPE OF WORK

- A. Bid Category: 002208.01 - Glass and Glazing - Scope of Work
- B. Bid Category: 002210.01 - Specialties - Scope of Work
- C. Bid Category: 002222.02 - Mechanical - Scope of Work
- D. Bid Category: 002226.01 - Electrical - Scope of Work

END OF SECTION

**SECTION 002208.01
GLASS AND GLAZING - SCOPE OF WORK**

A. BID PACKAGE 08 0000

BID CATEGORY – STOREFRONT, CURTAINWALL, & GLAZING

PART 1 GENERAL

3.01 THE WORK OF THIS BID CATEGORY INCLUDES BUT IS NOT LIMITED TO PROVIDING ALL SUPERVISION, LABOR, EQUIPMENT, MATERIALS, TAXES, BONDS, INSURANCE, SCAFFOLDING, HOISTING AND INCIDENTALS TO COMPLETE THE WORK PER ALL CONTRACT DOCUMENTS FOR THE BARNARD, BEMIS, HILL, AND IAE EXTERIOR DOOR AND WINDOW UPGRADES AS DEFINED BY THE BID PACKAGE NO. 33 BID/WORK SCOPE DOCUMENT INCLUDING ITS SUPPLEMENTARY DOCUMENTS AND IN ACCORDANCE WITH ANY APPLICABLE CODES. ALL WORK IS TO BE PERFORMED AS SHOWN ON THE PLANS AND AS SPECIFIED IN THE FOLLOWING TECHNICAL SPECIFICATION SECTIONS:

I.

I.

- A. Division 0 - Procurement and Contracting Complete
- B. Division 01 – General Requirements Complete
- C. Division 02 – Existing Conditions
 - 1. 02 4120 As Applicable
- D. Division 06 – Wood, Plastics, and Composites
 - 1. 06 1000 As Applicable
- E. Division 07 – Thermal and Moisture Protection
 - 1. 07 9200 As Applicable
- F. Division 08 – Openings
 - 1. 08 2250 – 9000 As Applicable

1.

1.

I. IN ADDITION TO THE ABOVE, THIS BID CATEGORY INCLUDES BUT IS NOT LIMITED TO THE BIDDING DOCUMENTS, THE BIDDING AND CONTRACT REQUIREMENTS AND DIVISION 1 GENERAL REQUIREMENTS OF THE BARTON MALOW BUILDERS PROJECT MANUAL AND VARIOUS OTHER DOCUMENTS AND TECHNICAL SPECIFICATIONS INTERFACING WITH THIS WORK PROVIDED BY THE OWNER, ARCHITECT AND/OR ENGINEERS. THE BIDDER IS ADVISED TO REVIEW THE WORK DESCRIPTIONS OF THE OTHER CATEGORIES SO AS NOT TO MISUNDERSTAND SCOPE RESPONSIBILITIES.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

I. THE SCOPE OF WORK WILL INCLUDED AND IS NOT LIMITED TO THE FOLLOWING ITEMS:

- A. Performance of the Work shall be in accordance with all Division 01 – General Requirements.
- B. Refer to the Project Manual for additional bidding and project general requirements and conditions.
- C. In addition to the requirements set forth in Division 01 – General Requirements, the Work shall include the following:
 - 1. Additional Meetings & Quality Control Requirements:
 - a. Pre-Install Conferences
 - b. Mockups

c. Additional Photographic documentation, etc.

D. Submittals/Close Out:

1. Submit all start-up documents, and product submittals on materials & products within two (2) weeks weeks after Notice to Proceed (NTP).
2. Submit all shop drawings in accordance with the contract documents and all code requirements within two (2) weeks after Notice to Proceed (NTP).
3. All equipment, products, & materials that are installed without submittal approval and not acceptable by the Architect/Engineer and Owner will be removed at the installing Contractors cost. Contractor will be held responsible for all back charges caused by the project delay to the Owner and Trades working onsite due to no specified material/equipment install and/or lack of or late submittal approvals.
4. Contractor shall include all cost necessary for as-built, asset sheet data spreadsheet, closeout documents (including O&M manuals, valve charts, guarantees or warranties on equipment and/or materials, testing and system check-out or approval, and Owner's training as required) per the Contract Documents.
5. Contractor to provide additional manpower dedicated to Barton Malow Builders to complete Barton Malow Builders punch list work for a minimum of ten (10) working days prior to the listed Architect/Engineer project punch list in the project schedule. This manpower will be under the direction of the Barton Malow Builders Superintendent to complete punch list work of their bid category and will report directly to the Barton Malow Builders each day. Failure to provide required manpower may result in a delay in receiving the Contractor's progress payment from Barton Malow Builders.
6. Architect/Engineer's punch list will not start until all work has complete been completed.
7. Contractor may not drop retainage to 5% until work of this bid category is substantially complete according to the contract documents. In addition, all warranties, o/m manuals, testing, commissioning, training, extra materials, and punch list items have been completed, turned over, accepted, and documented. Contractors must also have up to date partial and final waivers from all Contractors, suppliers, and other Subordinate Parties including a AIA G707a Consent of Surety to partial reduction in retainage form signed and sealed by the Surety.
8. To bill out the remainder of retainage (from 5% to 0%), the Contractor must set up a meeting with Barton Malow Builders to go over and/or collect the remaining closeout items for final payment as specified in the project manual and submit a AIA G707 Consent of Surety for final payment form signed and sealed by the Surety.

E. General Scope:

1. Contractor is to incorporate all project bidding documents into their subordinate party agreements.
2. All bidders are required to review the General Conditions of the Contract located in the project manual.
3. Contractor is to be licensed to perform work in the State of Michigan. This includes all Contractors and 2nd or 3rd (etc.) tiered Contractors.
4. Contractor shall maintain on site, a copy of all applicable code books specifically pertaining to this scope of work. These code books are to follow the city, state, and all other authorities having jurisdiction per the specific year each authority has designated for this particular project. This Contractor is responsible for all research and compliance with all applicable regulations.
5. This Contractor is responsible to coordinate with Barton Malow Builders to schedule inspections with the Local Governing Agency and/or the State of Michigan as well as the testing agency. Inspection results and records will be kept in the Barton Malow Builders jobsite office. During all inspections each Contractor is to have a Foreman/Superintendent on site.
6. Contractor must verify that work installed by others, complies in its entirety with the contract documents prior to commencing their work, which ties in, overlays and/or

- follows the installed work. Any non-conforming work shall be identified in writing to Barton Malow Builders immediately.
7. Anyone listed on the National Sex Offender List is not allowed to be a part of this project and anyone who is convicted of a listed offense will be immediately dismissed from project. Provide photo identification upon arriving to the site and badges are to be worn by Contractor's field personnel at all times.
 8. Contractor shall have their Superintendent/Foreperson attend a daily coordination meeting every morning from 6:45am - 7:00am. Participation is mandatory. Project daily working hours are Monday – Friday, Site Opens @ 6:00am and closes at 4:00pm. Weekend work as well as overtime is highly discouraged and not preferred. Plan your work and associated activities accordingly. There will be a 5-day minimum work week. Any work performed outside normal working hours requires approval from Barton Malow Builders. Should scheduled workdays or production be lost due to inclement weather or this Contractor's delays, overtime during the work week at this Contractor's expense, will be required to maintain the project schedule.
 9. Contractor is only to take direction from Barton Malow Builders.
 10. Review all specifications and project drawings, drawing notes, schedules, and schedule notes for areas requiring work described by this bid category and coordinate work with the respective contractors, include all costs in base bid.
 11. Include all manpower, overtime, composite crews and mobilizations in base bid to complete work per the project schedule. All mobilizations required to complete this Scope of Work have been included in the base contract price, unless specifically addressed otherwise in this Contract Agreement. It is understood and agreed that this work may not be performed in a continuous operation and during normal business hours. This contractor has included the cost of the multiple mobilizations/remobilizations and cost to work during non-normal business hours.
 12. Contractor will be required to perform after-hours and overtime work as necessary to minimize disruption to Troy School District.
 13. If Contractor is behind schedule and is notified by Barton Malow Builders, the Contractor shall be required to accelerate the work at its own expense. The Contractor shall employ such means as overtime work, multiple work shifts, and additional equipment, and shall continue to do so until the progress of the work, in the opinion of Barton Malow Builders, is in conformance with the master project construction schedule.
 14. Provide and install all materials per the construction documents. Bid proposals must be per plan and specs. Bids not conforming to plans and specifications will be rejected. Substitutions must be pre-approved in writing prior to bids or be submitted as voluntary alternates on the bid form.
 15. Contractor must include costs and utilize Autodesk Build and Textura for this project. Information and cost for Textura can be found in section 012000-Price and Payment Procedures and Autodesk Build in section 013000-Administrative Requirements.
 16. All contractors are to field verify all existing conditions prior to submitting a bid. Submitting a bid is acceptance of all field conditions. Do NOT scale the drawings.
 17. If there are discrepancies between the project drawings, specifications, work scopes, or project manual, the Contractor shall include the most stringent (expensive) cost in base bid.
 18. This project surrounded by Troy School District staff and students. Contractor is to take proper measures to ensure minimal disruptions to the roads and sidewalks around the project. Contractor is responsible for proper barricading and signage if his work activity interrupts the normal flow of operations around the facility. All Contractor employees and subordinate parties are to conduct themselves in a manner not to offend nor interfere with the staff, students, or any other public person. Barton Malow Builders and Troy School District Code of Conduct includes immediate termination for foul language/derogatory conversation. Those who are not in compliance will be asked to leave the project and not return.

19. Provide all temporary protection for work of this bid category. Removal of this protective material at the conclusion of the project is this contractor's responsibility.
20. Minimize disturbances to landscape areas. Excessive or malicious (as deemed by) Barton Malow Builders landscape disturbance will be the responsibility of this contractor to restore at own expense.
21. Protect equipment and finish items to remain during construction including roof, ceilings, walls, flooring, and landscaping during work of this bid category. In addition, all work being performed through ceilings, be it grid, ceiling pads, drywall or plaster, etc. must be protected from damage during work of this bid category. Correction of damage due to lack of adequate protection will be the responsibility of this contractor.
22. Deliveries must occur after 7am and prior to 2pm and not between noon and 1pm, unless scheduled with a Barton Malow Builders Superintendent or risk having the delivery turned away. Unloading, hoisting, transport of materials out of truck to staging location, and delivery acceptance is by the Contractor who is responsible for the material.
23. Contractor is responsible for storage of all materials. Deliver materials to the site as needed. Storage in the building will be limited. Materials in building must be on pallets or material/pipe carts.
24. Stocking of material on floors will be limited to a three (3) day maximum in the area of work, if approved by Barton Malow Builders Superintendent. No other material storage will be allowed in the building.
25. All materials used are to be new, unused and undamaged. Any damaged or questionable material is to be removed and replaced at no cost to the Owner or Barton Malow Builders.
26. Include all rigging and hoisting to deliver, install, and remove materials to / from all floor levels complete.
27. All crane and boom truck lifts must be properly barricaded to keep public at a safe distance. Provide ground spotters and barricading to keep public out of the swing radius of the crane or boom truck.
28. The use of the existing and/or new elevator will not be permitted.
29. This contractor is responsible for all lifts and scaffolding, if required, for work of this bid category. Coordinate use of your lifts and scaffolding with other trades.
30. Scaffolding and staging as required. Engineered installation drawings, as required.
31. Include field layout for work of this bid category, also included is field time for this contract to survey existing conditions prior to beginning each phase of work. Any discrepancies between existing conditions and the contract drawings are to be reported to Barton Malow Builders immediately.
32. Coordination drawing meetings will be scheduled. Contractor understands that Barton Malow Builders is not issuing change orders for items not coordinated with other trades. Contractor also understands any conflicts of existing structure with their new work must be brought to Barton Malow Builders and Architect/Engineer attention in advance of start of work.
33. Contractor shall have no claims for additional cost because Contractor has failed to install work in proper sequence and not in accordance with Coordination drawings. Likewise, any cost for removal of materials or damage caused by Contractors who have failed to perform their Work in the proper sequence will be borne by that Contractor.
34. Participation in coordination meeting/s, weekly progress meetings, and drawings process is mandatory. Minimum four (4) hours per week shall be included for meetings and coordination with Barton Malow Builders. Representative must be able to make all decisions for their Company and Contractors.
35. Contractor to have one (1) full time on-site superintendent, for the duration of the project. The assigned personnel will be responsible to manage the "entire" scope of work including their Subcontractors/Suppliers and will be the single point of contact for this scope of work. Contractor will be responsible to complete the daily report & JHA form each day including for their Subcontractors regardless if the Contractor has self-perform crews on site or not. Representative must be able to make all field & financial

- decisions. If full time supervision is not onsite by the Contractor, their Subcontractors will be told to leave the site until the next calendar working day. Contractor will be held responsible for delays and back charged due to lack of project supervision.
36. Contractor is to provide site Supervision and Foreman an Apple iPad with unlimited data/cellular plan service. It is required that Contractor download Bluebeam and Autodesk Build via the app store on each device. Contractor may access Owner guest Wi-Fi network if available.
 37. Contractor must complete and submit electronic daily Flypaper reports and pre-task plans via Autodesk Build to Barton Malow Builders on a daily basis. These reports must show total number of manpower, total number of hours, and each day's specific activities. If this is not done, Barton Malow Builders reserves the right to withhold this Contractor's monthly payments until satisfied with this Contractor's response.
 38. Items shown to be turned over on the project documents and for closeout attic stock to Owner must be accompanied by a transmittal and copied with signature of receipt to Barton Malow Builders. If a transmittal is not provided and Owner's items are missing, it is this contractor's responsibility to purchase and replace with new materials.
 39. Contractor is responsible for the quality control for work of this bid category (including for their subordinate parties). Contractor is to strictly observe tolerances and to maintain strict quality control throughout the execution of his work. All work is to be checked for compliance at each stage of completion per applicable codes, project drawings, specifications, and manufactures shop drawings/written instructions. Any work that is not within specified tolerances is to be removed and replaced.
 40. Locate all underground utilities (public and private) prior to any excavation and temporary road/staging area install. Note that Miss Dig will not locate private utilities on the Owner's property. It is the responsibility of this contractor to hire an outside firm and locate private utilities. Damage to existing utilities, public or private, including communication and parking/walkway lighting lines caused by work of this bid category will be the responsibility of this contractor. Contractor will be responsible for all fees to restore the utilities and temporary measures needed until repairs are made.
 41. Ticket work is to be signed and approved by Barton Malow Builders at the end of each workday. Tickets not reviewed or signed by the Barton Malow Builders Superintendent will not be accepted or processed. Pricing is to have detailed explanations of work performed. Barton Malow Builders directed ticket work shall NOT include foreman time, work/service truck, cartage, or overhead and profit mark-up. Tickets shall include only approved labor and materials used. Signature from Barton Malow Builders Superintendent does not necessarily equal additional funds. Barton Malow Builders Project Manager will decide if ticket work is added scope to the contract.
 42. All change pricing is to be submitted within ten (10) days from receipt of the change vehicle, unless otherwise agreed by Barton Malow Builders or Owner. All change order pricing is to include a detailed breakdown of costs – Material, Labor, Equipment, etc. along with any signed work orders. No lump sum pricing allowed. Change order pricing will not be accepted without a detailed breakdown. Failure to submit change order pricing within ten (10) days will result in a \$0 change order.
 43. Provide all cutting/patching, coring, patching of penetrations, and block-outs for work of this bid category. This is to include but not limited to cutting and patching of all openings in deck (concrete or metal) if required. Patch walls where adjacent existing walls were removed. Patch and repair work is to be done professionally by trained, skilled craftsmen.
 44. Provide and install temporary protection for all excavations, floor, or roof openings created by work of this bid category. Temp protection shall be installed per OSHA standards with robust, securely fixed and clearly marked (e.g. 'Hole below - do not remove') covers to prevent the fall of materials or persons through them. Covers should be constructed to be removable sections and that they do not present a tripping hazard.
 45. Contractor is responsible for all dewatering and snow/ice removal necessary to complete this Scope of Work.

46. Cleanup is to be performed continuously as work is progressing. This means cleaning up each and every hour. This includes the removal of debris, sweeping (Contractor to provide sweeping compound), wiping down of all finished surfaces, and the proper storage of unused equipment and materials. Cleanup not performed by the Contractor will be completed by a third party (chosen by Barton Malow Builders) and back charged accordingly. Written warnings will not be issued.
47. Contractor shall participate in the Composite Cleanup Crew as described in the project manual. These requirements are in addition to normal daily cleaning responsibilities and costs for this are included in the contract price.
48. Include all cost to comply with the latest State of Michigan Executive Order, OSHA requirements, Local Jurisdiction Requirements, Owners Requirements, whichever is more stringent, related to COVID-19 PPE, social distancing, and all other requirements for your workers and subordinate parties. This shall include identifying your competent Covid 19 supervisor that will review, monitor, and enforce all requirements. In addition, each worker onsite is required to sign in each day prior to work using the Barton Malow QR Reader Questionnaire on a smart phone or tablet.

F. Specific Scope:

1. Temporary Measures:
 - a. Provide, maintain, and remove temporary systems upon completion and activation for use of the permanent systems.
 - b. Protect all materials from damage prior to installation.
2. Temporary Lighting:
 - a. Contractor shall provide task lighting and temporary light stands as necessary.
3. Mock-up:
 - a. If required by the Contract Documents, Contractor shall provide a Mock-up.
 - b. Special Meeting Requirements:
 - 1) Pre-Installation Conference: Contractor shall hold a pre-installation conference at the jobsite with all trades affected by the work. Attendees shall include representatives from the Manufacturer and Testing Agency.
4. Coordination and Layout
 - a. Contractor will be responsible for the complete coordination of work of this bid category with all other trades to identify and resolve conflicts. Any and all financial implications emanating from this Contractor's lack of planning and coordination will be borne by this Contractor. This shall include blocking, backing conduits, sleeves, penetrations, and any other appurtenances which may not be specifically identified by the contract documents but are required to complete this scope of work.
 - b. This Contractor is responsible for all detailed layout required for proper location and coordination of work.
 - c. Contractor shall review the critical dimensions and elevations of all work and shall otherwise verify the conformity of existing work to the Contract Documents and to its suitability. Contractor shall promptly submit a written statement to Barton Malow Builders and Architect/Engineer noting any discrepancies or unacceptable conditions as they relate to its work
 - d. Contractor shall attend all meetings as required to properly coordinate its Work with that of Others. Coordination efforts should be focused on minimizing any post-installation damage and required patching operations.
 - e. Contractor shall visit the site and attend meetings as required to properly coordinate the Work.
 - 1) Coordination efforts should be focused on minimizing any post-installation damage and required patching operations.
 - f. Initial benchmarks are shown on the project drawings.
 - g. Coordinate installation of conduit and wiring with the Electrical and Security Contractors in new storefront & curtainwalls.
5. Contractor shall include multiple mobilizations to complete the Work.

- a. Contractor shall include multiple mobilizations for the Work as required. Multiple mobilizations include those required for the installation of any required deck edge embedded or welded clips prior to the installation of the Curtain Wall system.
6. Work in New and Existing Buildings
 - a. Provide any required temporary infill of openings that are scheduled to receive new Work in existing Buildings.
 - b. Replaced in its entirety all fireproofing disturbed by this Contractor's installations. Patching material shall match the material used by the Fireproofing Contractor.
 - c. Provide and install any structural steel work necessary to span between or extend from the basis building structure in order to install curtain wall.
7. Openings:
 - a. Contractor shall provide and install all interior and exterior Glass & Glazing Work as specified by the Contract Documents and as clarified herein.
8. Demolition:
 - a. Demolition of all exterior glazing windows/ framing complete is work of this bid category. Only demo window openings that can be replaced in the same day. Demo shall include all accessories and sealants complete. Include temporary panels in frames until glazing is in place.
 - b. Provide any required demolition of existing units.
 - c. Removal, salvage, and storage of access control devices for reinstallation by this Contractor shown on the Demolition drawings.
 - d. Coordinate the extent of demolition with abatement contractor for all systems noted on the drawings to be the responsibility of the abatement contractor.
 - e. Removal of existing blinds not removed by the abatement contractor.
 - f. Contractor to provide their own dumpster for material removed in demolition.
9. Exterior Glass & Glazing:
 - a. Provide and install all exterior glazed FRP doors, including frames, and hardware, as required to provide a fully functioning opening.
 - b. Provide and install all hardware, and accessories, scheduled for doors provided under this scope of work.. Hardware required for the opening to be functional shall be installed by this Contractor.
 - c. Provide and install all exterior glass and glazing in all exterior doors and frames including FRP doors in aluminum glazing systems. This includes, but is not limited to any transom glazing, side-lites, borrowed lites, and fire rated glass that is scheduled to be field installed.
 - d. Provide and install all rated and non-rated glazing in all door types.
 - e. Provide and install all typical miscellaneous items that may, or may not, be shown for work of this bid category including but not limited to glazing, mullions, thresholds, cores, hardware, fillers, drip edge, trim, and all components necessary for a complete installation as shown or as required.
 - f. Provide and install all Aluminum and FRP doors and frames in punched opening storefront systems.
 - g. Provide and install all Aluminum and FRP doors in storefront and curtainwall systems. glazing, mullions, thresholds, cores, hardware, fillers, drip edge, trim, and all components necessary for a complete installation as shown or as required.
 - h. Complete hardware manufacturer's adjustment and inspection as specified.
 - i. Reinstall all access control devices with proper low voltage wiring as specified on the drawings.
 - j. Provide and install all blocking and shims shown or required.
 - k. Provide and install all exterior framed rated and non-rated glass windows.
 - l. Provide and install all window film shown or specified in the contract documents.
 - m. Provide and install temporary panels in all louver openings. All temporary protection is to be weather tight.

- n. Patch and repair all surrounding finishes impacted by the demolition of existing units and the installation of new systems. Any and all existing damage must be documented and reported to Barton Malow before contract work begins.
 - o. All adjusting and cleaning shall be performed as specified.
 - p. Contractor shall remove any factory applied decals or labels from its work and clean any surfaces as required upon completion of its Work.
 - q. Provide a final cleaning of new interior and exterior glazing & aluminum framing at the direction of Barton Malow Builders including removal of any factory applied decals or labels.
10. Exterior Aluminum Framed Curtainwall & Storefront Systems:
- a. Provide and install all Aluminum Framed Curtain Wall and Storefront assemblies, including all glass, vision glass, spandrel glass, insulation or insulated panels behind spandrel or vision glass, break metal, flashings, sealants, accessories, and mounting clips, internal steel framing, doors, as required to provide a complete system.
 - b. Complete hardware manufacturer's adjustment and inspection as specified.
 - c. Provide and install all Aluminum and FRP doors and frames in punched opening storefront, and curtainwall systems.
 - d. Complete hardware manufacturer's adjustment and inspection as specified.
 - e. Reinstall all access control devices with proper low voltage wiring as specified on the drawings.
 - f. Provide and install all blocking and shims shown or required.
 - g. Provide and install all rated and non-rated glazing in all door types.
 - h. Provide and install all window film shown or specified in the contract documents.
 - i. Provide and install any required insulated aluminum closure panels (mullion mates) where interior partitions intersect the Curtain Wall or Storefront systems.
 - j. All adjusting and cleaning shall be performed as specified.
 - k. Contractor shall remove any factory applied decals or labels from its work and clean any surfaces as required upon completion of its Work.
 - l. Provide a final cleaning of new interior and exterior glazing & aluminum framing at the direction of Barton Malow Builders including removal of any factory applied decals or labels.
11. Sealants:
- a. Provide and install joint sealants shown on the contract documents and where work of this bid category meets dissimilar materials. This includes interior and exterior perimeter sealants and fire rated sealants in fire rated assemblies. Verify exterior joint width and include in base bid. Complete a sample for approval before proceeding with joint sealants.

G. Exclusions:

- 1. Louvers
- 2. Demolition of existing doors and frames as indicated on the drawings to be removed by the abatement contractor.

5.02 SPECIAL CONSIDERATIONS:

- A. Labor Rates/Unit Prices/Alternates: Provide the following information on the bid form:
- B. Labor/Equipment Rates:
 - 1. This Contractor is to provide as a part of his proposal a fully detailed labor rates for Barton Malow Builders approval for work associated with this Contractor's and for each of their Subordinate Parties Trades. In addition, labor rates will be required for all equipment involved with the performance of the work required by this Bid Category.
- C. Unit Pricing:
 - 1. NA

Troy School District
Barnard, Bemis, Hill, and IAE
Exterior Door and Window
Upgrades
Troy , Michigan

9932
11-05-2021

- D. Allowances: This Contractor must obtain written authorization from Barton Malow Builders prior to performing the associated work below. Include in this Contractor's bid, allowances for work as follows.
 - 1. Provide Allowance for the following
 - a. NA
- E. Alternates: This bidder shall be required to submit alternate prices identified in the contract documents which pertain to their work. These alternate prices shall be separate from their base bid on the bid proposal form.

END OF SECTION

**SECTION 002210.01
SPECIALTIES - SCOPE OF WORK**

A. BID CATEGORY 12 2413

A. BID CATEGORY – SPECIALTIES

PART 1 GENERAL

1.01 THE WORK OF THIS BID CATEGORY INCLUDES BUT IS NOT LIMITED TO PROVIDING ALL SUPERVISION, LABOR, EQUIPMENT, MATERIALS, TAXES, BONDS, INSURANCE, SCAFFOLDING, HOISTING AND INCIDENTALS TO COMPLETE THE WORK PER ALL CONTRACT DOCUMENTS FOR THE BARNARD, BEMIS, HILL, AND IAE EXTERIOR DOOR AND WINDOW UPGRADES AS DEFINED BY THE BID PACKAGE NO. 33 BID/WORK SCOPE DOCUMENT INCLUDING ITS SUPPLEMENTARY DOCUMENTS AND IN ACCORDANCE WITH ANY APPLICABLE CODES. ALL WORK IS TO BE PERFORMED AS SHOWN ON THE PLANS AND AS SPECIFIED IN THE FOLLOWING TECHNICAL SPECIFICATION SECTIONS:

I.

I.

- A. Division 0 - Procurement and Contracting Complete
- B. Division 01 – General Requirements Complete
- C. Division 02 – Existing Conditions
 - 1. 02 4210 As Applicable
- D. Division 12 – Providing's
 - 1. 12 2413 As Applicable

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I. IN ADDITION TO THE ABOVE, THIS BID CATEGORY INCLUDES BUT IS NOT LIMITED TO THE BIDDING DOCUMENTS, THE BIDDING AND CONTRACT REQUIREMENTS AND DIVISION 1 GENERAL REQUIREMENTS OF THE BARTON MALOW BUILDERS PROJECT MANUAL AND VARIOUS OTHER DOCUMENTS AND TECHNICAL SPECIFICATIONS INTERFACING WITH THIS WORK PROVIDED BY THE OWNER, ARCHITECT AND/OR ENGINEERS. THE BIDDER IS ADVISED TO REVIEW THE WORK DESCRIPTIONS OF THE OTHER CATEGORIES SO AS NOT TO MISUNDERSTAND SCOPE RESPONSIBILITIES.

1.02 PART 2 PRODUCTS – NOT USED

1.03 PART 3 EXECUTION

I. THE SCOPE OF WORK WILL INCLUDED AND IS NOT LIMITED TO THE FOLLOWING ITEMS:

- A. Performance of the Work shall be in accordance with all Division 01 – General Requirements.
- B. Refer to the Project Manual for additional bidding and project general requirements and conditions.
- C. In addition to the requirements set forth in Division 01 – General Requirements, the Work shall include the following:
 - 1. Additional Meetings & Quality Control Requirements:
 - a. Pre-Install Conferences
 - b. Mockups
 - c. Additional Photographic documentation, etc.
 - d. As-builts
- D. **Submittals/Close Out:**
 - 1. Submit all start-up documents, and product submittals on materials & products within two (2) weeks weeks after Notice to Proceed (NTP).

2. Submit all shop drawings in accordance with the contract documents and all code requirements within two (2) weeks after Notice to Proceed (NTP).
3. All equipment, products, & materials that are installed without submittal approval and not acceptable by the Architect/Engineer and Owner will be removed at the installing Contractors cost. Contractor will be held responsible for all back charges caused by the project delay to the Owner and Trades working onsite due to no specified material/equipment install and/or lack of or late submittal approvals.
4. Contractor shall include all cost necessary for as-built, asset sheet data spreadsheet, closeout documents (including O&M manuals, valve charts, guarantees or warranties on equipment and/or materials, testing and system check-out or approval, and Owner's training as required) per the Contract Documents.
5. Contractor to provide additional manpower dedicated to Barton Malow Builders to complete Barton Malow Builders punch list work for a minimum of ten (10) working days prior to the listed Architect/Engineer project punch list in the project schedule. This manpower will be under the direction of the Barton Malow Builders Superintendent to complete punch list work of their bid category and will report directly to the Barton Malow Builders each day. Failure to provide required manpower may result in a delay in receiving the Contractor's progress payment from Barton Malow Builders.
6. Architect/Engineer's punch list will not start until all work has complete been completed.
7. Contractor may not drop retainage to 5% until work of this bid category is substantially complete according to the contract documents. In addition, all warranties, o/m manuals, testing, commissioning, training, extra materials, and punch list items have been completed, turned over, accepted, and documented. Contractors must also have up to date partial and final waivers from all Contractors, suppliers, and other Subordinate Parties including a AIA G707a Consent of Surety to partial reduction in retainage form signed and sealed by the Surety.
8. To bill out the remainder of retainage (from 5% to 0%), the Contractor must set up a meeting with Barton Malow Builders to go over and/or collect the remaining closeout items for final payment as specified in the project manual and submit a AIA G707 Consent of Surety for final payment form signed and sealed by the Surety.

E. General Scope:

1. Contractor is to incorporate all project bidding documents into their subordinate party agreements.
2. All bidders are required to review the General Conditions of the Contract located in the project manual.
3. Contractor is to be licensed to perform work in the State of Michigan. This includes all Contractors and 2nd or 3rd (etc.) tiered Contractors.
4. Contractor shall maintain on site, a copy of all applicable code books specifically pertaining to this scope of work. These code books are to follow the city, state, and all other authorities having jurisdiction per the specific year each authority has designated for this particular project. This Contractor is responsible for all research and compliance with all applicable regulations.
5. This Contractor is responsible to coordinate with Barton Malow Builders to schedule inspections with the Local Governing Agency and/or the State of Michigan as well as the testing agency. Inspection results and records will be kept in the Barton Malow Builders jobsite office. During all inspections each Contractor is to have a Foreman/Superintendent on site.
6. Contractor must verify that work installed by others, complies in its entirety with the contract documents prior to commencing their work, which ties in, overlays and/or follows the installed work. Any non-conforming work shall be identified in writing to Barton Malow Builders immediately.
7. Anyone listed on the National Sex Offender List is not allowed to be a part of this project and anyone who is convicted of a listed offense will be immediately dismissed

- from project. Provide photo identification upon arriving to the site and badges are to be worn by Contractor's field personnel at all times.
8. Contractor shall have their Superintendent/Foreperson attend a daily coordination meeting every morning from 6:45am - 7:00am. Participation is mandatory. Project daily working hours are Monday – Friday, Site Opens @ 5:30am and closes at 2:30pm . Weekend work as well as overtime is highly discouraged and not preferred. Plan your work and associated activities accordingly. There will be a 5-day minimum work week. Any work performed outside normal working hours requires approval from Barton Malow Builders. Should scheduled workdays or production be lost due to inclement weather or this Contractor's delays, overtime during the work week at this Contractor's expense, will be required to maintain the project schedule.
 9. Contractor is only to take direction from Barton Malow Builders.
 10. Review all specifications and project drawings, drawing notes, schedules, and schedule notes for areas requiring work described by this bid category and coordinate work with the respective contractors, include all costs in base bid.
 11. Include all manpower, overtime, composite crews and mobilizations in base bid to complete work per the project schedule. All mobilizations required to complete this Scope of Work have been included in the base contract price, unless specifically addressed otherwise in this Contract Agreement. It is understood and agreed that this work may not be performed in a continuous operation and during normal business hours. This contractor has included the cost of the multiple mobilizations/remobilizations and cost to work during non-normal business hours.
 12. Contractor will be required to perform after-hours and overtime work as necessary to minimize disruption to Troy School District.
 13. If Contractor is behind schedule and is notified by Barton Malow Builders, the Contractor shall be required to accelerate the work at its own expense. The Contractor shall employ such means as overtime work, multiple work shifts, and additional equipment, and shall continue to do so until the progress of the work, in the opinion of Barton Malow Builders, is in conformance with the master project construction schedule.
 14. Provide and install all materials per the construction documents. Bid proposals must be per plan and specs. Bids not conforming to plans and specifications will be rejected. Substitutions must be pre-approved in writing prior to bids or be submitted as voluntary alternates on the bid form.
 15. Contractor must include costs and utilize Autodesk Build and Textura for this project. Information and cost for Textura can be found in section 012000-Price and Payment Procedures and Autodesk Build in section 013000-Administrative Requirements.
 16. All contractors are to field verify all existing conditions prior to submitting a bid. Submitting a bid is acceptance of all field conditions. Do NOT scale the drawings.
 17. If there are discrepancies between the project drawings, specifications, work scopes, or project manual, the Contractor shall include the most stringent (expensive) cost in base bid.
 18. This project surrounded by Troy School District staff and students. Contractor is to take proper measures to ensure minimal disruptions to the roads and sidewalks around the project. Contractor is responsible for proper barricading and signage if his work activity interrupts the normal flow of operations around the facility. All Contractor employees and subordinate parties are to conduct themselves in a manner not to offend nor interfere with the staff, students, or any other public person. Barton Malow Builders and Troy School District Code of Conduct includes immediate termination for foul language/derogatory conversation. Those who are not in compliance will be asked to leave the project and not return.
 19. Provide all temporary protection for work of this bid category. Removal of this protective material at the conclusion of the project is this contractor's responsibility.

20. Minimize disturbances to landscape areas. Excessive or malicious (as deemed by) Barton Malow Builders landscape disturbance will be the responsibility of this contractor to restore at own expense.
21. Protect equipment and finish items to remain during construction including roof, ceilings, walls, flooring, and landscaping during work of this bid category. In addition, all work being performed through ceilings, be it grid, ceiling pads, drywall or plaster, etc. must be protected from damage during work of this bid category. Correction of damage due to lack of adequate protection will be the responsibility of this contractor.
22. Deliveries must occur after 7am and prior to 2pm and not between noon and 1pm, unless scheduled with a Barton Malow Builders Superintendent or risk having the delivery turned away. Unloading, hoisting, transport of materials out of truck to staging location, and delivery acceptance is by the Contractor who is responsible for the material.
23. Contractor is responsible for storage of all materials. Deliver materials to the site as needed. Storage in the building will be limited. Materials in building must be on pallets or material/pipe carts.
24. Stocking of material on floors will be limited to a three (3) day maximum in the area of work, if approved by Barton Malow Builders Superintendent. No other material storage will be allowed in the building.
25. All materials used are to be new, unused and undamaged. Any damaged or questionable material is to be removed and replaced at no cost to the Owner or Barton Malow Builders.
26. Include all rigging and hoisting to deliver, install, and remove materials to / from all floor levels complete.
27. All crane and boom truck lifts must be properly barricaded to keep public at a safe distance. Provide ground spotters and barricading to keep public out of the swing radius of the crane or boom truck.
28. The use of the existing and/or new elevator will not be permitted.
29. This contractor is responsible for all lifts and scaffolding, if required, for work of this bid category. Coordinate use of your lifts and scaffolding with other trades.
30. Scaffolding and staging as required. Engineered installation drawings, as required.
31. Include field layout for work of this bid category, also included is field time for this contract to survey existing conditions prior to beginning each phase of work. Any discrepancies between existing conditions and the contract drawings are to be reported to Barton Malow Builders immediately.
32. Coordination drawing meetings will be scheduled. Contractor understands that Barton Malow Builders is not issuing change orders for items not coordinated with other trades. Contractor also understands any conflicts of existing structure with their new work must be brought to Barton Malow Builders and Architect/Engineer attention in advance of start of work.
33. Contractor shall have no claims for additional cost because Contractor has failed to install work in proper sequence and not in accordance with Coordination drawings. Likewise, any cost for removal of materials or damage caused by Contractors who have failed to perform their Work in the proper sequence will be borne by that Contractor.
34. Participation in coordination meeting/s, weekly progress meetings, and drawings process is mandatory. Minimum eight (8) hours per week shall be included for meetings and coordination with Barton Malow Builders. Representative must be able to make all decisions for their Company and Contractors.
35. Contractor to have one (1) full time on-site superintendent, for the duration of the project. The assigned personnel will be responsible to manage the "entire" scope of work including their Subcontractors/Suppliers and will be the single point of contact for this scope of work. Contractor will be responsible to complete the daily report & JHA form each day including for their Subcontractors regardless if the Contractor has self-perform crews on site or not. Representative must be able to make all field & financial decisions. If full time supervision is not onsite by the Contractor, their Subcontractors

- will be told to leave the site until the next calendar working day. Contractor will be held responsible for delays and back charged due to lack of project supervision.
36. Contractor is to provide site Supervision and Foreman an Apple iPad with unlimited data/cellular plan service. It is required that Contractor download Bluebeam and Autodesk Build via the app store on each device. Contractor may access Owner guest Wi-Fi network if available.
 37. Contractor must complete and submit electronic daily Flypaper reports and pre-task plans via Autodesk Build to Barton Malow Builders on a daily basis. These reports must show total number of manpower, total number of hours, and each day's specific activities. If this is not done, Barton Malow Builders reserves the right to withhold this Contractor's monthly payments until satisfied with this Contractor's response.
 38. Items shown to be turned over on the project documents and for closeout attic stock to Owner must be accompanied by a transmittal and copied with signature of receipt to Barton Malow Builders. If a transmittal is not provided and Owner's items are missing, it is this contractor's responsibility to purchase and replace with new materials.
 39. Contractor is responsible for the quality control for work of this bid category (including for their subordinate parties). Contractor is to strictly observe tolerances and to maintain strict quality control throughout the execution of his work. All work is to be checked for compliance at each stage of completion per applicable codes, project drawings, specifications, and manufactures shop drawings/written instructions. Any work that is not within specified tolerances is to be removed and replaced.
 40. Locate all underground utilities (public and private) prior to any excavation and temporary road/staging area install. Note that Miss Dig will not locate private utilities on the Owner's property. It is the responsibility of this contractor to hire an outside firm and locate private utilities. Damage to existing utilities, public or private, including communication and parking/walkway lighting lines caused by work of this bid category will be the responsibility of this contractor. Contractor will be responsible for all fees to restore the utilities and temporary measures needed until repairs are made.
 41. Ticket work is to be signed and approved by Barton Malow Builders at the end of each workday. Tickets not reviewed or signed by the Barton Malow Builders Superintendent will not be accepted or processed. Pricing is to have detailed explanations of work performed. Barton Malow Builders directed ticket work shall NOT include foreman time, work/service truck, cartage, or overhead and profit mark-up. Tickets shall include only approved labor and materials used. Signature from Barton Malow Builders Superintendent does not necessarily equal additional funds. Barton Malow Builders Project Manager will decide if ticket work is added scope to the contract.
 42. All change pricing is to be submitted within ten (10) days from receipt of the change vehicle, unless otherwise agreed by Barton Malow Builders or Owner. All change order pricing is to include a detailed breakdown of costs – Material, Labor, Equipment, etc. along with any signed work orders. No lump sum pricing allowed. Change order pricing will not be accepted without a detailed breakdown. Failure to submit change order pricing within ten (10) days will result in a \$0 change order.
 43. Provide all cutting/patching, coring, patching of penetrations, and block-outs for work of this bid category. This is to include but not limited to cutting and patching of all openings in deck (concrete or metal) if required. Patch walls where adjacent existing walls were removed. Patch and repair work is to be done professionally by trained, skilled craftsmen.
 44. Provide and install temporary protection for all excavations, floor, or roof openings created by work of this bid category. Temp protection shall be installed per OSHA standards with robust, securely fixed and clearly marked (e.g. 'Hole below - do not remove') covers to prevent the fall of materials or persons through them. Covers should be constructed to be removable sections and that they do not present a tripping hazard.
 45. Contractor is responsible for all dewatering and snow/ice removal necessary to complete this Scope of Work.
 46. Cleanup is to be performed continuously as work is progressing. This means cleaning up each and every hour. This includes the removal of debris, sweeping (Contractor to

provide sweeping compound), wiping down of all finished surfaces, and the proper storage of unused equipment and materials. Cleanup not performed by the Contractor will be completed by a third party (chosen by Barton Malow Builders) and back charged accordingly. Written warnings will not be issued.

47. Contractor shall participate in the Composite Cleanup Crew as described in the project manual. These requirements are in addition to normal daily cleaning responsibilities and costs for this are included in the contract price.
48. Include all cost to comply with the latest State of Michigan Executive Order, OSHA requirements, Local Jurisdiction Requirements, Owners Requirements, whichever is more stringent, related to COVID-19 PPE, social distancing, and all other requirements for your workers and subordinate parties. This shall include identifying your competent Covid 19 supervisor that will review, monitor, and enforce all requirements. In addition, each worker onsite is required to sign in each day prior to work using the Barton Malow QR Reader Questionnaire on a smart phone or tablet.

F. Specific Scope:

1. Temporary Measures:
 - a. Provide and install protection board or other material as required to protect all materials from damage.
 - b. Receive, handle, protect and properly store all materials prior to installation. Storage of materials shall be in a separate field container located as directed by Barton Malow Builders.
2. Temporary Lighting:
 - a. Contractor shall provide task lighting and temporary light stands as necessary.
3. Coordination and Layout
 - a. Actively participate in Mechanical, Electrical and Plumbing (M/E/P) overhead coordination process per the Barton Malow Builders Project Manual, and coordinate the installation of this Contractor's work to allow installation and access to all other M/E/P and architectural/structural supports. Installed piping must be placed where determined in the overhead coordination process; deviations will not be acceptable and will be at the Contractors' expense to correct if found in the field.
 - b. Contractor will be responsible for the complete coordination of work of this bid category with all other trades to identify and resolve conflicts. Any and all financial implications emanating from this Contractor's lack of planning and coordination will be borne by this Contractor. This shall include blocking, backing conduits, sleeves, penetrations, and any other appurtenances which may not be specifically identified by the contract documents but are required to complete this scope of work.
 - c. This Contractor is responsible for all detailed layout required for proper location and coordination of work.
 - d. Contractor shall review the critical dimensions and elevations of all work and shall otherwise verify the conformity of existing work to the Contract Documents and to its suitability. Contractor shall promptly submit a written statement to Barton Malow Builders and Architect/Engineer noting any discrepancies or unacceptable conditions as they relate to its work
 - e. Contractor shall attend all meetings as required to properly coordinate its Work with that of Others. Coordination efforts should be focused on minimizing any post-installation damage and required patching operations.
 - f. Contractor shall visit the site and attend meetings as required to properly coordinate the Work.
 - 1) Coordination efforts should be focused on minimizing any post-installation damage and required patching operations.
4. Contractor shall include multiple mobilizations to complete the Work.
5. Specialties
 - a. All finishes are to be per the Contract Documents.
 - b. Installations shall be per manufactures written instructions.

- c. Provide all adjusting and cleaning shall be performed as specified at the end of each spec section.
 - d. Provide all adjusting and cleaning shall be performed as specified at the end of each spec section.
 - e. Provide and install all window blinds complete.
- G. Exclusions
- 1. Demolition of existing blinds
 - 2.

1.04 SPECIAL CONSIDERATIONS:

- A. Labor Rates/Unit Prices/Alternates: Provide the following information on the bid form:
- B. Labor/Equipment Rates:
 - 1. This Contractor is to provide as a part of his proposal a fully detailed labor rates for Barton Malow Builders approval for work associated with this Contractor's and for each of their Subordinate Parties Trades. In addition, labor rates will be required for all equipment involved with the performance of the work required by this Bid Category.
- C. Unit Pricing:
 - 1. NA
- D. Allowances: This Contractor must obtain written authorization from Barton Malow Builders prior to performing the associated work below. Include in this Contractor's bid, allowances for work as follows.
 - 1. Provide Allowance for the following
 - a. NA
- E. Alternates: This bidder shall be required to submit alternate prices identified in the contract documents which pertain to their work. These alternate prices shall be separate from their base bid on the bid proposal form.

END OF SECTION

**SECTION 002222.02
MECHANICAL - SCOPE OF WORK**

**A. BID PACKAGE 23 0000
A. BID CATEGORY – MECHANICAL**

PART 1 GENERAL

1.01 THE WORK OF THIS BID CATEGORY INCLUDES BUT IS NOT LIMITED TO PROVIDING ALL SUPERVISION, LABOR, EQUIPMENT, MATERIALS, TAXES, BONDS, INSURANCE, SCAFFOLDING, HOISTING AND INCIDENTALS TO COMPLETE THE WORK PER ALL CONTRACT DOCUMENTS FOR THE BARNARD, BEMIS, HILL, AND IAE EXTERIOR DOOR AND WINDOW UPGRADES AS DEFINED BY THE BID PACKAGE NO. 33, BID SCOPE DOCUMENT INCLUDING ITS SUPPLEMENTARY DOCUMENTS AND IN ACCORDANCE WITH ANY APPLICABLE CODES. ALL WORK IS TO BE PERFORMED AS SHOWN ON THE PLANS AND AS SPECIFIED IN THE FOLLOWING TECHNICAL SPECIFICATION SECTIONS:

I.
I.

- A. Division 0 - Procurement and Contracting Complete
- B. Division 01 – General Requirements Complete
- C. Division 02 – Existing Conditions
 - 1. 02 4120 As Applicable
- D. Division 07 – Thermal and Moisture Protection
 - 1. 07 9200 As Applicable
- E. Division 08 – Openings
 - 1. 08 9000 As Applicable

1.
1.

I. IN ADDITION TO THE ABOVE, THIS BID CATEGORY INCLUDES BUT IS NOT LIMITED TO THE BIDDING DOCUMENTS, THE BIDDING AND CONTRACT REQUIREMENTS AND DIVISION 1 GENERAL REQUIREMENTS OF THE BARTON MALOW BUILDERS PROJECT MANUAL AND VARIOUS OTHER DOCUMENTS AND TECHNICAL SPECIFICATIONS INTERFACING WITH THIS WORK PROVIDED BY THE OWNER, ARCHITECT AND/OR ENGINEERS. THE BIDDER IS ADVISED TO REVIEW THE WORK DESCRIPTIONS OF THE OTHER CATEGORIES SO AS NOT TO MISUNDERSTAND SCOPE RESPONSIBILITIES.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

I. THE SCOPE OF WORK WILL INCLUDED AND IS NOT LIMITED TO THE FOLLOWING ITEMS:

- A. Performance of the Work shall be in accordance with all Division 01 – General Requirements.
- B. Refer to the Project Manual for additional bidding and project general requirements and conditions.
- C. In addition to the requirements set forth in Division 01 – General Requirements, the Work shall include the following:
 - 1. Additional Meetings & Quality Control Requirements:
 - a. Mockups
 - b. Additional Photographic documentation, etc.
 - c. As-builts for MEP, etc. coordination

D. Submittals/Close Out:

1. Submit all start-up documents, and product submittals on materials & products within two (2) weeks weeks after Notice to Proceed (NTP).
2. Submit all shop drawings in accordance with the contract documents and all code requirements within two (2) weeks after Notice to Proceed (NTP).
3. All equipment, products, & materials that are installed without submittal approval and not acceptable by the Architect/Engineer and Owner will be removed at the installing Contractors cost. Contractor will be held responsible for all back charges caused by the project delay to the Owner and Trades working onsite due to no specified material/equipment install and/or lack of or late submittal approvals.
4. Engineered shop drawings must be signed and sealed by a Registered Engineer in accordance with contract documents and state law.
5. Contractor shall include all cost necessary for as-built, asset sheet data spreadsheet, closeout documents (including O&M manuals, valve charts, guarantees or warranties on equipment and/or materials, testing and system check-out or approval, and Owner's training as required) per the Contract Documents.
6. Contractor to provide additional manpower dedicated to Barton Malow Builders to complete Barton Malow Builders punch list work for a minimum of ten (10) working days prior to the listed Architect/Engineer project punch list in the project schedule. This manpower will be under the direction of the Barton Malow Builders Superintendent to complete punch list work of their bid category and will report directly to the Barton Malow Builders each day. Failure to provide required manpower may result in a delay in receiving the Contractor's progress payment from Barton Malow Builders.
7. Architect/Engineer's punch list will not start until all work has complete been completed.
8. Contractor may not drop retainage to 5% until work of this bid category is substantially complete according to the contract documents. In addition, all warranties, o/m manuals, testing, commissioning, training, extra materials, and punch list items have been completed, turned over, accepted, and documented. Contractors must also have up to date partial and final waivers from all Contractors, suppliers, and other Subordinate Parties including a AIA G707a Consent of Surety to partial reduction in retainage form signed and sealed by the Surety.
9. To bill out the remainder of retainage (from 5% to 0%), the Contractor must set up a meeting with Barton Malow Builders to go over and/or collect the remaining closeout items for final payment as specified in the project manual and submit a AIA G707 Consent of Surety for final payment form signed and sealed by the Surety.

E. General Scope:

1. Contractor is to incorporate all project bidding documents into their subordinate party agreements.
2. All bidders are required to review the General Conditions of the Contract located in the project manual.
3. Contractor is to be licensed to perform work in the State of Michigan. This includes all Contractors and 2nd or 3rd (etc.) tiered Contractors.
4. Contractor shall maintain on site, a copy of all applicable code books specifically pertaining to this scope of work. These code books are to follow the city, state, and all other authorities having jurisdiction per the specific year each authority has designated for this particular project. This Contractor is responsible for all research and compliance with all applicable regulations.
5. This Contractor is responsible to coordinate with Barton Malow Builders to schedule inspections with the Local Governing Agency and/or the State of Michigan as well as the testing agency. Inspection results and records will be kept in the Barton Malow Builders jobsite office. During all inspections each Contractor is to have a Foreman/Superintendent on site.
6. Contractor must verify that work installed by others, complies in its entirety with the contract documents prior to commencing their work, which ties in, overlays and/or

- follows the installed work. Any non-conforming work shall be identified in writing to Barton Malow Builders immediately.
7. Anyone listed on the National Sex Offender List is not allowed to be a part of this project and anyone who is convicted of a listed offense will be immediately dismissed from project. Provide photo identification upon arriving to the site and badges are to be worn by Contractor's field personnel at all times.
 8. Contractor shall have their Superintendent/Foreperson attend a daily coordination meeting every morning from 6:45am - 7:00am. Participation is mandatory. Project daily working hours are Monday – Friday, Site Opens @ 6:00am and closes at 2:30pm . Weekend work as well as overtime is highly discouraged and not preferred. Plan your work and associated activities accordingly. There will be a 5-day minimum work week. Any work performed outside normal working hours requires approval from Barton Malow Builders. Should scheduled workdays or production be lost due to inclement weather or this Contractor's delays, overtime during the work week at this Contractor's expense, will be required to maintain the project schedule.
 9. Contractor is only to take direction from Barton Malow Builders.
 10. Review all specifications and project drawings, drawing notes, schedules, and schedule notes for areas requiring work described by this bid category and coordinate work with the respective contractors, include all costs in base bid.
 11. Include all manpower, overtime, composite crews and mobilizations in base bid to complete work per the project schedule. All mobilizations required to complete this Scope of Work have been included in the base contract price, unless specifically addressed otherwise in this Contract Agreement. It is understood and agreed that this work may not be performed in a continuous operation and during normal business hours. This contractor has included the cost of the multiple mobilizations/remobilizations and cost to work during non-normal business hours.
 12. Contractor will be required to perform after-hours and overtime work as necessary to minimize disruption to Troy School District.
 13. If Contractor is behind schedule and is notified by Barton Malow Builders, the Contractor shall be required to accelerate the work at its own expense. The Contractor shall employ such means as overtime work, multiple work shifts, and additional equipment, and shall continue to do so until the progress of the work, in the opinion of Barton Malow Builders, is in conformance with the master project construction schedule.
 14. Provide and install all materials per the construction documents. Bid proposals must be per plan and specs. Bids not conforming to plans and specifications will be rejected. Substitutions must be pre-approved in writing prior to bids or be submitted as voluntary alternates on the bid form.
 15. Contractor must include costs and utilize Autodesk Build and Textura for this project. Information and cost for Textura can be found in section 012000-Price and Payment Procedures and Autodesk Build in section 013000-Administrative Requirements.
 16. All contractors are to field verify all existing conditions prior to submitting a bid. Submitting a bid is acceptance of all field conditions. Do NOT scale the drawings.
 17. If there are discrepancies between the project drawings, specifications, work scopes, or project manual, the Contractor shall include the most stringent (expensive) cost in base bid.
 18. This project surrounded by Troy School District staff and students. Contractor is to take proper measures to ensure minimal disruptions to the roads and sidewalks around the project. Contractor is responsible for proper barricading and signage if his work activity interrupts the normal flow of operations around the facility. All Contractor employees and subordinate parties are to conduct themselves in a manner not to offend nor interfere with the staff, students, or any other public person. Barton Malow Builders and Troy School District Code of Conduct includes immediate termination for foul language/derogatory conversation. Those who are not in compliance will be asked to leave the project and not return.

19. Provide all temporary protection for work of this bid category. Removal of this protective material at the conclusion of the project is this contractor's responsibility.
20. Minimize disturbances to landscape areas. Excessive or malicious (as deemed by) Barton Malow Builders landscape disturbance will be the responsibility of this contractor to restore at own expense.
21. Protect equipment and finish items to remain during construction including roof, ceilings, walls, flooring, and landscaping during work of this bid category. In addition, all work being performed through ceilings, be it grid, ceiling pads, drywall or plaster, etc. must be protected from damage during work of this bid category. Correction of damage due to lack of adequate protection will be the responsibility of this contractor.
22. Deliveries must occur after 7am and prior to 2pm and not between noon and 1pm, unless scheduled with a Barton Malow Builders Superintendent or risk having the delivery turned away. Unloading, hoisting, transport of materials out of truck to staging location, and delivery acceptance is by the Contractor who is responsible for the material.
23. Contractor is responsible for storage of all materials. Deliver materials to the site as needed. Storage in the building will be limited. Materials in building must be on pallets or material/pipe carts.
24. Stocking of material on floors will be limited to a three (3) day maximum in the area of work, if approved by Barton Malow Builders Superintendent. No other material storage will be allowed in the building.
25. All materials used are to be new, unused and undamaged. Any damaged or questionable material is to be removed and replaced at no cost to the Owner or Barton Malow Builders.
26. Include all rigging and hoisting to deliver, install, and remove materials to / from all floor levels complete.
27. All crane and boom truck lifts must be properly barricaded to keep public at a safe distance. Provide ground spotters and barricading to keep public out of the swing radius of the crane or boom truck.
28. The use of the existing and/or new elevator will not be permitted.
29. This contractor is responsible for all lifts and scaffolding, if required, for work of this bid category. Coordinate use of your lifts and scaffolding with other trades.
30. Scaffolding and staging as required. Engineered installation drawings, as required.
31. Include field layout for work of this bid category, also included is field time for this contract to survey existing conditions prior to beginning each phase of work. Any discrepancies between existing conditions and the contract drawings are to be reported to Barton Malow Builders immediately.
32. Coordination drawing meetings will be scheduled. Contractor understands that Barton Malow Builders is not issuing change orders for items not coordinated with other trades. Contractor also understands any conflicts of existing structure with their new work must be brought to Barton Malow Builders and Architect/Engineer attention in advance of start of work.
33. Contractor shall have no claims for additional cost because Contractor has failed to install work in proper sequence and not in accordance with Coordination drawings. Likewise, any cost for removal of materials or damage caused by Contractors who have failed to perform their Work in the proper sequence will be borne by that Contractor.
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35. Contractor to have one (1) full time on-site superintendent, for the duration of the project. The assigned personnel will be responsible to manage the "entire" scope of work including their Subcontractors/Suppliers and will be the single point of contact for this scope of work. Contractor will be responsible to complete the daily report & JHA form each day including for their Subcontractors regardless if the Contractor has self-perform crews on site or not. Representative must be able to make all field & financial

- decisions. If full time supervision is not onsite by the Contractor, their Subcontractors will be told to leave the site until the next calendar working day. Contractor will be held responsible for delays and back charged due to lack of project supervision.
36. Contractor is to provide site Supervision and Foreman an Apple iPad with unlimited data/cellular plan service. It is required that Contractor download Bluebeam and Autodesk Build via the app store on each device. Contractor may access Owner guest Wi-Fi network if available.
 37. Contractor must complete and submit electronic daily Flypaper reports and pre-task plans via Autodesk Build to Barton Malow Builders on a daily basis. These reports must show total number of manpower, total number of hours, and each day's specific activities. If this is not done, Barton Malow Builders reserves the right to withhold this Contractor's monthly payments until satisfied with this Contractor's response.
 38. Items shown to be turned over on the project documents and for closeout attic stock to Owner must be accompanied by a transmittal and copied with signature of receipt to Barton Malow Builders. If a transmittal is not provided and Owner's items are missing, it is this contractor's responsibility to purchase and replace with new materials.
 39. Contractor is responsible for the quality control for work of this bid category (including for their subordinate parties). Contractor is to strictly observe tolerances and to maintain strict quality control throughout the execution of his work. All work is to be checked for compliance at each stage of completion per applicable codes, project drawings, specifications, and manufactures shop drawings/written instructions. Any work that is not within specified tolerances is to be removed and replaced.
 40. Locate all underground utilities (public and private) prior to any excavation and temporary road/staging area install. Note that Miss Dig will not locate private utilities on the Owner's property. It is the responsibility of this contractor to hire an outside firm and locate private utilities. Damage to existing utilities, public or private, including communication and parking/walkway lighting lines caused by work of this bid category will be the responsibility of this contractor. Contractor will be responsible for all fees to restore the utilities and temporary measures needed until repairs are made.
 41. Ticket work is to be signed and approved by Barton Malow Builders at the end of each workday. Tickets not reviewed or signed by the Barton Malow Builders Superintendent will not be accepted or processed. Pricing is to have detailed explanations of work performed. Barton Malow Builders directed ticket work shall NOT include foreman time, work/service truck, cartage, or overhead and profit mark-up. Tickets shall include only approved labor and materials used. Signature from Barton Malow Builders Superintendent does not necessarily equal additional funds. Barton Malow Builders Project Manager will decide if ticket work is added scope to the contract.
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 43. Provide all cutting/patching, coring, patching of penetrations, and block-outs for work of this bid category. This is to include but not limited to cutting and patching of all openings in deck (concrete or metal) if required. Patch walls where adjacent existing walls were removed. Patch and repair work is to be done professionally by trained, skilled craftsmen.
 44. Provide and install temporary protection for all excavations, floor, or roof openings created by work of this bid category. Temp protection shall be installed per OSHA standards with robust, securely fixed and clearly marked (e.g. 'Hole below - do not remove') covers to prevent the fall of materials or persons through them. Covers should be constructed to be removable sections and that they do not present a tripping hazard.
 45. Contractor is responsible for all dewatering and snow/ice removal necessary to complete this Scope of Work.

46. Cleanup is to be performed continuously as work is progressing. This means cleaning up each and every hour. This includes the removal of debris, sweeping (Contractor to provide sweeping compound), wiping down of all finished surfaces, and the proper storage of unused equipment and materials. Cleanup not performed by the Contractor will be completed by a third party (chosen by Barton Malow Builders) and back charged accordingly. Written warnings will not be issued.
47. Contractor shall participate in the Composite Cleanup Crew as described in the project manual. These requirements are in addition to normal daily cleaning responsibilities and costs for this are included in the contract price.
48. Include all cost to comply with the latest State of Michigan Executive Order, OSHA requirements, Local Jurisdiction Requirements, Owners Requirements, whichever is more stringent, related to COVID-19 PPE, social distancing, and all other requirements for your workers and subordinate parties. This shall include identifying your competent Covid 19 supervisor that will review, monitor, and enforce all requirements. In addition, each worker onsite is required to sign in each day prior to work using the Barton Malow QR Reader Questionnaire on a smart phone or tablet.

F. Specific Scope:

1. Temporary Measures:
 - a. For any permanent equipment that will be used for temporary work during construction, include extended warranties to cover the time the equipment is in use prior to Substantial Completion.
 - b. Provide, install, maintain, and remove temporary systems upon completion and activation for use of the permanent systems
 - c. Protect all materials from damage prior to installation.
2. Temporary Lighting:
 - a. Contractor shall provide task lighting and temporary light stands as necessary.
3. Coordination and Layout
 - a. Actively participate in Mechanical, Electrical and Plumbing (M/E/P) overhead coordination process per the Barton Malow Builders Project Manual, and coordinate the installation of this Contractor's work to allow installation and access to all other M/E/P and architectural/structural supports. Installed piping must be placed where determined in the overhead coordination process; deviations will not be acceptable and will be at the Contractors' expense to correct if found in the field.
 - b. Contractor will be responsible for the complete coordination of work of this bid category with all other trades to identify and resolve conflicts. Any and all financial implications emanating from this Contractor's lack of planning and coordination will be borne by this Contractor. This shall include blocking, backing conduits, sleeves, penetrations, and any other appurtenances which may not be specifically identified by the contract documents but are required to complete this scope of work.
 - c. This Contractor is responsible for all detailed layout required for proper location and coordination of work.
 - d. Contractor shall review the critical dimensions and elevations of all work and shall otherwise verify the conformity of existing work to the Contract Documents and to its suitability. Contractor shall promptly submit a written statement to Barton Malow Builders and Architect/Engineer noting any discrepancies or unacceptable conditions as they relate to its work
 - e. Contractor shall attend all meetings as required to properly coordinate its Work with that of Others. Coordination efforts should be focused on minimizing any post-installation damage and required patching operations.
 - f. Contractor shall visit the site and attend meetings as required to properly coordinate the Work.
 - 1) Coordination efforts should be focused on minimizing any post-installation damage and required patching operations.

- g. Coordinate installation of piping and conduit with the Electrical, Mechanical, and Temperature Control Contractors in new masonry walls.
4. Contractor shall include multiple mobilizations to complete the Work.
5. Stud and Masonry will be placed prior to mechanical and electrical overhead work.
 - a. Stud install will include installation of one side drywall top out to the corridor side.
6. HVAC
 - a. Obtain and pay for all permits and inspection fees as required for work of this category.
 - b. Drawings are diagrammatic. Provide and install all materials, offsets, transitions, fittings, etc. required for means and methods for work of this bid category.
 - c. Removal of fireproofing required for this Contractor's installation.
 - d. Replaced in its entirety all fireproofing disturbed by this Contractor's installations. Patching material shall match the material used by the Fireproofing Contractor/or existing.
 - e. This Contractor shall verify and notify Barton Malow Builders and Architect/Engineer immediately for any discrepancies in the contract documents where noted to tie into existing utilities.
- a. Demolition
 - f. Removal of gasketing on the existing plenum boxes in each unit ventilator adjacent to a louver that is called to be demolished by another contractor shown on the Barnard and Bemis Demolition drawings.
 - g. Demolition of wall louver in opening B118 on the IAE Drawings
- a. HVAC New Work
 - h. Provide and Install all interior sealants associated with work of this bid category.
 - i. Provide and install all interior and exterior Mechanical Wall Louvers including but not limited to decorative aluminum frames, insect screen, bird screen, blank-off supports, shims, flashings, backing/blocking, accessories, hardware, etc.
 - j. Provide and install a complete louver assembly with insulated back panels instead of the insulated composite panels shown per details. This should also include intermediate mullions if identified on details.
 - k. Provide and install new insulated blank off panels on existing owner supplied louvers as called out on drawings to match newly furnished louvers.
 - l. Field cut all blank off panels to match unit ventilator plenum opening. Install all gasketing and flashing required to create airtight seal between louver and unit ventilator.
 - m. Install any and all supporting brackets inside unit ventilators as required to ensure air tight seal between unit ventilator and louver.
 - n. Provide and install the following items associated with louvers such as:
 - 1) Closures and galvanized angles
 - 2) Include all plates around jambs, heads and sills.
 - 3) Backer rods and sealants at interior and exterior perimeter of installations.
 - o. Coordinate and provide to the Glazing Contractor any louvers that are to be glazed into window and curtainwall systems.
 - p. Furnish and install copper piping for condensate lines on all unit ventilators adjacent to new louver systems.
 - q. Run condensate lines through bottom frame of new window systems as called out on drawings. This contractor is responsible for creating penetrations. All condensate lines must be run at appropriate pitch to ensure proper draining.
 - r. Provide and Install all interior sealants associated with work of this bid category.
 - s. Provide and Install all through wall fire resistive firestopping spray/joint sealant per approved UL Systems for all rated wall, floor, & deck penetrations for work of this bid category. Both sides of wall, floor, or deck are to be fire stopped.
 - t. All exterior wall, floor, and roof penetrations for equipment installed under this scope of work shall be flashed and made watertight. Coordinate roof penetrations with roofing Contractor and ensure that roof warranty is not voided due to equipment installed under this scope.

- u. Where this Contractor penetrates or disturbs an existing fire-rated, smoke rated, or sound rated penetrations or existing patches, this Contractor shall be responsible to provide and install sealing as required.
 - v. Repair in its entirety all spray or trowel applied fireproofing disturbed by work of this bid category. Patching material shall match the material used by the Fireproofing Contractor.
 - w. Provide all final mechanical connections to Owner furnished equipment on the project drawings.
 - x. All start-up and training is to be performed by a factory certified representative or manufacturer (as required per specification section) for that specific piece of equipment.
7. Contractor shall remove caps and/or rework ends of piping left in place by other Contractors for connection to this Contractor 's work.
- G. Exclusions:
- 1. Removal of all louvers except for opening B118 called out on the IAE Drawings
 - 2.

3.02 SPECIAL CONSIDERATIONS:

- A. Labor Rates/Unit Prices/Alternates: Provide the following information on the bid form:
- B. Labor/Equipment Rates:
 - 1. This Contractor is to provide as a part of his proposal a fully detailed labor rates for Barton Malow Builders approval for work associated with this Contractor's and for each of their Subordinate Parties Trades. In addition, labor rates will be required for all equipment involved with the performance of the work required by this Bid Category.
- C. Unit Pricing:
 - 1. NA
- D. Allowances: This Contractor must obtain written authorization from Barton Malow Builders prior to performing the associated work below. Include in this Contractor's bid, allowances for work as follows.
 - 1. Provide Allowance for the following
 - a. NA
- E. Alternates: This bidder shall be required to submit alternate prices identified in the contract documents which pertain to their work. These alternate prices shall be separate from their base bid on the bid proposal form.

END OF SECTION

**SECTION 002226.01
ELECTRICAL - SCOPE OF WORK**

BID PACKAGE 26 0000

BID CATEGORY – ELECTRICAL

A. BID CATEGORY – ELECTRICAL

GENERAL

3.01 THE WORK OF THIS BID CATEGORY INCLUDES BUT IS NOT LIMITED TO PROVIDING ALL LABOR, EQUIPMENT, MATERIALS, SCAFFOLDING, HOISTING AND INCIDENTALS TO COMPLETE THE WORK PER ALL CONTRACT DOCUMENTS FOR THE BARNARD, BEMIS, HILL, AND IAE EXTERIOR DOOR AND WINDOW UPGRADES PROJECT AS DEFINED BY THE BID PACKAGE NO. 33 BID/WORK SCOPE DOCUMENT INCLUDING ITS SUPPLEMENTARY DOCUMENTS AND IN ACCORDANCE WITH ANY APPLICABLE CODES. ALL WORK IS TO BE PERFORMED AS SHOWN ON THE PLANS AND AS SPECIFIED IN THE FOLLOWING TECHNICAL SPECIFICATION SECTIONS:

I.

I.

- A. Division 0 - Procurement and Contracting Complete
- B. Division 01 – General Requirements Complete
- C. Division 02 – Existing Conditions
 - 1. 02 4120 As Applicable
- D. Division 28 – Electronic Safety and Security
 - 1. 28 3100 As Applicable

1.

1.

I. IN ADDITION TO THE ABOVE, THIS BID CATEGORY INCLUDES BUT IS NOT LIMITED TO THE BIDDING DOCUMENTS, THE BIDDING AND CONTRACT REQUIREMENTS AND DIVISION 1 GENERAL REQUIREMENTS OF THE BARTON MALOW BUILDERS PROJECT MANUAL AND VARIOUS OTHER DOCUMENTS AND TECHNICAL SPECIFICATIONS INTERFACING WITH THIS WORK PROVIDED BY THE OWNER, ARCHITECT AND/OR ENGINEERS. THE BIDDER IS ADVISED TO REVIEW THE WORK DESCRIPTIONS OF THE OTHER CATEGORIES SO AS NOT TO MISUNDERSTAND SCOPE RESPONSIBILITIES.

PRODUCTS – NOT USED

4.01 EXECUTION

I. THE SCOPE OF WORK WILL INCLUDE AND IS NOT LIMITED TO THE FOLLOWING ITEMS:

- A. Performance of the Work shall be in accordance with all Division 01 – General Requirements.
- B. Refer to the Project Manual for additional bidding and project general requirements and conditions.
- C. In addition to the requirements set forth in Division 01 – General Requirements, the Work shall include the following:
 - 1. Additional Meetings & Quality Control Requirements:
 - a. Coordination drawings & As-builts for MEP, etc.
- D. **Submittals/Close Out:**
 - 1. Submit all start-up documents, and product submittals on materials & products within two (2) weeks weeks after Notice to Proceed (NTP).
 - 2. Coordinate and distribute AutoCAD Electrical piping & equipment coordination drawings with the Architectural, Fire Suppression, Plumbing, and HVAC Contractors to avoid interferences. Final AutoCAD coordination drawings from each trade is to be

consolidated and submitted by the HVAC Contractor for Architect/Engineer approval. Lack of, or delay in coordination with other Trades will result in a back charge to maintain project schedule. Coordination drawings must be approved by the Architect/Engineer prior to submission of shop drawings.

3. Submit all shop drawings in accordance with the contract documents and all code requirements within two (2) weeks after Notice to Proceed (NTP).
4. All equipment, products, & materials that are installed without submittal approval and not acceptable by the Architect/Engineer and Owner will be removed at the installing Contractors cost. Contractor will be held responsible for all back charges caused by the project delay to the Owner and Trades working onsite due to no specified material/equipment install and/or lack of or late submittal approvals.
5. Engineered shop drawings must be signed and sealed by a Registered Engineer in accordance with contract documents and state law.
6. Contractor shall include all cost necessary for as-built, asset sheet data spreadsheet, closeout documents (including O&M manuals, valve charts, guarantees or warranties on equipment and/or materials, testing and system check-out or approval, and Owner's training as required) per the Contract Documents.
7. Contractor to provide additional manpower dedicated to Barton Malow Builders to complete Barton Malow Builders punch list work for a minimum of ten (10) working days prior to the listed Architect/Engineer project punch list in the project schedule. This manpower will be under the direction of the Barton Malow Builders Superintendent to complete punch list work of their bid category and will report directly to the Barton Malow Builders each day. Failure to provide required manpower may result in a delay in receiving the Contractor's progress payment from Barton Malow Builders.
8. Architect/Engineer's punch list will not start until all work has complete been completed.
9. Contractor may not drop retainage to 5% until work of this bid category is substantially complete according to the contract documents. In addition, all warranties, o/m manuals, testing, commissioning, training, extra materials, and punch list items have been completed, turned over, accepted, and documented. Contractors must also have up to date partial and final waivers from all Contractors, suppliers, and other Subordinate Parties including a AIA G707a Consent of Surety to partial reduction in retainage form signed and sealed by the Surety.
10. To bill out the remainder of retainage (from 5% to 0%), the Contractor must set up a meeting with Barton Malow Builders to go over and/or collect the remaining closeout items for final payment as specified in the project manual and submit a AIA G707 Consent of Surety for final payment form signed and sealed by the Surety.

E. General Scope:

1. Contractor is to incorporate all project bidding documents into their subordinate party agreements.
2. All bidders are required to review the General Conditions of the Contract located in the project manual.
3. Contractor is to be licensed to perform work in the State of Michigan. This includes all Contractors and 2nd or 3rd (etc.) tiered Contractors.
4. Contractor shall maintain on site, a copy of all applicable code books specifically pertaining to this scope of work. These code books are to follow the city, state, and all other authorities having jurisdiction per the specific year each authority has designated for this particular project. This Contractor is responsible for all research and compliance with all applicable regulations.
5. This Contractor is responsible to coordinate with Barton Malow Builders to schedule inspections with the Local Governing Agency and/or the State of Michigan as well as the testing agency. Inspection results and records will be kept in the Barton Malow Builders jobsite office. During all inspections each Contractor is to have a Foreman/Superintendent on site.

6. Contractor must verify that work installed by others, complies in its entirety with the contract documents prior to commencing their work, which ties in, overlays and/or follows the installed work. Any non-conforming work shall be identified in writing to Barton Malow Builders immediately.
7. Anyone listed on the National Sex Offender List is not allowed to be a part of this project and anyone who is convicted of a listed offense will be immediately dismissed from project. Provide photo identification upon arriving to the site and badges are to be worn by Contractor's field personnel at all times.
8. Contractor shall have their Superintendent/Foreperson attend a daily coordination meeting every morning from 6:45am - 7:00am. Participation is mandatory. Project daily working hours are Monday – Friday, Site Opens @ 5:30am and closes at 2:30pm . Weekend work as well as overtime is highly discouraged and not preferred. Plan your work and associated activities accordingly. There will be a 5-day minimum work week. Any work performed outside normal working hours requires approval from Barton Malow Builders. Should scheduled workdays or production be lost due to inclement weather or this Contractor's delays, overtime during the work week at this Contractor's expense, will be required to maintain the project schedule.
9. Contractor is only to take direction from Barton Malow Builders.
10. Review all specifications and project drawings, drawing notes, schedules, and schedule notes for areas requiring work described by this bid category and coordinate work with the respective contractors, include all costs in base bid.
11. Include all manpower, overtime, composite crews and mobilizations in base bid to complete work per the project schedule. All mobilizations required to complete this Scope of Work have been included in the base contract price, unless specifically addressed otherwise in this Contract Agreement. It is understood and agreed that this work may not be performed in a continuous operation and during normal business hours. This contractor has included the cost of the multiple mobilizations/remobilizations and cost to work during non-normal business hours.
12. Contractor will be required to perform after-hours and overtime work as necessary to minimize disruption to Troy School District.
13. If Contractor is behind schedule and is notified by Barton Malow Builders, the Contractor shall be required to accelerate the work at its own expense. The Contractor shall employ such means as overtime work, multiple work shifts, and additional equipment, and shall continue to do so until the progress of the work, in the opinion of Barton Malow Builders, is in conformance with the master project construction schedule.
14. Provide and install all materials per the construction documents. Bid proposals must be per plan and specs. Bids not conforming to plans and specifications will be rejected. Substitutions must be pre-approved in writing prior to bids or be submitted as voluntary alternates on the bid form.
15. Contractor must include costs and utilize Autodesk Build and Textura for this project. Information and cost for Textura can be found in section 012000-Price and Payment Procedures and Autodesk Build in section 013000-Administrative Requirements.
16. All contractors are to field verify all existing conditions prior to submitting a bid. Submitting a bid is acceptance of all field conditions. Do NOT scale the drawings.
17. If there are discrepancies between the project drawings, specifications, work scopes, or project manual, the Contractor shall include the most stringent (expensive) cost in base bid.
18. This project surrounded by Troy School District staff and students. Contractor is to take proper measures to ensure minimal disruptions to the roads and sidewalks around the project. Contractor is responsible for proper barricading and signage if his work activity interrupts the normal flow of operations around the facility. All Contractor employees and subordinate parties are to conduct themselves in a manner not to offend nor interfere with the staff, students, or any other public person. Barton Malow Builders and Troy School District Code of Conduct includes immediate termination for

- foul language/derogatory conversation. Those who are not in compliance will be asked to leave the project and not return.
19. Provide all temporary protection for work of this bid category. Removal of this protective material at the conclusion of the project is this contractor's responsibility.
 20. Minimize disturbances to landscape areas. Excessive or malicious (as deemed by) Barton Malow Builders landscape disturbance will be the responsibility of this contractor to restore at own expense.
 21. Protect equipment and finish items to remain during construction including roof, ceilings, walls, flooring, and landscaping during work of this bid category. In addition, all work being performed through ceilings, be it grid, ceiling pads, drywall or plaster, etc. must be protected from damage during work of this bid category. Correction of damage due to lack of adequate protection will be the responsibility of this contractor.
 22. Deliveries must occur after 7am and prior to 2pm and not between noon and 1pm, unless scheduled with a Barton Malow Builders Superintendent or risk having the delivery turned away. Unloading, hoisting, transport of materials out of truck to staging location, and delivery acceptance is by the Contractor who is responsible for the material.
 23. Contractor is responsible for storage of all materials. Deliver materials to the site as needed. Storage in the building will be limited. Materials in building must be on pallets or material/pipe carts.
 24. Stocking of material on floors will be limited to a three (3) day maximum in the area of work, if approved by Barton Malow Builders Superintendent. No other material storage will be allowed in the building.
 25. All materials used are to be new, unused and undamaged. Any damaged or questionable material is to be removed and replaced at no cost to the Owner or Barton Malow Builders.
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- form each day including for their Subcontractors regardless if the Contractor has self-perform crews on site or not. Representative must be able to make all field & financial decisions. If full time supervision is not onsite by the Contractor, their Subcontractors will be told to leave the site until the next calendar working day. Contractor will be held responsible for delays and back charged due to lack of project supervision.
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 37. Contractor must complete and submit electronic daily Flypaper reports and pre-task plans via Autodesk Build to Barton Malow Builders on a daily basis. These reports must show total number of manpower, total number of hours, and each day's specific activities. If this is not done, Barton Malow Builders reserves the right to withhold this Contractor's monthly payments until satisfied with this Contractor's response.
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 40. Locate all underground utilities (public and private) prior to any excavation and temporary road/staging area install. Note that Miss Dig will not locate private utilities on the Owner's property. It is the responsibility of this contractor to hire an outside firm and locate private utilities. Damage to existing utilities, public or private, including communication and parking/walkway lighting lines caused by work of this bid category will be the responsibility of this contractor. Contractor will be responsible for all fees to restore the utilities and temporary measures needed until repairs are made.
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 43. Provide all cutting/patching, coring, patching of penetrations, and block-outs for work of this bid category. This is to include but not limited to cutting and patching of all openings in deck (concrete or metal) if required. Patch walls where adjacent existing walls were removed. Patch and repair work is to be done professionally by trained, skilled craftsmen.
 44. Provide and install temporary protection for all excavations, floor, or roof openings created by work of this bid category. Temp protection shall be installed per OSHA standards with robust, securely fixed and clearly marked (e.g. 'Hole below - do not remove') covers to prevent the fall of materials or persons through them. Covers should be constructed to be removable sections and that they do not present a tripping hazard.

45. Contractor is responsible for all dewatering and snow/ice removal necessary to complete this Scope of Work.
46. Cleanup is to be performed continuously as work is progressing. This means cleaning up each and every hour. This includes the removal of debris, sweeping (Contractor to provide sweeping compound), wiping down of all finished surfaces, and the proper storage of unused equipment and materials. Cleanup not performed by the Contractor will be completed by a third party (chosen by Barton Malow Builders) and back charged accordingly. Written warnings will not be issued.
47. Contractor shall participate in the Composite Cleanup Crew as described in the project manual. These requirements are in addition to normal daily cleaning responsibilities and costs for this are included in the contract price.
48. Include all cost to comply with the latest State of Michigan Executive Order, OSHA requirements, Local Jurisdiction Requirements, Owners Requirements, whichever is more stringent, related to COVID-19 PPE, social distancing, and all other requirements for your workers and subordinate parties. This shall include identifying your competent Covid 19 supervisor that will review, monitor, and enforce all requirements. In addition, each worker onsite is required to sign in each day prior to work using the Barton Malow QR Reader Questionnaire on a smart phone or tablet.

F. Specific Scope:

1. Obtain and pay for all permits and inspection fees as required for work of this category.
2. Obtain and pay for any low volt permits required for work of this bid category.
3. Provide and install a complete, operational, and code compliant Electrical and Fire Alarm System for all designated building areas per the Contract Documents. Drawings are diagrammatic. All materials, offsets, fittings, act. required for means and methods are to be included.
4. Contractor shall include multiple mobilizations to complete the Work.
5. Notification to Barton Malow Builders and Architect/Engineer of any non-code compliant items noticed during installation.
6. Protections
 - a. Maintain an effective lock-out tag-out procedure throughout the duration of the Project.
 - b. Protection of work prior to dry-in
7. Final Cleaning:
 - a. This Contractor shall clean all dust and debris created by any work in this scope at the end of every day.
8. Coordination and Layout
 - a. Contractor will be responsible for the complete coordination of work of this bid category with all other trades to identify and resolve conflicts. Any and all financial implications emanating from this Contractor's lack of planning and coordination will be borne by this Contractor. This shall include blocking, backing conduits, sleeves, penetrations, and any other appurtenances which may not be specifically identified by the contract documents but are required to complete this scope of work.
 - b. Contractor shall review the critical dimensions and elevations of all work and shall otherwise verify the conformity of existing work to the Contract Documents and to its suitability. Contractor shall promptly submit a written statement to Barton Malow Builders and Architect/Engineer noting any discrepancies or unacceptable conditions as they relate to its work
 - c. Contractor shall attend all meetings as required to properly coordinate its Work with that of Others. Coordination efforts should be focused on minimizing any post-installation damage and required patching operations.
 - d. Contractor shall visit the site and attend meetings as required to properly coordinate the Work.
 - 1) Coordination efforts should be focused on minimizing any post-installation damage and required patching operations.

9. This Contractor is responsible for all detailed layout required for proper location and coordination of work. This includes work to coordinate:
 - a. This Contractor to coordinate fire alarm and raceway locations.
 - b. Location of devices provided in Contract Drawings are not final/exact. This Contractor is responsible to coordinate with Architect/Engineer and other trades final location of all devices.
10. Work in New and Existing Buildings
 - a. All utility connection, disconnections, tie-ins, crossovers, shutdowns and similar work must be performed and scheduled so they will not interfere with other work. It may be necessary to make these changes during "off" hours, on weekends, or it may be necessary to make "hot tap" connections. Contractor should include premium time for this work. Coordinate with the Barton Malow Builders and Owner prior to performing this work.
 - b. Coordinate tie-ins with Barton Malow Builders and Owner. Shutdown of the existing system will require a minimum forty-eight (48) hour notice. Systems will be required to be functional by the end of each work day.
11. Demolition
 - a. Cut, cap, tag, and make systems safe for the removal in all buildings/areas. "Make safe" includes physical disconnection from any equipment/components that are existing to remain.
 - b. Investigate areas prior to demolition activities, reroute and relocate existing services required for occupied operation. Cut, cap, and make safe, any existing electrical systems prior to any demolition. Properly identify and mark any system and its components that are to be removed by others.
 - c. Removal of key notes 6 for reinstallation by this Contractor shown on the Demolition drawings.
 - d. Contractor shall include any masonry patching required for penetrations through existing walls, including those walls in which conduit is removed.
 - e. Responsibility for removal and replacement of all ceiling tiles for above ceiling work. Ceiling tiles shall be put back into place as soon as your work is completed or at the end of each workday. This Contractor will be charged for any damages he causes to the acoustical ceiling system or ceiling tiles.
12. Electrical New Work
 - a. Reinstall all fire alarm devices and wiring as necessary per working documents.
 - b. Provide protection of all equipment and materials supplied under this contract. Damage to equipment due to lack of adequate protection will be the responsibility of this Contractor.
 - c. All equipment shall bear Underwriters Laboratory assembly labels.
 - d. This Contractor shall be responsible for all hangers, rods, trapeze, strut, fasteners, isolators, embeds, plates, anchors, sway bars, spreaders, stands, supports and accessories associated with this scope of Work.
 - e. Coordinate the locations and gain approval of locations from the design team prior to installation.
 - f. Provide and install all equipment tagging as required for the Electrical and Fire Alarm systems.
 - g. Provide and Install all interior sealants associated with work of this bid category.
 - h. Specialty systems, including fire alarm as indicated on the documents.
13. Fire Alarm
 - a. Coordination of all Fire Alarm requirements with the Glass and Glazing Contractor. Additional costs incurred which are associated with un-coordinated work, is the responsibility of this Contractor.
 - b. Fire Detection and Alarm
 - 1) Remove and reinstall a complete code compliant and operable fire alarm system per the Contract Documents.
 - (a) Provide fire alarm shop drawings as approved by a certified electrical engineer within 4-weeks of award of contract. Drawings shall be

stamped by an engineer licensed in the State of Michigan. Submit shop drawings to Architect/Engineer for approval after receiving approval by the State of Michigan Office of Fire Safety and the Owner's Insurance Agency. Pay for all fees and testing charges in conjunction with the testing of each system.

- (b) Interface with other trades/systems
- (c) Phased testing and turn-over is required per the master construction schedule for floor completions.
- (d) Provide connections back to Owner's existing system, including modification and reprogramming of same.
- (e) All reprogramming of the fire alarm system to keep it functioning for the areas remaining in operation.

14. Training and Acceptance Testing

- a. Prior to completion:
 - 1) Perform Final Cleaning just prior to Training and Testing
 - 2) Provide finish coatings and touch up of electrical equipment as specified.
- b. At completion:
 - 1) Assist in performance and document testing for all systems installed upon completion of systems and per specifications.
 - 2) Coordinate and participate with the independent Balancing Contractor.
 - 3) Provide final connections, testing and start-up of all equipment and assist Owner's Commissioning Agent with facility commissioning.
 - 4) Participate in the Owner's commissioning process and instruct the Owner's maintenance personnel in proper service and operation of the system as required in the specifications and/or as directed by Barton Malow Builders.
 - 5) Provide Owner training for all systems installed in this scope of work. Follow project specifications for training requirements. In the event the project Specifications are not clear, Contractor shall provide a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and locations.
 - (a) Training modules shall include:
 - (1) Basis of System Design, Operational Requirements and Criteria
 - (2) Documentation: review of all documentation pertaining the scope, including O&Ms, Record Documents, Warranties and bonds, Service Agreements, etc.
 - (3) Emergencies
 - (4) Operations of systems installed in this scope, including adjustments, troubleshooting, maintenance and repairs.
 - (b) Agenda must be approved prior to proceeding.
 - (c) Include demonstration and training video recordings. Submit video recordings on Thumb Drive.

1. Excluded:

4.02 SPECIAL CONSIDERATIONS:

- A. Labor Rates/Unit Prices/Alternates: Provide the following information on the bid form:
 - 1. Labor/Equipment Rates:
 - a. This Contractor is to provide as a part of his proposal a fully detailed labor rates for Barton Malow Builders approval for work associated with this Contractor's and for each of their Subordinate Parties Trades. In addition, labor rates will be required for all equipment involved with the performance of the work required by this Bid Category.
 - 2. Unit Pricing:
 - a. NA

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Troy , Michigan

9932
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3. Allowances: This Contractor must obtain written authorization from Barton Malow Builders prior to performing the associated work below. Include in this Contractor's bid, allowances for work as follows.
 - a. Provide Allowance for the following
 - 1) NA
4. Alternates: This bidder shall be required to submit alternate prices identified which pertain to their work. These alternate prices shall be separate from their base bid on the bid proposal form.

END OF SECTION

**SECTION 003100
AVAILABLE PROJECT INFORMATION**

PART 1 GENERAL

1.01 EXISTING CONDITIONS

- A. Data contained herein has been made available by the Owner for the Architect's use in designing the Project. Neither Owner, Architect nor Barton Malow Builders make any representation, guarantee or warranty as to the accuracy or completeness of the data, either express or implied. Bidders shall draw conclusions from the data entirely at their own risk and shall conduct all investigations and examinations of the Project site and existing conditions as necessary to verify the accuracy of the information.
- B. Certain information relating to existing surface and subsurface conditions and structures is available to bidders but will not be part of Contract Documents, as follows:
- C. Hazardous Material Survey:
 - 1. Original copy is available for inspection at Troy School District's offices during normal business hours.
- D. If not included in the attachment(s) prepared for each Bid Package, Bidders may obtain a copy of these documents by submitting a request in writing to Barton Malow Builders .

1.02 PERMITS

- A. Owner has obtained the following permits and/or approvals, that are required to be secured prior to commencement of construction work on this project:
 - 1. Building Permit.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

3.01 OBTAINMENT OF PERMITS

- A. Owner will obtain the following permits, at no cost to Barton Malow Builders or Contractor:
 - 1. Building Permit.
- B. Contractor Permit Procedures: When required to obtain permits for Work of your Bid Category:
 - 1. Complete and file permit application(s) with appropriate agency.
 - 2. Pay required fees.
 - 3. Do not commence execution of any item of work for which a permit has not been obtained.

END OF SECTION

**SECTION 003200.01
SUB PREQUALIFICATION AND BIDDING**

A. THIS SECTION INCLUDES A BRIEF OVERVIEW OF BARTON MALOW BUILDERS REQUIREMENTS AND DETAILED INFORMATION ABOUT THE PREQUALIFICATION AND BIDDING PROCESSES ON BARTON MALOW BUILDERS PROJECTS. WHERE ELECTRONIC BIDDING IS NOT USED, SEPARATE STIPULATIONS FOR SUBMITTING A HARD COPY BID MAY APPLY. REFER TO OTHER SECTIONS FOR CLARITY.

1.01 DOCUMENT INCLUDES

- A. Prequalification General Requirements
- B. Prequalification Process
- C. Building Connected Overview

1.02 RELATED DOCUMENTS

- A. Instructions to Bidders Section 01 2113

2.01 PREQUALIFICATION GENERAL REQUIREMENTS

- A. Barton Malow Builders requires all prospective bidders to maintain their prequalification status throughout the entire Contract duration. This is required in order to process monthly payment applications, release payments, and bid on other projects. Prospective bidders should clearly communicate to their employees regarding their main point of contact and their respective role(s) in completing and maintaining the prequalification.

2.02 PREQUALIFICATION PROCESS

- A. Invitation to Qualify
 - 1. Prospective Bidders should submit a request to prequalify if they are not already prequalified. Click the following link to access the form:
<https://www.bartonmalow.com/Contractors/>. Completion of this linked form will generate an email invitation to prequalify with Barton Malow Builders.
 - 2. Bidders may also reach out to their Barton Malow Builders representative who can invite a Contractor to prequalify through Building Connected, Barton Malow Builders online bidding platform.
 - 3. If a Contractor is already prequalified with Barton Malow Builders, Building Connected automatically notifies the company's designated prequalification representative, as defined in their Building Connected profile, when their prequalification expires (annually) or previously submitted information needs to be updated.
- B. When Prospective Bidders are invited to prequalify, the bidder completes their application and uploads required documents through their Building Connected account on the Qualifications Page/Treetop Invites tab.
 - 1. The following documents must be uploaded to prequalify with Barton Malow Builders:
 - a. W9 Form – the company name must exactly match our contract and your Building Connected profile
 - b. Audited/Reviewed financials from the previous year
 - c. OSHA 300/300A Logs (past three years)
 - d. EMR Letter (past three years)
 - e. Safety Manual
 - f. Letter from Bonding Company
 - g. Current Insurance Certificate and Additional Insured forms CG2010 and CG2037. (Reference Instructions to Bidders Section 002113 for Insurance information).
 - 2. Resources:
 - a. Prequalification Setup and Submission Guide (27 Pages)
<https://www.bartonmalow.com/wp-content/uploads/2020/11/sample-tradetapp-prequalification.pdf>

- 1) This guide provides information for all new Building Connected users as well as users who previously used Building Connected and TradeTapp as separate software tools. These tools have been combined so that Contractors only need to have a Building Connected account.
3. The email contact used for the company profile will be the email contacted in subsequent years for pre-qualification renewal, so be sure to use the email address of the person who will be completing the renewal. Additionally, please ensure that your company is allowing emails from both the TradeTapp.com and BuildingConnected.com domains so you do not miss out on important notifications.

2.03 BUILDINGCONNECTED OVERVIEW

- A. This free, web-based software is used by Barton Malow Builders to successfully manage the bidding process and provide a streamlined process for the prospective bidders and the Owner.
- B. Bid Invitation: The Barton Malow Builders representative may invite a company to bid a particular Bid Package for a given project. If a company wishes to submit a bid for multiple work categories, notify Barton Malow Builders for an invitation for each scope of work.
- C. Prospective bidders shall take the steps to familiarize themselves with the Building Connected interface, bid form, and processes prior to submitting a bid. Enter all information requested, including breakout prices, unit prices, allowances, etc. Respond to each question on the Bid Form to be considered fully responsive.
- D. Upload requested documents as attachments (i.e. bid security, clarifications, labor rates, proposals, etc.).
- E. As Building Connected is a web-based interface, ensure a stable internet connection is available. Save your progress often as you complete the Bid Form.
- F. Bidding Multiple Categories
 1. When submitting bids for multiple categories, provide a bid separately for each Bid Package. When offering a combined bid discount, enter this information as a Voluntary Alternate.
- G. Bidders may revise their proposals right up until the Bid Due Date. After submission, this feature is not available.
- H. Resources :
 1. Building Connected Home Page: <https://www.buildingconnected.com/>
 2. [Completing your Building Connected Profile](#)
 3. [Contractor Bidding Guide](#)
 4. [Building Connected Help Desk](#)

END OF SECTION

**SECTION 004100
BID FORM**

DELIVER 1 COPY OF THIS BID FORM TO THE FOLLOWING ADDRESS PRIOR TO THE BID DUE DATE AND TIME.

1.01 ATTN: JOSH EISENMAN

THE PROJECT AND THE PARTIES

2.01 TO:

- A. Troy School District (Owner)

2.02 FOR:

- A. Project: Barnard, Bemis, Hill, and IAE Exterior Door and Window Upgrades
- B. Owner's Project Number: 9932 Contractor's Project Number: 9932
 - a. 1140 Rankin Dr,
 - a. Troy, Michigan48083

I.

2.03 DATE: _____

2.04 SUBMITTED BY:

- A. **Bidder's** Full Name _____
- B. **Company** Name
 - 1. Address _____
 - a.
 - 2. City, State, Zip _____
 - a.
 - 3. E-mail Address _____
 - a.
 - 4. Phone Number _____

2.05 OFFER

- A. Bidder, in compliance with the Bidding Documents for Bid Package No.33 having carefully examined the Bidding Documents and the site of the proposed Project and the conditions affecting the proposed Work in the Bid Category(ies) including the condition of the Project site, any surface or subsurface obstructions, the actual levels, all excavating, filling in, removal and demolition, measurements and quantities involved in the Work, the availability of labor, materials and equipment, and the weather conditions that may possibly may be experienced in the Project vicinity, proposes to furnish all labor, materials, tools, equipment, machinery, equipment rental, transportation, superintendence, and services as are necessary to perform all Work in the Bid Category(ies) stated in accordance with the Contract Documents for the Base Bid and Alternate amounts stated below.
- B. If identified as one of the apparent lowest bidder(s) for a Bid Category, Bidder agrees to meet immediately with Construction Manager and shall submit post bid information as described in Section 00 2113 Instructions to Bidders.
- C. Bidder, if awarded a contract, agrees to: (1) execute the Agreement within fifteen (15) days of receiving notice of the award; (2) provide performance/payment bonds and insurance certificates in full compliance with the Contract Documents, (3) submit the Project Safety Program as described in the Barton Malow Safety Manual, (4) commence Work upon execution of the Agreement or at such other time as directed in the notice of award, and (5) to complete its Work in accordance with the Contract Documents and within the milestone activity dates and durations set forth in the Bidding Documents and subsequent construction project master schedule established by Construction Manager . In the event Bidder defaults in complying with any portion of this paragraph, Bidder specifically agrees that the entire bid security amount shall become the property of Owner as liquidated

damages constituting the reasonable estimate of the damages that the Owner would incur for delays and additional expenses in the event of such default, and not as a penalty.

2.06 BASE BID:

- A. The cost of the Performance Bond and Payment Bond shall be included in the base bid and treated as a deduct Alternate should the Owner decide to waive the requirement for the successful Bidder providing same.
- B. Bidder agrees to perform all Work for Bid Category(ies) as described in the Contract Documents, for the Base Bid(s) stated below. The Base Bid(s) shall include the cost of Performance and Payment Bonds unless stipulated otherwise. For each Bid Category to be bid, include (a) the Base Bid, written and in figures, (b) the cost of the Performance Bond and Payment Bond which is included in the Base Bid, written and in figures, and (c) the Bid Category and description.
- C. All applicable taxes and bond costs are included in the below Base Bid and all listed alternates and Unit Prices.
- D. Having examined the Place of The Work and all matters referred to in the Instructions to Bidders and the Bid Documents prepared by Barton Malow Builders for the above mentioned project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Sum of:
 - 1. _____
 - 1. _____ dollars
 - 1. (\$ _____)
- E. We have included the required performance assurance bonds in the Bid Amount as required by the Instructions to Bidders. The included cost is:
 - 1. _____
 - 1. _____ dollars
 - 1. (\$ _____)
- F. Bid Category and Description: _____
 - 1. _____
- G. If awarded a contract, Bidder's Surety will be _____
- H. A Bid Security in the form of a [] Bid Bond from a qualified surety, [] certified check, or [] cashier's check (check one) accompanies this proposal in the amount of five (5) percent of the Base Bid Amount(s).
- I. We have included the required performance assurance bonds in the Bid Amount as required by the Instructions to Bidders.
- J. All applicable federal taxes are included and State of Michigan taxes are included in the Bid Sum.
- K. All Cash and Contingency Allowances described in Section 012100 - Allowances are included in the Bid Sum.
- L. Bidder accepts Barton Malow Terms and Conditions (f 00 5200 Agreement Form).

- 1. If no, please reference Addendum or Exceptions.
- M. Bidder is prequalified with Barton Malow _____.

- N. Bidder acknowledges required insurance coverage and limits and will be provided _____
- O. Bidder included all material handling equipment required for this scope of work _____
- P. Bidder has visited the site _____
- Q. Bidder has bid per the project documents without deviation _____.
- R. Bidder's site requirements: (i.e. site trailers, parking, laydown, hoisting etc.);

- S.
1. _____
- 1. _____
- T. List any Long Lead Items (greater than 6 weeks)

- 1. _____
- 1. _____
- U. Bidder understands the requirements for the payment process, preparation of the SOV, retention, and timely completion of closeout document preparation?
_____.
- V. Bidder understands allowable Markup on self-perform (15%) and sub-tier contractors (5%)
_____.
- W. List MBE, WBE, Veteran Owned, or Service Disabled Veteran Owned
_____.

2.07 ACCEPTANCE

- A. This offer shall be open to acceptance and is irrevocable for forty-five (45) days from the bid due date.
- B. Bidder understands that the Owner reserves the right to reject any or all Bid Proposals and to waive any informalities or irregularities therein.

2.08 ALTERNATES

- A. The following Alternate(s) to Base Bid(s) are required to be offered by the respective Bidders. In the event the Alternate is accepted, Bidder agrees to perform all Work necessary to complete the Work as modified by the Alternate in full accordance with the Contract Documents, for the following add or deduct from the Base Bid as indicated: (Enter written amount and in figures. In case of discrepancy, amount shown in words will govern. Enter a dollar amount in each, even if the amount is \$0.00. Terminology such as "No Bid", "Not Applicable", "No Change" or "Does Not Apply", shall not be used. If the Alternate does not apply to the Bidder, enter \$0.00.)
- B. See project drawings and/or specifications for alternate write-up descriptions.
- C. Alternate pricing shall include the cost of Performance and Payment Bonds and taxes.
- D. Alternate 1: NA
 - a.
1. _____
 - a. _____
 - a. _____ dollars
 - a. _____
 - a. (\$ _____)
- E. Alternate 2: NA
 - 1.
1. _____

1.
 - a. _____ dollars
1.
 - a. (\$ _____)

2.09 VOLUNTARY ALTERNATES

- A. The following voluntary Alternates are offered by the Bidder. Bidder agrees that the amounts indicated below shall be added to or deducted from the Base Bid, as indicated, for each voluntary Alternate that is accepted.
- B. Voluntary Alternate pricing shall include the cost of Performance and Payment Bonds and taxes.
- C. Show amount(s) in both words and figures for voluntary alternates. In case of discrepancy, amount shown in words will govern.
- D. Bidder is required to submit sufficient detailed information to fully describe each voluntary Alternate(s) on a separate sheet(s) attached to this Bid Proposal form.

- 1.
- E. Voluntary Alternate 1: _____ (enter description)
- 1.
1. _____
- 1.
1. _____ dollars
- 1.
1. (\$ _____)

- F. Voluntary Alternate 2: _____ (enter description)
- 1.
1. _____
- 1.
1. _____ dollars
- 1.
1. (\$ _____)

2.10 UNIT PRICES

- A. The following Unit Prices to Base Bid Categories are required to be offered by the respective Bidders. Bidder agrees that the following amounts will be used in determining contract changes from the Base Bid for authorized Changes in the Work. Bidder shall not include these unit costs in the Base Bid amount(s).
- B. All unit prices shall include Bidder's mark-up for overhead and profit.

2.11 COMBINED BID

- A. Bidder agrees to perform all Work necessary to complete the Work in Bid Categories
1. _____, _____, _____, in full accordance with the Contract Documents, for the lump sum of:
- 1.
1. _____
- 1.
1. _____ dollars
- 1.

1. (\$ _____)

2.12 ADDENDA

- A. The following Addenda have been received. The modifications to the Bid Documents noted below have been considered and all costs are included in the Bid Sum.
 - 1. Addendum # _____ Dated _____.
 - 2. Addendum # _____ Dated _____.
 - 3. Addendum # _____ Dated _____.
 - 4. Addendum # _____ Dated _____.

2.13 SAFETY

- A. As of the date of submission of the Bid, Bidder's worker's compensation Experience Modification Rate (EMR) for the state in which the Work is performed is _____.
- B. Bidder has included the OSHA Form 200 and 200S indicating recordable incident rates for the prior calendar year per 200,000 man hours for the following categories:
 - 1. Total Cases _____
 - 2. Lost Workday Cases _____
 - 3. Non-fatal Cases Without Lost Workdays _____
 - 4. Employee Hours Worked Last Year _____
 - 5. Fatalities in the last year (if any, please describe below) _____
 - a. _____
 - a. _____
 - a. _____
 - 6. Has Bidder been cited by state or federal OSHA for any serious or willful violation? If yes, please describe:
 - a. _____
 - a. _____
 - a. _____

I.

2.14 BID FORM SIGNATURE(S)

- A. Bidder accepts the provisions of the Bidding and Contract Documents and certifies that this Bid Proposal is submitted in good faith and without collusion with any other person or entity submitting a Bid Proposal for the Work. Bidder hereby affixes its authorized signature(s) representing (check one B-G):
- B. _____ An individual doing business as _____
- C. _____ A partnership
- D. _____ A limited liability company, organized in (enter state)
- E. _____ A corporation, organized in (enter state)
- F. _____ Joint venture formed between and (Signature from authorized representatives of each partner are required)
- G. _____ An Agent with a Current Power of Attorney (must be attached to this bid form).
- H. Signature(s):
 - 1. _____
- I. Title:
 - 1. _____

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J. Legal Name of Firm:

1. _____

K. Business Address:

1. _____

L. Telephone Number:

1. _____

END OF SECTION

**SECTION 005200
AGREEMENT FORM**

PART 1 GENERAL

1.01 FORM OF AGREEMENT

- A. The form of Agreement (AIA Document A132-2009 Standard Form of Agreement between Owner and Contractor, Construction Manager as Advisor Edition) that will be used for Work under this Bid Package and associated Terms and Conditions and AIA Document A232-2009 General Conditions of the Contract for Construction and Insurance Requirements. A copy of the AIA General Conditions is found immediately following this section. The Agreement further includes the Barton Malow Builders Project Manual (this document) and its Exhibits.

1.02 INSURANCE REQUIREMENTS

- A. Barton Malow Builders Document No. 2 Insurance Requirements shall govern this Project. A copy of Document No. 2 is included in this Section.
- B. Barton Malow Builders requires insurance on all contracts, as noted in the contract terms and conditions. All insurance coverage must be reviewed and deemed acceptable at prequalification.
- C. Contractors must create an account in TradeTapp and upload its renewal blanket certificate of insurance and all additional insured forms. Contractors will be required to manually enter the insurance coverage periods when uploading and at each renewal.
- D. Contractors must also have an account in www.buildingconnected.com. Contractor entity name and mailing address must be typed EXACTLY the same in both TradeTapp and Building Connected as the two systems sync with each other.
- E. In most cases, insurance approval in TradeTapp satisfies insurance approval for multiple contracts, if applicable.
- F. Please review the required insurance endorsement or contract language with your insured. We have confirmed that the requested insurance coverage is commercially available.
1. The required additional insurance, as stated in our current contracts provides:
 2. Barton Malow Holdings ("BMH"), Contractor (if other than BMH), and their partners (if applicable), Owner, and all other entities as required in the Prime Contract, shall be endorsed as additional insureds on *Contractor's liability insurance policies (including general liability, excess liability, automobile liability and pollution liability, where applicable) for liability arising out of activities, operations or "work," performed by or on behalf of Contractor, including BMH and/or Contractor's general supervision of Contractor, products and completed operations hazard of Contractor, and automobiles owned, leased, hired or borrowed by Contractor. The coverage provided by the additional insured endorsement(s) shall be at least as broad as that provided in the Insurance Service Office, Inc.'s Additional Insured Endorsement Form CG 20 10 11 85. Forms that do not provide additional insurance for the "products and completed operations hazard," will not be accepted. In no case shall any additional insured endorsement exclude coverage for BMH or Contractor's own negligence, nor limit coverage for BMH or Contractor only to potential liability incurred solely as a result of Subcontractor's acts or omissions.
- G. Barton Malow Builders will accept the following additional insurance endorsements:
1. CG 2010 11 85
 2. CG2010 10 01 coupled with the CG2037 10 01 forms.
 3. CG7048 10 15 (this is not an ISO form, but it is an example of an acceptable "scripted equivalent" form)
- H. We will accept any manuscript form or "scripted equivalent" form that provides the following coverage:
1. Blanket additional insured form as required by written contract:
 - a. For liability arising out of your ongoing operations AND

- b. For liability arising out of “your work” performed for that insured and included in the “products-completed operations hazard”
- I. The description box on the ACORD certificate must be endorsed as follows:
 1. For Barnard, Bemis, Hill, and IAE Exterior Door and Window Upgrades #9932
 2. Ensure Barton Malow Builders and TMP Architecture, Inc are added as additional insureds on the Insured’s commercial general liability policy, excess liability policy, automobile liability policy, and contractor’s pollution liability policy, if applicable with respect to liabilities arising out of the operations or “work” performed by or on behalf of the Insured and in accordance with all Contract requirements for such coverage. Coverage for the additional insureds is primary and non-contributory with any other insurance available to the additional insureds, whether such other insurance is available on a primary or excess basis. Waivers of subrogation apply in accordance with Contract requirements.
- J. Barton Malow Builders also requires:
 1. The additional insurance coverage provided must be primary and non-contributory with any other insurance or self- insurance maintained by the additional insured, whether on a primary, umbrella or excess basis.
 2. Each insurer must carry AM Best's Rating of A-VII or better
 3. Each policy must be endorsed so that the issuing insurer will provide thirty (30) days written notice of cancellation to the BHM, Contractor and/or any additional insureds.
 4. Waiver of subrogation required for all coverages.
- K. A sample of the Certificate of Insurance (ACORD) form is included at the end of this Section.

1.03 PERFORMANCE AND PAYMENT BOND REQUIREMENTS

- A. Troy School District will require the Contractor to furnish a Performance Bond and a Payment Bond, in amounts equal to the Agreement Contract Sum, by a qualified surety and naming both the Owner and Barton Malow Builders as Obligees. All sureties providing bonds on this Project must be listed in the Department of Treasury’s Circular 570, entitled “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” with the bond amounts less than or equal to the underwriting limitation indicated in the Circular, and/or must have an A.M. Best rating of A – VII or better. Bonds shall be duly executed by the Contractor, as principal, and by a surety that is licensed in the state in which the work is to be performed.
- B. The Contractor shall deliver the required bonds to Barton Malow Builders prior to the execution of the Agreement. If the work is to be commenced prior thereto in response to a letter of intent, the Bidder, at a minimum, shall submit evidence to the satisfaction of Troy School District and Barton Malow Builders that such bonds will be furnished prior to commencement of on-site Work. In no event may the Contractor commence on-site work without the required bonds properly issued and delivered.
- C. Performance Bond and Payment Bond AIA Document A311 (1970 Edition), AIA Modified A312, or A312 (2010 Edition) must be used for this Project.
- D. The Bidder’s proposed surety must be acceptable to the Troy School District and Barton Malow Builders. If, at any time, after acceptance of the Contractor’s bonds, the surety fails to meet the stated criteria the Contractor must replace the bonds with bonds from a surety that meets the stated criteria as a precondition to continuing Work and receiving further payments.
- E. The Performance and Payment Bond penal sums (i.e., the Agreement Contract Sum) must be listed as a separate line item in the schedule of values.
- F. In the event of a Change Order, the penal sum of any required Performance and Payment Bonds shall be adjusted to equal the adjusted Contract Price. Troy School District and Barton Malow Builders shall have the right to request submission of bond riders, issued by the original qualified surety, evidencing that such adjustments to the penal sum of the bonds have been accomplished. Notwithstanding the foregoing, in the next pay application

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after the Agreement price has been increased by twenty-five percent (25%) or more, as a condition precedent to payment, the Contractor shall deliver a bond rider issued by the original qualified surety evidencing that the appropriate adjustment in penal sums has been accomplished.

1.04 SUPPLEMENTARY GENERAL CONDITIONS

1.05 RELATED REQUIREMENTS

- A. Section 007200 - General Conditions.
- B. Section 007300 - Supplementary Conditions.
- C. Section 002113 - Instructions to Bidders
- D. Section 014216 - Definitions.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

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**SECTION 006000
PROJECT FORMS**

IRAN SANCTIONS FORM

FAMILIAL DISCLOSURE STATEMENT

END OF SECTION

**SECTION 007100
CONTRACTING DEFINITIONS**

PART 1 GENERAL

1.01 APPLICABILITY: THESE DEFINITIONS ARE INTEGRAL TO THE AGREEMENT.

1.02 DEFINITIONS - DESIGN-BUILD DOCUMENTS

- A. Contract Documents: As defined in the Agreement.
 - 1. At the time of execution of the Agreement, Contract Documents consist of the following:
 - a. The Agreement and Conditions of the Contract, and other documents listed on the Table of Contents under the heading Contracting Requirements.
 - 2. From time to time after execution of the Agreement, upon approval by the Owner, the following types of documents will be incorporated into Contract Documents:
 - a. Drawings and other documents documenting the design.
 - b. Construction drawings and specifications detailing the execution of the design.
- B. Project Program: The Owner's requirements for size, arrangement, organization, and location of functional spaces , description of space functions , identification of fittings, equipment, and furnishings , description of the physical and environmental requirements for each space , together with a description of the image, goals, or "mission" of the project.

1.03 DEFINITIONS - TIME PERIODS AND MILESTONE DATES

- A. Preliminary Design: The time period during which the design criteria are finalized and preliminary drawings and written descriptions are prepared to illustrate the proposed design of the work or a portion of the work to the Owner, as described in the Conditions of the Contract.
- B. Design Development: The time period during which the form, arrangement, size, and materials of the work or a portion of the work are determined [_____].
- C. Construction Documents: The time period during which process working drawings, specifications, and other documents describing the work or a portion of the work are prepared in sufficient detail to allow accurate and complete construction.
- D. Construction: The time period from the beginning of work on the project site until final payment [_____].
- E. Substantial Completion: The date as defined in the Conditions of the Contract. Date of Substantial Completion is the due date for the following:
 - 1. Design-Builder's complete punch list of items to be completed.
 - 2. Owner's complete punch list of items to be completed.
 - 3. Compliance with requirements of governing authorities, for submittals, inspections, and permits.
 - 4. Compliance with Owner's requirements for access to areas occupied by the Owner.
- F. Closeout: The time period during which all details of both construction and commissioning are completed.
 - 1. The Closeout period is the time from Date of Substantial Completion until final payment, both as defined by the Conditions of the Contract.
 - 2. Before and during the Closeout period, the Owner will ascertain whether the completed project complies with Contract Documents.
- G. Occupancy: The time period during which the project is occupied for its intended purpose.
 - 1. The Occupancy period begins at Date of Substantial Completion, as defined by the Conditions of the Contract.
- H. Correction Period: The time period defined by the Conditions of the Contract.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 007200
GENERAL CONDITIONS**

FORM OF GENERAL CONDITIONS

1.01 RELATED DOCUMENTS

- A. All Bidders shall review all of the Bidding Documents, all Bid Category Work descriptions, and all Contract Documents, immediately advise Barton Malow Builders of any adverse factors, conflicts or ambiguities that might affect the execution of Work of this Bid Package. Each Bidder is responsible to review all Bid Category descriptions and Contract Documents and coordinate the Work accordingly. Each Bidder shall incorporate into its Bid Proposal the cost of coordination of the Work with the requirements of all related Contract Documents, as shown, specified, or required.
- B. A complete set of reference documents, geotechnical reports, hazard surveys, and separate bid package documents are available in the Barton Malow Builders cloud-based file storage system, BIM360.

1.02 PROVISIONS

- A. The following provisions form a part of each Bid Category Work Scope and apply to each Contractor's Scope of Work.
- B. Information pertaining to the existing building has been obtained through photographs and investigations and is indicated on the Project Drawings. This information is not warranted to be complete or accurate. Contractor shall verify all dimensions in the field prior to ordering materials or construction and any costs or expenses arising out of its failure to do so shall be borne solely by Contractor.
- C. All costs for agency permits, disposal, demurrage, freight charges, roadway escorts, and trucking or tipping fees associated with this Contractor's work shall be included.
- D. Contractor shall be responsible for any transport, handling, loading, unloadings and conveying of all materials required by this Contractor.
- E. All Contractors must include all cutting, drilling, punching and reaming required for the completion of their scope of work. Contractors must perform rebar scanning for all slab cuts and core drilling larger than 3" for review by EOR.
- F. Contractor shall include penetrations and reinforcing of penetrations, identified and located on returned shop drawings in accordance with the Contract Documents.
- G. All work under Contractor's Scope of Work shall comply with proper trade jurisdictions, even if it is necessary to assemble composite crews or subcontract to appropriate trades.
- H. Special Safety provisions:
 - 1. Refer to the Barton Malow Builders Safety Manual or specific safety requirements for this project such as:
 - 2. Mandatory safety orientation (approximately 1 hour) & post-accident drug screens.
 - 3. Fall protection requirements - At or above six feet warrants tie-off.
 - 4. Daily pre-task documented safety meetings.
 - 5. OSHA 30 hour course required for designated safety representatives.

1.03 COORDINATION

- A. All Contractor's are to coordinate all Work with the work of other trades for proper function and sequence. Contractor must furnish approved copies of shop drawings, templates, mock-ups, and technical data to other contractors designated by Barton Malow Builders for the purposes of coordination of this Work.
- B. Each phase of the Work shall be coordinated, and the coordination plan approved by Barton Malow Builders prior to proceeding. Contractor shall keep informed as to Work of all trades engaged in the Project, and shall execute Work in such a manner as not to delay or interfere with the progress of other trades involved.
- C. Contractor is required to schedule its Work so that no other party is delayed in execution of its work.

- D. Contractor is required to employ competent supervision on the Project throughout the entire period of construction ensure proper coordination and supervision of subcontractors.

1.04 OWNER EQUIPMENT COORDINATION

- A. The Owner Furnished and Contractor Installed (OF/CI) equipment as listed in the contract documents and/or work scopes, shows the Contractor responsible to schedule delivery, receive the equipment and accessories F.O.B. to the jobsite, inspect, protect, store, handle and move into position, provide all coordination with applicable trades for rough-in requirements and final connections, marshal the appropriate trades as a composite installation crew, and assist in initial startup.
- B. Refer to the Drawings to determine quantities.
- C. Each piece of equipment provided by the Owner will include a cut sheet, reference information or drawing, indicating the specific rough-in, backing, sized and final connection information for use by the Contractors. Furthermore, the Owner will arrange with its vendor/manufacture of new equipment to have the piece of equipment delivered F.O.B. to the Loading Dock or Jobsite Entrance, clearly marked, identifying the item, location installed, complete itemized bill of shipped material and indicating which Contractor, by category number, it is to be received by.
- D. If indicated on the drawings and Contractors work scopes, some items may require relocation from adjacent locations for integration into the project. Relocation of these items require disconnect, packaging, moving, reinstallation, and reconnecting of equipment. If applicable, Contractor shall also start up relocated equipment.

1.05 OCCUPIED BUILDING COORDINATION

- A. Due to consistent occupancy of the existing building, each Contractor must approach their Work with the safety of the existing building occupants and visitors in mind.
- B. All noisy and vibratory activities which could affect building activities or occupants must be kept to a minimum and scheduled with Barton Malow Builders.
- C. Contractors which perform any noisy or vibratory activities are required to communicate with Barton Malow Builders.
- D. Material and equipment deliveries must also be scheduled as to minimize impacts to building occupants, passerby's, and visitors. All deliveries to be coordinated and preapproved by Barton Malow Builders. Any deliveries crossing over active owner occupied areas will require proper safety flaggers. All pathways will be immediately cleaned and restored to existing conditions by the responsible Contractor.
- E. All work must be completely separated from the public access within the building with A.H.J. approved temporary walls or fencing. Contractors are responsible for their own separation walls or temporary fencing not shown on the phasing plan.

RELATED REQUIREMENTS

2.01 SECTION 007300 - SUPPLEMENTARY CONDITIONS.

2.02 SECTION 014216 - DEFINITIONS.

SUPPLEMENTARY CONDITIONS

3.01 REFER TO DOCUMENT 007300 - SUPPLEMENTARY CONDITIONS FOR AMENDMENTS TO THESE GENERAL CONDITIONS.

END OF SECTION

**SECTION 007300
SUPPLEMENTARY CONDITIONS**

PART 1 GENERAL

1.01 SUMMARY

- A. These Supplementary Conditions amend and supplement the General Conditions defined in Document 007200 - General Conditions and other provisions of Contract Documents as indicated below. Provisions that are not so amended or supplemented remain in full force and effect.
- B. The terms used in these Supplementary Conditions that are defined in the General Conditions have the meanings assigned to them in the General Conditions.

1.02 MODIFICATIONS TO GENERAL CONDITIONS

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 011000
USE OF PREMISES**

PART 1 GENERAL

2.01 PROJECT

- A. Project Name: Barnard, Bemis, Hill, and IAE Exterior Door and Window Upgrades
- B. Owner's Name: Troy School District.
- C. Architect's Name: TMP Architecture, Inc .
- D. Additional Project contact information is specified in Section 000103 - Project Directory.
- E. The Project consists of the construction of Door and window systems at Barnard Elementary , Bemis Elementary, Hill Elementary, and International Academy East.

2.02 CONTRACT DESCRIPTION

- A. Contract Type: Multiple prime contracts, each based on a Stipulated Price as described in Document 005000 - Contracting Forms and Supplements.

2.03 WORK BY OWNER

2.04 OWNER OCCUPANCY

- A. Owner intends to continue to occupy adjacent portions of the existing building during the entire construction period.
- B. Owner intends to occupy the Project upon Substantial Completion.
- C. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- D. Schedule the Work to accommodate Owner occupancy.

2.05 CONTRACTOR USE OF PREMISES AND DELIVERIES

- A. All visitors are to check in at Barton Malow Builders' office.
- B. All visitors, Contractors and it's Subordinate Parties must complete QR code self assessment survey prior to entering the project or office.
- C. Contractor and its Subordinate Parties shall be subject to such rules and regulations for conduct of the Work as the Owner or Barton Malow Builders may establish. All employees shall be properly and completely clothed while working. Bare torsos, legs and feet will not be allowed. Possession or consumption of alcoholic beverages or drugs, or other noxious behavior on the site is strictly prohibited. Violators shall be promptly removed from the site.
- D. Before starting the Work, Contractor shall ascertain from Barton Malow Builders what entrances, routes or roadways shall be used for access to the work, and use only those designated for movement of personnel, materials, and vehicles to and from the Project site. Close coordination will be required of Contractor with the Owner, Barton Malow Builders, other trades, the city and others having an interest in the Project to assure that Work on the site, access to and from the site and the general conduct of operations are maintained in a safe and efficient manner and that disruption and inconvenience to existing streets and property are minimized. Contractor is responsible to review the site and be familiar with all existing conditions within and around the Owner's property including local conditions and requirements.
- E. Contractors shall maintain free access to all buildings and areas of the site for designated vehicles, service vehicles, and fire fighting equipment and at no time shall block off or close roadways or fire lanes without providing auxiliary roadways and means of entrance acceptable to the Owner. Fire hydrants must remain accessible at all times. Subcontractors shall give the Owner and the local fire department at least seventy-two (72) hours notice of any such changes of routes.
- F. No staging of trucks on adjacent roads is allowed, unless it is explicitly approved by Barton Malow Builders.

- G. Contractors and their Subordinate Parties will not be allowed to use any Owner tools or equipment during the course of the Project.
- H. Each Contractor shall confine its Work to normal working hours; 7:00 am to 3:30 pm Monday through Friday, or as otherwise notified by Barton Malow Builders. Contractor may execute the Work during the entire twenty-four (24) hours of any day of the week with the approval of Barton Malow Builders and the Owner, providing that they so conduct their operations as to not create a public nuisance or disturb the peace, and provided such operations are conducted so as to comply with all applicable laws, ordinances, and regulations. Compensation to Barton Malow Builders for supervisory staff due to abnormal working hours will be at the requesting Contractor's expense.
- I. Whenever Contractor intends to depart from normal work hours, it shall notify Barton Malow Builders in writing at least twenty-four (24) hours in advance. Failure of Contractor to give such timely notice may result in Barton Malow Builders directing the removal or uncovering of the Work performed during such abnormal hours and Contractor's expense. Special arrangements can be made for emergency work or shutdowns as may be required.
- J. Use of explosives is not permitted unless approved in advance by the Owner.
- K. Each Contractor on behalf of itself and its Subordinate Parties shall be responsible for all damage to the Project including the existing building and grounds arising or resulting from its operations under the Agreement. Repair or replacement of damaged items shall be to the satisfaction of the Owner and Barton Malow Builders.
- L. Each Contractor shall at all times maintain a clean and safe passageway for the Owner's operations and personnel in existing areas and maintain clearances adjacent to and in connection with the Work performed.
- M. Each Contractor shall effectively confine dust, dirt and noise to the actual construction area and in compliance with all applicable laws, rules and regulations.
- N. All Contractors and tier Subordinate Parties shall restrict all Work activities associated with an area undergoing renovation to within the boundaries indicated by the Contract Documents. Any means of access or egress from the stipulated boundaries shall be coordinated with Barton Malow Builders and the Owner.
- O. Work shall, if required, be constructed in phases to accommodate the Owner's use of the premises during construction and to accommodate installation of equipment. Refer to Section 013216 - Schedule and Phasing of the Project Manual.
- P. All Contractors shall limit their use of the premises for Work and for storage, to allow for:
 - 1. Work by other contractors
 - 2. Owner Occupancy
 - 3. Public use and safety
 - 4. Free use of corridors at all times
- Q. The Owner and Barton Malow Builders expect Contractors and their Subordinate Parties to exercise common sense and good judgment, and to conduct themselves in a manner which would be a credit to the Owner. Without limiting other applicable provisions of the Contract Documents, Contractor shall not engage in the following:
 - 1. Conduct that interferes with Work or work of others.
 - 2. Conduct that interferes with, or is detrimental to good safety and well-being.
 - 3. Unauthorized use of confidential information.
 - 4. Discourtesy toward Owner's staff, visitors, and the general public (including abusive, vulgar or other language).
 - 5. Soliciting
 - 6. Disregard of safety, sanitation, or security laws, rules, and regulations.
 - 7. Conduct detrimental to the Owner's operations and good reputation.
 - 8. Stealing.
 - 9. Gambling.
 - 10. Possession and/or use of narcotics or intoxicants.
 - 11. Threats or abuse of others.

12. Disorderly conduct or fighting.
 13. Playing of loud music.
 14. Falsification of information.
 15. Unauthorized travel of Contractor's employees outside the designated project Work areas.
 16. Discriminating Behavior.
 17. Sexual or Ethnic harassment.
- R. Willful disregard of the above will be grounds for requiring the offending person(s) to be removed from the Project, and may subject the Contractor to termination under the Agreement.
- S. Each Contractor on behalf of itself and its Subordinate Parties shall not load or permit any part of a structure to be loaded with a weight that will endanger its safety.
- T. Where new temporary partitions are established and located by any Contractor, all existing mechanical, fire protection, plumbing and electrical devices used for life safety purposes shall be relocated by the Contractor installing or relocating same to the new temporary partitions so as to be usable and visible to Owner personnel and activities. Items such as, but not limited to, exit lights, fire protection systems, fire alarm systems, and similar items shall be relocated. In the event that a passageway is blocked or barricaded, visible rerouting directions for traffic flow shall be posted.
1. The Project is under the jurisdiction of the State of Michigan Fire Marshall.
 2. Partition construction shall provide a fire-resistant classification approved by the State Fire Marshal. Openings in such partitions shall be protected by fire doors consistent with the rating of the partition.
- U. The Owner shall have the option to curtail or delay any activity that affects its operations. Should a Contractor be asked to stop its Work, the Contractor shall do so immediately and proceed with other activities with no additional cost to the Owner or Barton Malow Builders. The Owner may occupy the premises during the entire period of construction for the conduct of its normal operations. All Contractors are to cooperate with the Owner and Barton Malow Builders in all construction operations to minimize conflict, and to facilitate Owner usage.
- V. Contractors and their Subordinate Parties are prohibited from canvassing, soliciting, posting, or distributing literature or materials for any purpose while on the job site.
- W. Contractors and their Subordinate Parties shall be responsible for adhering to the smoking policies and regulations of the Owner and the Owner's facilities.
- X. The preservation of existing trees and other vegetation on the site to the maximum extent possible is extremely important. In many cases, trees in close proximity to the site work are to be preserved. Each Contractor must plan its Work and instruct its Subordinate Parties to conduct their operations to avoid damage to trees and vegetation (provide barriers as required). Indiscriminate driving about the site, disposing of waste, storage of materials upon or against trees, or any other activity which is harmful to trees or vegetation that are to be preserved will not be tolerated. Parking areas, storage areas, and access to the buildings will be confined to areas designated and approved by Owner and Barton Malow Builders. Any case of damage to any tree shall be reported to Barton Malow Builders immediately so that professional repairs can be made. The cost of such required repairs or treatment shall be charged to the responsible Contractor. Willful disregard of the above will be grounds for requiring the offending person(s) to be removed from the Project, and may subject the Contractor to termination under the Agreement.
1. Prohibited practices include breaking of branches, scraping of bark, or unauthorized cutting; nailing or bolting into tress or plants; use of trees or plants as temporary support (i.e. for cables); unauthorized filling, excavating, trenching or auguring within the root zone; compaction/driving over the root zone; storage of any material or vehicles within the root zone; dumping of construction waste or materials (including liquids); unauthorized removal or relocation of plants; removal of tree protection barricades or construction fencing prior to completion of project.

2. Compaction within the root zone is the increasing of the soil density caused by heavy equipment or concentrated foot traffic which significantly alters the soil conditions from that which was present prior to construction.
 3. The root zone of a tree is one and a half the distance of plant crown drip line outward from the stem, along undisturbed grade. Should placement of concrete be specified or authorized by the Owner within the root zone, a sulfur application will be applied by the Owner. The Contractor shall notify the Owner and Barton Malow Builders at least 48 hours prior to pouring concrete. Trees to receive sulfur shall be identified by the Owner.
- Y. Contractor is responsible to maintain and keep all site utilities/systems in working order that are within the work limits. Site utilities should be identified and marked by this Contractor to proactively prevent interruptions in service. It is the Contractors' responsibility to know the location of any and all utilities prior to commencement of work and to continually monitor the status of the utilities. Any utility disturbed by the Contractor shall be repaired and placed in service immediately by this Contractor, at the expense of the Contractor who disturbed it.

2.06 USE OF EXISTING FACILITIES

- A. Contractors shall limit their and their Subordinate Parties' usage of the occupied areas of the facility to that which is absolutely necessary for the installation of their Work. Parts of the facility not in the construction area are "off limits" unless a specific work task is being performed as designated by Barton Malow Builders.
- B. Contractors and their Subordinate Parties will not be allowed the use of the Owner's cafeteria, parking, telephones, toilet facilities, tools, equipment, or any other item or facility belonging to the Owner, unless specifically authorized by Owner and Barton Malow Builders. Contractor's Subordinate Parties shall not use the Owner's facilities for personal use such as lunchrooms and similar areas for coffee breaks, clothing changes, or similar uses. The Owner's complex shall be off-limits to all construction personnel without prior approval of Owner and Barton Malow Builders.

2.07 EXISTING ENTRANCES AND DRIVES

- A. Contractor and construction delivery access to the worksite shall be as designated by Barton Malow Builders. Selected entrances to the Project site will remain open during normal working hours for the use of all Contractors. Contractor shall utilize specific entrances for material deliveries, equipment deliveries, and worker access to the Project site as directed by Barton Malow Builders.
- B. At no time are ANY vehicles to be parked, whether attended or not, in the Owner's entrances or drives. Any material delivery which will tie up the Owner's entrances or drives in excess of one (1) hour shall be pre-scheduled with the Owner through Barton Malow Builders. In scheduling construction deliveries the Contractor agrees that the Owner's deliveries and operations will take precedence.
- C. All gates will be locked with multiple locks (daisy chain) for Owner access.

2.08 PROTECTION OF UNDERGROUND FACILITIES

- A. Each Contractor shall provide and maintain proper shoring and bracing for existing underground utilities, sewers, and building foundations, encountered during its Work, to protect the project, or any part thereof, and surrounding areas from collapse or movement, or any other type of damage until such time as they are to be removed, incorporated into the new Work or can be properly backfilled upon completion of new Work. All such disruptions of services shall be limited to a maximum of four (4) hours unless otherwise coordinated and approved by Owner and Barton Malow Builders. Prior to beginning any Work that may affect underground facilities, Contractor shall contact Miss Dig, contract a Private Locator and utility companies for the location of all existing underground services and provide, if requested, documentation of such contact to Barton Malow Builders. Contractor shall pay for appropriate layout and locating of existing utilities per the work scopes.
- B. Provide plates to cover all trenches/holes as necessary to allow for Owner access.

- C. Utilities and/or other services which are shown, or not shown but encountered, shall be protected by the Contractor from any damage arising or resulting from Work, unless or until they are abandoned. If the utilities or services are damaged from Contractor's Work, Contractor shall immediately repair any damage and restore the utilities and services to an equal or better condition than that which existed prior to the damage. Contractor will be responsible for all liabilities, expenses, lawsuits, or claims arising or resulting from such damage and will defend, hold harmless and indemnify Owner and Barton Malow Builders from any claims or lawsuits or other expenses.
- D. Each Contractor on behalf of itself and its Subordinate Parties shall be responsible for all damage to the Project and surrounding areas including the existing building and grounds arising out of or resulting from their performance of the Work. Repair or replacement of damaged items shall be to the satisfaction of the Owner and Barton Malow Builders.

2.09 NO INTERRUPTION OF OCCUPANCY/SEQUENCING

- A. Each Contractor is responsible to plan, coordinate, and execute its Work in such a manner that there will be no disruption of the Owner's operations. If an interruption of operations is unavoidable, then this Work will be scheduled with the Owner through Barton Malow Builders prior to beginning such Work.
- B. Due to the nature of the Owner's existing areas, the sequence of Work must be scheduled and coordinated with the Owner's ongoing operations to minimize disruptions and/or disturbances to the Owner's Work and at all times remain as secondary to the Owner's operations. Each segment of the Work shall be coordinated with Barton Malow Builders and the Owner prior to proceeding.
- C. Work that interrupts the Owner's services will be accomplished during the time periods when it is least inconvenient to the Owner and completed in the shortest possible time frame. Contractors may be requested to work split shifts, weekends, off-peak Owner loading periods, etc., to accommodate Owner's utility and service requirements, such as, but not limited to, medical gas systems, electrical power, HVAC systems, storm, and sanitary/storm lines. The cost for premium time labor, which may be required, is the Contractor's responsibility and is to be included in the base bid.
- D. Contractors are responsible to provide any temporary alternate supply and/or return conditions to maintain services to the facility while Work is being performed for each Bid Category. Place safety stages or markers to indicate location of disconnected services.
- E. No interruptions to Owner's power, lighting, signal, or alarm circuits will be permitted without the express written permission of the Owner. Arrangements for interruptions shall be made with the Owner and Barton Malow Builders at least seventy-two (72) hours prior to the interruption and shall be made at such time and duration as authorized by them. Temporary feeders, transformer jumpers, connections, circuits, etc., shall be used as required to accomplish the above at no additional cost to the Owner and Barton Malow Builders .
- F. Contractors shall construct the Work in stages to provide for public convenience. Contractors shall not close off public use of facilities until completion of one stage of construction will provide alternative usage, or until other means have been provided.
- G. These provisions shall apply to all Contractors and are applicable whether a Contractor is either directly or indirectly affected.

2.10 MATERIAL STORAGE

- A. If allowed, each Contractor shall provide suitable storage trailers on-site as required. These are to be relocated and removed when directed by Barton Malow Builders.
- B. All Contractors may be required to provide on-site storage facilities. Temporary storage of materials on the site will be limited to the same areas immediately under construction for materials intended for that particular portion of the Work. Material, equipment, and tools shall not be stored on-site in excess of five (5) working days prior to installation or use without Barton Malow Builders' approval. Contractors shall stock the job with sufficient

materials to maintain progress and schedule and without interfering with the Work or storage of others. Each Contractor assumes full responsibility for the protection and safekeeping of products under its control which are stored on the site. All stored materials shall be on pallets or movable pipe/carts. Contractors must move any stored products, under their control, which interfere with operations of the Owner or separate contractors as directed by Barton Malow Builders. All Contractors are to cooperate with Barton Malow Builders and other contractors in this regard.

- C. Each Contractor shall provide sufficient protection for its materials and equipment from damages by weather or construction work or other hazards.
- D. During progress of Work and upon completion of the Work, Contractors shall remove all debris and leave the area in a clean and orderly condition.
- E. Each Contractor shall submit a receipt of shipment for all equipment stored on-site or off-site to Barton Malow Builders per 012000 - Price and Payment Procedures. No materials or equipment shall be removed from the site without the permission of Barton Malow Builders.
- F. Storage of combustible materials within or adjacent to the building is prohibited.

2.11 SPECIFICATION SECTIONS APPLICABLE TO ALL CONTRACTS

- A. Unless otherwise noted, all provisions of the sections listed below apply to all contracts. Specific items of work listed under individual contract descriptions constitute exceptions.
- B. Section 000103 - Project Directory.
- C. Section 012000 - Price and Payment Procedures.
- D. Section 012100 - Allowances.
- E. Section 012200 - Unit Prices.
- F. Section 012300 - Alternates.
- G. Section 013000 - Administrative Requirements.
- H. Section 013114 - Coordination Drawings (Not 3D).
- I. Section 013216 - Schedule and Phasing.
- J. Section 013553 - Security Procedures.
- K. Section 014000 - Quality Requirements.
- L. Section 014216 - Definitions.
- M. Section 014219 - Reference Standards.
- N. Section 015000 - Temporary Facilities and Controls.
- O. Section 015100 - Temporary Utilities.
- P. Section 015213 - Field Offices and Sheds.
- Q. Section 015500 - Vehicular Access and Parking.
- R. Section 016000 - Product Requirements.
- S. Section 017000 - Execution and Closeout Requirements.
- T. Section 017800 - Closeout Submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 012000
PRICE AND PAYMENT PROCEDURES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Schedule of Values
- B. Application for Payment Process
- C. Retention
- D. Stored Materials
- E. Waivers of Lien and Sworn Statements
- F. Change procedures
- G. Documentation of changes in Contract Sum and Contract Time.
- H. Procedures for preparation and submittal of application for final payment.
- I. This section does not include RFI's, ASI's, or other documentation that clarify the work but have no substantive cost or schedule impacts to the Work.

1.02 RELATED REQUIREMENTS

- A. Section 005200 - Agreement Form: Contract Sum, retainages, payment period, monetary values of unit prices.
- B. Section 007200 - General Conditions: Additional requirements for progress payments, final payment, changes in the Work.
- C. Section 012100 - Allowances: Payment procedures relating to allowances.
- D. Section 012200 - Unit Prices: Monetary values of unit prices; Payment and modification procedures relating to unit prices.
- E. Section 017800 - Closeout Submittals: Project record documents.

1.03 SCHEDULE OF VALUES

- A. Use Textura for submission of Schedule of Values.
- B. Once the Agreement is awarded, each Contractor must submit a Schedule of Values for its entire Work to Barton Malow Builders for approval. This Schedule of Values must be submitted either within fifteen (15) days of award or fifteen (15) days prior to the first payment application deadline (per the Application for Payment Schedule), whichever comes first. The Schedule of Values must include labor and material line items for each portion of the Work and broken out as described below.
- C. The Schedule of Values will be submitted via Textura.
 - 1. Unless otherwise directed or authorized, in writing, by Contractor, all Applications for Payment and all supporting documents (including but not limited to lien waivers, sworn statements, and the like) for Contractor and its subcontractors and suppliers, shall be in electronic format and shall be submitted to Contractor using the Oracle Textura Payment Management (TPM) system. Contractor shall be responsible for the fees and costs owed associated with Contractor's use of TPM. Contractor shall include a similar provision in its subcontracts and purchase orders. Fees to Contractors are calculated as 0.22% (22 basis points) of contract value (plus applicable taxes), with a maximum fee of \$3,750. Fees to Contractors' sub-subcontractors and suppliers are a fixed fee of \$100 per sub-subcontractor or supplier contract.
 - 2. The sum of the parts of the Schedule of Values shall equal the contract price.
 - 3. The minimum level of breakdown and order on the application for payment shall be:
 - a. Bond costs, if applicable
 - b. General conditions line item(s) (ex. cleanup, safety, testing, etc..)
 - c. Allowances
 - d. Costs associated with submittal paperwork and documentation
 - e. Costs associated with closeout documents, testing, inspection, etc.

- f. Cleanup
- g. Major portions of the Work shall be broken down into labor and material line items for specific areas of the facility. Larger portion of work such as concrete, curtainwall, drywall, mechanical, and electrical shall be broken down by elevation, floor, and areas appropriate.
- h. A listing of approved and executed Change Orders to the Contract, if any, in sequential order.
- 4. Schedule of Values items shall have a direct and understandable relation to the master Project Schedule. Indicate Activity ID where requested or appropriate.
- 5. Overhead and Profit shall be distributed into each item of work on a pro-rated basis.
- D. Textura Schedule of Values, unless objected to by Barton Malow Builders, Owner or Architect, shall be the basis for the Contractor's application for payments.
- E. Barton Malow Builders shall have the right to require the Contractor to alter the value or add/delete categories listed on the Schedule of Values at any time for the following reasons:
 - 1. The Schedule of Values appears to be incorrect or unbalanced.
 - 2. A revision of the Schedule of Values is required due to the Contractor revising the sequence of construction or assembly of building components that in turn invalidates the Schedule of Values.
 - 3. Change Orders are issued to the Contractor and shall be incorporated into the Schedule of Values as a separate line item at the bottom of the Schedule of Values.
- F. The Contractor is required to assemble and submit the documentation for payment of stored materials requested in the application for payment against the agreed upon breakdown of the Schedule of Values as described in Payment for Stored Materials. Barton Malow Builders reserves the right to not process the application for payment if this documentation has not been submitted in conjunction with the application.
- G. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Barton Malow Builders for approval.
- H. Forms filled out by hand will not be accepted.
- I. Submit Schedule of Values in Textura within 15 days after date established in Notice to Proceed.
- J. Revise schedule to list approved Change Orders, with each Application For Payment.

1.04 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Submit at intervals stipulated in the Agreement.
- B. Pay applications must be submitted in Textura.
- C. Step 1: Jobsite Inspection - DRAFT Payment Request:
 - 1. Contractor shall have a representative walk the Project site with Barton Malow Builders' representative and submit the preliminary pay application in Textura on or before the 15th of the month for Barton Malow Builders approval.
 - 2. Enter pay application in Textura for Work from the 20th of the previous month to the 20th of the present month.
 - 3. Contractor's pay application shall only reflect Work completed through the date of submission. Forecasting of payments will not be authorized for work to end of the month. If the walk-through occurs before the last day of the payment cycle, Barton Malow Builders shall determine, in its sole discretion, the amount Contractor may invoice, if any, for Work scheduled to be in place by the last day of the payment cycle.
- D. Step 2: Payment Request Preparation and SUBMISSION
 - 1. With the information agreed upon in Step 1, the Contractor shall prepare a formal application for payment in Textura.
 - 2. Sworn statement is to be updated from the previous month in Textura.
 - 3. All partial and full unconditional waivers must be uploaded into Textura each month.
- E. Step 3: Check DISTRIBUTION

1. Barton Malow Builders will issue individual checks to each Contractor. The Contractor will fill out the waiver of lien in Textura . Lien waivers must be completed in Textura and expired insurance certificates updated in TradeTapp to avoid payment delays.
2. The Contractor shall provide all supporting documentation substantiating the Contractor's right to payment as the Owner, Barton Malow Builders and the Architect may require.
3. All Contractors must maintain their prequalification status through the Project in order for Barton Malow Builders to process and distribute monthly and final payments. Submit all required updated financials, insurance, etc. as stipulated to maintain positive standing.

F. Late or incomplete pay application submissions will not be accepted.

- G. The Contractor must include with each request for progress payment a waiver of lien for all previous payments, Contractor's sworn statement, updated subcontractor and supplier partial and or unconditional final waivers and any necessary backup data as described. Waivers from Contractor and subordinate parties must be uploaded intoTextura monthly with submission of pay application.
- H. In requests for payment which follow the execution of a Change Order in excess of twenty-five percent (25%) of the Agreement price, Contractor must present a bond rider evidencing that the penal sum of any required payment and performance bonds have been increased to one hundred percent (100%) of the adjusted Agreement price. Submission of the required back-up data is a condition precedent to payment.
- I. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Barton Malow Builders for approval.
- J. Include the following with the application:
1. Partial release of liens from subcontractors and vendors.
 2. Affidavits attesting to off-site stored products.

1.05 RETENTION

- A. The Owner shall be entitled to withhold ten (10%) percent of each payment due to a Contractor. Contractors may not drop retainage to 5% until all warranties, o/m manuals, testing, commissioning, training, extra materials, and punch list items have been completed, turned over, accepted, and documented. Contractors must also have current partial and final waivers from subcontractors and suppliers. To bill out the remainder of retainage (from 5% to 0%), the contractor must set up a meeting with Barton Malow Builders to review and/or collect the remaining closeout items for final payment including all final unconditional waivers from subcontractors and suppliers.
- B. When requesting a reduction of retention, the Contractor shall submit an AIA G707A, Consent of Surety to Reduction In or Partial Release of Retention form to Barton Malow Builders .
- C. When requesting a final payment, the Contractor shall submit an AIA G707, Consent of Surety to Final Payment form to Barton Malow Builders .
- D. Notwithstanding the foregoing, payment of retention shall be subject to all other conditions precedent that applies to payment as set forth in the Contract Documents.

1.06 STORED MATERIALS

- A. The Contractor, if intending to use an off-site storage area or facility for stored materials, shall submit a written request to the Owner and Construction Manager and obtain approval prior to submitting the first application for payment as described in Part 1.04.
- B. Payments will be made for materials properly stored off site.
1. "Properly stored" shall mean in an insured warehouse with the Troy School District and Barton Malow Builders being named as insureds, and all material identified as property of the Owner using markings or signage.
 2. The Contractor is responsible for all associated off site storage costs, transportation, insurance, including insurance coverage for stored material, while in transit, unless

- Contractor obtains written documentation that the material is covered during transit under a Builder's Risk Policy applicable to the Project.
3. Contractor shall provide Troy School District and Barton Malow Builders verification in writing for all material so stored. Such materials shall be protected from diversion, destruction, theft, and damage to the satisfaction of Barton Malow Builders, Owner and the Lender (if any), specifically marked for use on the Project, and segregated from other materials at the storage facility.
 4. The Contractor bears all risk of loss to materials and equipment stored off site.
- C. Contractor is to provide supporting documentation in the form of invoices, photographs, insurance policies, and any other pertinent documentation as requested by Barton Malow Builders or Owner for items stored off-site. Documentation shall include the following:
1. Detailed description of the material, including quantities. This serves as a material description for the billing and as information to file a claim with an insurance company.
 - a. Stored Materials: Each item must be identified as to manufacturer, model number, and serial number, if applicable, or other identifiers should be listed for each item. Each listing must be accompanied by invoices, shipping tickets, consent of surety, and any other applicable supporting documentation.
 - b. Stored Manufactured Building Materials: Each item must be identified as to type, manufacturer's number or designation, and should also list the number of cartons and the contents therein storage. Each listing must also be accompanied by supporting documents including all invoices, shipping tickets and consent of surety.
 - c. Stored Fabricated Materials - A listing specifying the number of pieces, items, and marks as may be applicable to the particular type of items. Photographs should accompany the request.
 2. Individual itemized costs of materials and the total cost value, which shall not exceed the Contractor's material supplier cost. The total cost value shall be supported by the Contractor's material supplier invoices for the stored material.
 3. Estimated cost value for those materials that are fabricated by the Contractor's material supplier.
 4. The location where the material is physically stored, including the warehouse address and storage location within the warehouse, such as bin number, aisle number or other designation. All material shall be segregated and marked.
 5. Copies of the insurance policies that cover the stored materials and that name Barton Malow Builders and Troy School District the as insureds. The limit of the insurance policy shall be equal to or greater than the replacement value of the stored materials.
- D. When Applications for Payment include products stored off the Project Site or stored on the Project Site but not incorporated in the Project, for which no previous payment has been requested, a complete description of such product shall be attached to the application.
- E. Contractor shall submit a certificate of title listing Troy School District's ownership in the off-site stored materials equal to the amount paid effective at the time funds are delivered.
- F. All payment requests for off-site stored materials must be accompanied using the "Payment Request for Stored Materials." form obtained from your Barton Malow Builders representative. Payment requests for stored materials not complying with the foregoing requirements will not be approved. Contractors are to notify Barton Malow Builders in ample time to conduct verification procedures.
- G. Contractors may not apply the cost of materials stored off-site towards a reduction in the retention amount.
- H. Representatives of Barton Malow Builders and Troy School District , and the Lender (if applicable) shall have the right to make inspections of the storage areas at any time.

1.07 LIEN WAIVERS AND SWORN STATEMENTS

- A. Waivers of Lien
1. The Contractor's first Application for Payment will be based upon 100 percent of the value of Work installed. The first payment, amounting up to 90 percent of application,

will be made to the Contractor without supporting documentation. Subsequent Applications for Payment must be accompanied by lien waivers from the Contractor, its Subordinate Parties or receipted invoices covering payment to the Contractor for previous calendar month period. Lien waivers must be unconditional and must show the amount paid.

2. An "Acknowledgment of Payment and Partial Unconditional Release" is to be completed in Textura for the previous month's application. Under no circumstances will payment be released until the completed "Acknowledgment of Payment and Partial Unconditional Release" has been submitted in Textura from the previous month.
3. Final payment will not be made until an Conditional Final Release and Waiver Contractor/Material has been submitted. This form may be obtained and submitted in Textura. The Final Release must be signed by an authorized representative of the Contractor and must be notarized.
4. Final unconditional waivers will be required for all of Contractor's Subordinate Parties listed on Contractor's sworn statement. These final waivers must be submitted along with the final release, before payment can be made.

B. Sworn Statements

1. The Sworn Statements must be completed, updated and submitted in Textura to the satisfaction of Barton Malow Builders with each Contractor's Application for Payment.

1.08 MODIFICATION PROCEDURES

- A. All Contractors are required to notify Barton Malow Builders per the terms of the Agreement and in alignment with the Prime Contract. When changes to site conditions or scope are encountered, submit written notification in accordance with those requirements.
- B. Unless explicitly notified in writing within ten (10) calendar days of issuance, all RFIs, ASIs, or other forms of field communication issued to clarify the work, Barton Malow Builders and Owner will assume recipients agree the clarification is within the already established contract scope.
- C. Types of Change Documentation
 - a. Changes to the work which may involve a change in the contract price or schedule will be accompanied by the Barton Malow Builders form entitled "PCO - Quotation Only". In the event that the timing does not allow the for Quote Only process, then Barton Malow Builders will issue its form entitled "PCO - Notice to Proceed."
 1. PCO - Quotation Only
 - a. The PCO - Quotation Only is a document used for processing Contractor's quotations and is **not** a Change Order. Therefore, completion of the PCO - Quotation Only does **not** release the Work to begin.
 - b. Contractor shall prepare a detailed cost quotation for the PCO. This quotation shall include an itemized takeoff of labor, equipment and material with a unit cost for each item together with backup, material invoices and other breakdown documentations satisfactory to Barton Malow Builders. The PCO must be signed and returned as directed.
 - c. If pricing is not received within ten (10) calendar days of issuance, Barton Malow Builders reserves the right to include the PCO in a zero-dollar change order, or quote the work on behalf of the Contractor. Circumstances may arise that require an expedited quote of less than ten (10) by Contractors. Contractors shall provide quotes within the requested timelines as directed by Barton Malow Builders.
 2. PCO - Notice to Proceed
 - a. A PCO - Notice to Proceed is used when Work must be performed with swiftness and authorization to proceed by Change Order is inappropriate due to time restrictions. In order for a PCO - Notice to Proceed to be valid, it must be signed by Barton Malow Builders. The terms for establishing the additional cost and processing of the PCO - Notice to Proceed into a Change Order shall be identified prior to its release by Barton Malow Builders.

- b. Contractor shall prepare a detailed cost quotation for the PCO. This quotation shall include an itemized takeoff of labor, equipment and material with a unit cost for each item together with material invoices, backup and detailed breakdown from suppliers and subcontractors. The PCO must be signed and returned as directed.
- c. Contractor shall sign and date the PCO and submit it with proper backup. The PCO will then be reviewed, evaluated, negotiated and then, when acceptable, processed.
- d. A PCO – Notice to Proceed may be issued with direction to track the Work on a Time and Material basis (T&M). In this case, Contractors are to supply daily time tickets to Barton Malow Builders for verification. In the event that proceeding on T&M is given a “Not to Exceed” amount, the Contractor is responsible to track daily costs and notify Barton Malow Builders promptly if costs are projected to be greater than the Not to Exceed amount. No additional compensation will be provided for T&M changes that are greater than the Not to Exceed amount if no notification is given to Barton Malow Builders prior to commencing the work causing the additional cost.
- e. If a change results in a change in cost, Barton Malow Builders will issue a PCO with the supporting change documents.
- f. PCO's may precede a Change Order. Contractors shall receive an approved PCO - Notice to Proceed or an executed Change Order before starting Work. Any changed Work performed by Contractor without a properly executed PCO - Notice to Proceed or a properly executed Change Order is at Contractor's sole risk and expense. BILLINGS AGAINST CHANGES WILL NOT BE ACCEPTED AFTER A PCO - NOTICE TO PROCEED OR FOR QUOTE ONLY IS ISSUED, BUT ONLY AFTER A CHANGE ORDER HAS BEEN PROCESSED AND FULLY EXECUTED BY ALL PARTIES.

D. Change Order

- 1. Change Orders will be issued by Barton Malow Builders . Barton Malow Builders will first issue the Change Order to the Contractor for signature. The Change Order will then be returned to Barton Malow Builders and sent to the Architect and Owner for signature. Once all appropriate signatures are secured, an executed copy will be sent to the Contractor.
- 2. Once the Change Order has been processed and signed by all parties, the Contractor may invoice for payment on the completed portion of Work.
- 3. Agreement on a Change Order shall constitute a final settlement of all matters relating to the changed Work that is the subject of the Change Order.

E. Contractor Overhead and Profit for Changes in the Work

- 1. For changes resulting in **increase** of cost:
 - a. Overhead and profit for the Contractor shall not exceed the following when change Work is performed by:
 - 1) Contractor itself: 10%
 - 2) Contractor subordinate party: 10%
 - b. Overhead and profit for the subordinate party shall not exceed the following when change Work is performed by:
 - 1) Subordinate party itself: 5%
 - 2) Subcontractor to the subordinate party: 5%
 - c. For changes resulting in reduction of cost
 - 1) Deductive costs shall include commensurate deductive credits for overhead and profit based on the percentages stated above.
 - d. Contractor's and Subordinate Party's overhead and profit shall include cost (at the Project Site, home office and otherwise) of supervision, Bo telephone, travel, copying, administrative services, office, power, light, tools, cartage, jobsite vehicles, and all other general expenses. **In no event shall these items be charged as cost of the Changed Work.**

- 1) For K-12 and Higher Ed projects in Michigan, Bond Premiums shall also be included within the Contractors overhead and profit.
 - 2) For K-12 and Higher Ed projects in Michigan, Autodesk Build and Textura Premiums shall also be included within the Contractors overhead and profit.
- e. Any allowances included in Contracts are to have Overhead and Profit accounted for in the bid **outside** of the allowance/work scope item value. No additional mark-up will be given for this work.

F. Itemization of Cost of Changed Work

1. Correlation with Contractors Submittals
 - i. Contractors shall:
 - a. Revise the Schedule of Values and Request for Payment forms to record each Change Order as a separate item of Work, and to record the adjusted contract price.
 - b. Revise the Construction Schedule to reflect each change in Contract Time approved by a Change Order.
 - c. Revise schedules to show changes for other items of Work affected by the changes.
 - d. Enter and revise Record Documents to reflect changes

G. COST OF THE CHANGED WORK

1. Submit costs on Contractor letterhead with the associated breakdown, or contact a Barton Malow Builders representative for the Contractor Change Order Template.
2. The "Cost of the Changed Work" shall be approved by and shall mean the costs necessarily incurred by the Contractor in the proper performance of the Changed Work. The Cost of the Changed Work shall only include those items set forth below or those items for which Barton Malow Builders is entitled reimbursement under its agreement with Owner, the most restrictive provisions controlling.

WAGES OF LABOR	Wages of construction workers directly employed by Contractor to perform the construction of the changed Work at the site.
PAYROLL MARKUP	The amount approved by Barton Malow Builders and Owner which covers the costs paid by the Contractor for taxes, insurance, contributions, assessments, and benefits required by law or collective bargaining agreements and for personnel not covered by such agreements, customary benefits such as sick leave, medical and health benefits, holidays vacations and pensions, provided that such costs are based on the wages and salaries of labor performing the changed Work.
COST OF EQUIPMENT, MATERIALS, AND SUPPLIES	Costs of materials, equipment and supplies to be incorporated into the changed Work less all savings, discounts, rebates and credits accruing to the Contractor.
RENTAL CHARGES FOR EQUIPMENT NOT OWNED BY CONTRACTOR	Rental charges for equipment not owned by Contractor that is necessary for completion of the Changed Work. Rates and quantities rented must be approved in advance by Barton Malow Builders.
TAXES	Sales or use taxes imposed by a governmental authority which are directly attributable to the changed Work and for which the Contractor is liable.

SUBORDINATE PARTY COSTS	Payments made to the Contractors for proper execution of Changed Work, subject to the limits set forth above for overhead and profit.
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- H. In no event shall the Cost of Changed Work include:
1. Salaries or wages of persons other than those directly performing the changed Work, including Contractor's personnel stationed at the principal office.
 2. Expenses of the Contractor's principal office and offices other than the site office, except as provided above.
 3. Overhead and general expenses of any nature, except as set forth above.
 4. Capital expenses of Contractor, including interest on the Contractor's capital employed for the Changed Work.
 5. Rental costs for machinery or equipment, except as allowed above, or tools of any kind, unless specifically identified and approved in advance in writing by Barton Malow Builders.
 6. Costs due to the negligence or failure to perform of the Contractor or its Subordinate Parties.
 7. Costs designated above as being included in Overhead and Profit.
 8. Any cost not specifically described above, or otherwise approved in advance and in writing by Barton Malow Builders and Owner.
- I. All Contractors shall meet with Barton Malow Builders to review and approve the quotation format immediately after contract award. The approved format shall be used consistently throughout the project.
1. Ensure the quotation has the PCO number at or near the top of each page.
- J. Labor Rates: Upon submission of bids prior to contract award, Contractor (and for their subordinate parties) shall submit their labor rates for all applicable trade categories for approval.
1. Provide breakdown of the rate, including the base wage, fringes, benefits, insurance, without any other markup included. This rate is subject to Barton Malow Builders and Owner approval as it is reflected in a PCO quotation.
- K. For changes for which advance pricing is desired, TMP Architecture, Inc will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid shall prepare and submit a fixed price quotation within ten (10) days.
- L. Substantiation of Costs: Provide full information required for evaluation.
1. Provide the following data:
 - a. Quantities of products, labor, and equipment.
 - b. Taxes, insurance, and bonds (if allowed above).
 - c. Overhead and profit.
 - d. Credit for deletions from Contract, similarly documented.
 2. Support each claim for additional costs with additional information:
 - a. Invoices and receipts for products, equipment, and subcontracts, similarly documented.
 3. For Time and Material work, submit itemized T&M tickets signed daily by Barton Malow Builders and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.
- M. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.

1.09 APPLICATION FOR FINAL PAYMENT

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.

- B. Application for Final Payment will not be considered until the following have been accomplished:
 - 1. All closeout procedures specified in Section 017000 - Execution and Closeout Requirements.
 - 2. Application for Final Payment will not be considered until the following have been accomplished:
 - 3. All closeout procedures specified in Section 017000 - Execution and Closeout Requirements.
 - 4. All warranty, start-up, as-builts, O/M manuals, training Contractor guarantee, and documentation specified in the project documents are completed and submitted to Barton Malow Builders.
 - a. A/E Field Report(s) items corrected and signed off.
 - 5. Architects/Engineers punch list items signed off and completed.
 - 6. Test & Balance deficiencies corrected.
 - 7. Commissioning items signed off and completed.
 - 8. Barton Malow Builders punch list items signed off and completed.
 - 9. Owners punch list items signed off and completed.
 - 10. Contractor Permits Finialed and Permits Closed out.
- C. In addition, at submission of the final pay application Contractor shall provide unconditional final waivers of lien for all Subordinate Parties, as well as all close out documentation and all additional back up data described.

END OF SECTION

**SECTION 012100
ALLOWANCES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Contingency allowance.
- B. Payment and modification procedures relating to allowances.

1.02 RELATED REQUIREMENTS

- A. Section 012000 - Price and Payment Procedures: Additional payment and modification procedures.

1.03 CONTINGENCY ALLOWANCE

- A. Contractor's costs for products, installation, labor, insurance, payroll, taxes, equipment rental will be included in authorizing expenditure of funds from this Contingency Allowance.
- B. Any allowances included in Contracts are to have Overhead and Profit accounted for in the bid outside of the allowance/work scope item value. No additional mark-up will be given for this work.
- C. At closeout of Contract, funds remaining in Contingency Allowance will be credited to Owner by Change Order.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 012200
UNIT PRICES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. General Requirements
- B. Unit Prices
- C. Measurement and payment criteria applicable to Work performed under a unit price payment method.

1.02 RELATED REQUIREMENTS

- A. Document 002113 - Instructions to Bidders: Instructions for preparation of pricing for Unit Prices.
- B. Section 012000 - Price and Payment Procedures: Additional payment and modification procedures.

1.03 GENERAL

- A. This Section specifies administrative and procedural requirements for unit prices.
- B. Refer to the Bid Proposal form and to individual work scopes, drawings and specification sections for the establishment of unit prices.
- C. Schedule: A "Unit Price Schedule" is included on each bid form and must be filled out completely by Contractor at time of bid. Specification Sections referenced in the Schedule contain requirements for materials and methods described under each unit price.
- D. The Owner reserves the right to reject the Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured by an independent surveyor at the Owner's expense.

1.04 UNIT PRICES

- A. A unit price is an amount proposed by bidders and stated on the Bid Proposal form as a price per unit of measurement for items of work or services that will be added to or deducted from the Contract Sum by change order in the event the estimated quantities of work required by the Contract Documents are increased or decreased.
 - 1. There shall be no more than 10% difference between the add and deduct amounts of the same unit price. Failure to provide a deduct price will result in the add price being used.
- B. Unit Prices Should Include Costs for:
 - 1. Labor, materials, tools, equipment, and overhead & profit.
 - 2. Contractor, their subcontractors, and/or manufacturer expediting, fabrication, warehousing, transportation and delivery, unloading, hoisting, scaffolding, installation, grouting, shimming, fasteners, and hangers.
- C. The calculations for determining the number of units of work, unless otherwise noted, shall be of actual surface, volume, length, hours or numbers of individual items listed for the class of work, complete in place and accepted or omitted. No allowance for waste, loss or damage will be made.

1.05 MEASUREMENT OF QUANTITIES

- A. Take all measurements and compute quantities. Measurements and quantities will be verified by Barton Malow Builders and Architect/Engineer.
- B. Testing Agency or Surveyor will take all sitework measurements and compute quantities accordingly.
- C. Assist by providing necessary equipment, workers, and survey personnel as required.
- D. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.

- E. Measurement by Area: Measured by square dimension using mean length and width or radius.
- F. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.
- G. Stipulated Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as a completed item or unit of the Work.

1.06 PAYMENT

- A. Payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities of Work that is incorporated in or made necessary by the Work and accepted by TMP Architecture, Inc and Barton Malow Builders, multiplied by the unit price.
- B. Payment will not be made for any of the following:
 - 1. Products wasted or disposed of in a manner that is not acceptable.
 - 2. Products determined as unacceptable before or after placement.
 - 3. Products not completely unloaded from the transporting vehicle.
 - 4. Products placed beyond the lines and levels of the required Work.
 - 5. Products remaining on hand after completion of the Work.
 - 6. Loading, hauling, and disposing of rejected Products.

1.07 DEFECT ASSESSMENT

- A. Replace Work, or portions of the Work, not complying with specified requirements.
- B. If, in the opinion of either TMP Architecture, Inc and Barton Malow Builders, it is not practical to remove and replace the Work, TMP Architecture, Inc will direct one of the following remedies:
 - 1. The defective Work may remain, but the unit price will be adjusted to a new unit price at the discretion of TMP Architecture, Inc and Barton Malow Builders.
 - 2. The defective Work will be partially repaired to the instructions of the TMP Architecture, Inc and the unit price will be adjusted to a new unit price at the discretion of TMP Architecture, Inc and Barton Malow Builders .
- C. If, in the opinion of Owner, it is not practical to remove and replace the Work, Owner will direct one of the following remedies:
 - 1. The defective Work may remain, but the unit price will be adjusted to a new unit price at the discretion of Owner.
 - 2. The defective Work will be partially repaired to the instructions of the Owner, and the unit price will be adjusted to a new unit price at the discretion of Owner.
- D. The authority of TMP Architecture, Inc and Barton Malow Builders to assess the defect and identify payment adjustment is final.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 012300
ALTERNATES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Procedures for pricing Alternates
- B. Voluntary Alternates
- C. Description of Alternates.
- D. Procedures for pricing Alternates.
- E. Documentation of changes to Contract Sum and Contract Time.

1.02 RELATED REQUIREMENTS

- A. Document 002113 - Instructions to Bidders: Instructions for preparation of pricing for Alternates.
- B. Document 005200 - Agreement Form: Incorporating monetary value of accepted Alternates.

1.03 ACCEPTANCE OF ALTERNATES

- A. Each Bidder must bid on all Alternates listed in the Bid Proposal that are applicable to its Bid Category. Alternates will be fully considered in awarding the Agreement.
- B. Each Alternate under consideration will be indicated below or be reflected within the Bid Form. When Building Connected is utilized for bid receipt, each Bidder shall fill in the requested Alternate prices as a separate price from the Bid Amount. If special considerations must be provided, Bidders shall provide a separate Clarifications page within their Bid Proposal.
- C. The Owner shall be allowed a period of ninety (90) days after date of receipt of the Bid Proposals to exercise the right to accept or reject any or all Alternates submitted on the Bid Proposal.
- D. Successful Bidders shall perform all Work required for complete execution of accepted Alternates, and the Bid Proposal shall include all overhead and profit for the Work required.
- E. Coordinate related work and modify surrounding work to integrate the Work of each Alternate.

1.04 VOLUNTARY ALTERNATES

- A. All Bid Proposals must be based upon the Bidding Documents. In addition to a Base Bid Proposal, the submission of Voluntary Alternates is acceptable and encouraged. If a Voluntary Alternate is submitted for consideration, it shall be expressed on the Bid Form as an add or deduct amount from the Base Bid. The Owner or Owner and Barton Malow Builders reserve the right to unilaterally accept or reject Voluntary Alternates and to determine if the Voluntary Alternates will be considered in the awarding of the Agreement.
- B. Bidders shall indicate any associated trades or work categories, if any, that may be affected by the proposed voluntary alternate.
- C. Voluntary Alternates quoted on Bid Forms 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 Voluntary Alternates.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 012500
SUBSTITUTION PROCEDURES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Procedural requirements for proposed substitutions.

1.02 RELATED REQUIREMENTS

- A. Section 002113 - Instructions to Bidders: Restrictions on timing of substitution requests.
- B. Section 012200 - Unit Prices, for additional unit price requirements.
- C. Section 012300 - Alternates, for product alternatives affecting this section.
- D. Section 013000 - Administrative Requirements: Submittal procedures, coordination.
- E. Section 016000 - Product Requirements: Fundamental product requirements, product options, delivery, storage, and handling.
- F. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions: Restrictions on emissions of indoor substitute products.

1.03 DEFINITIONS

- A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.
 - 1. Substitutions for Cause: Proposed due to changed Project circumstances beyond Contractor's control.
 - a. Unavailability.
 - b. Regulatory changes.
 - c. [].
 - 2. Substitutions for Convenience: Proposed due to possibility of offering substantial advantage to the Project.
- B. Substitution requests offering advantages solely to the Contractor will not be considered.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

- A. Furnish and install Products specified, under options and conditions for substitutions stated in this Section.
- B. Any and all Substitution Requests must be accompanied with the appropriate form in the Project Specifications or Project Manual filled out to completion. This form must be submitted with all supporting documentation via Building Connected prior to bid and Autodesk Build post award following all other submittal requirements/processes.
- C. Any product for which a substitution request is submitted must meet all specification requirements.
- D. Architect will determine acceptability of proposed substitution.
 - 1. Under no circumstances will the Architect be required to prove that a product proposed for substitution is or is not equal to the quality of the product specified.
- E. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
 - 2. Agrees to provide the same warranties or bonds for the substitution as for the specified product.
 - 3. Agrees to provide same or equivalent maintenance service and source of replacement parts, as applicable.
 - 4. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.

5. Waives claims for additional costs or time extension that may subsequently become apparent.
 6. Agrees to reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.
 7. Has confirmed cost data is complete and includes related costs under its Agreement, but does not include:
 - a. Costs under separate contracts.
 - b. Architect's costs for redesign or revision of Contract Documents.
 8. Cost data need not be submitted, if request is for inclusion in an addendum. Requests after the Agreement is awarded shall contain a complete cost comparison.
- F. A Substitution Request for specified installer constitutes a representation that the submitter:
1. Has acted in good faith to obtain services of specified installer, but was unable to come to commercial, or other terms.
- G. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.
1. Note explicitly any non-compliant characteristics.
- H. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
1. Forms indicated in the Project Specifications or Project Manual are adequate for this purpose, and must be used.
- I. Each Substitution request should be accompanied by the following supporting documentation:
1. Product identification, including the manufacturer's name and address
 2. Manufacturer's literature; identifying:
 - a. Product description and technical information.
 - b. Reference standards.
 - c. Performance and test data
 - d. Installation instruction, operating procedures, and other like information. Indication of whether the substitution is for cause or convenience.
 - e. Samples, as applicable.
 - f. Names and addresses of similar projects on which product has been used, and date of each installation.
 - g. Itemized comparison of the proposed substitution with the product specified, listing all significant variations.
 - h. Data relating to changes in delivery or construction schedule.
 - i. A list of all effects of the proposed substitution on separate contracts.
 - j. Accurate cost data comparing the proposed substitution with the product specified.
 - 1) Amount of any net change to Contract Sum.
 - k. Designation of availability of maintenance services and sources of replacement materials.
 - l. Environmental Product Declaration (EPD) to compare the upfront embodied carbon emissions to those of the specified materials or products.
- J. Substitutions will not be considered for acceptance when:
1. They are indicated or implied on shop drawings or product data submittals without a formal request from Contractor.
 2. Acceptance will require substantial revision of Contract Documents.
 3. In judgment of Architect, do not include adequate information necessary for a complete evaluation.
 4. If requested after Contract Award directly by a subcontractor or supplier, except for special or unusual circumstances reviewed by the Contractor with Architect/Engineer, Construction Manager, and Owner.
- K. Warranties.
1. Other salient features and requirements.

- a. Include, as appropriate or requested, the following types of documentation:
 2. Product Data:
 - L. Certificates, test, reports or similar qualification data.
 - M. Drawings, when required to show impact on adjacent construction elements.
 - N. Impact of Substitution:
 1. Savings to Owner for accepting substitution.
 2. Change to Contract Time due to accepting substitution.
 - O. Limit each request to a single proposed substitution item.
 1. Submit an electronic document via Building Connected prior to bid and Autodesk Build after award, combining the request form with supporting data into single document.
 - 1) Indication of whether the substitution is for cause or convenience.

3.02 SUBSTITUTION PROCEDURES DURING PROCUREMENT

- A. Base Bid shall be in accordance with the Contract Documents.
- B. Bidder's Options
 1. For products that are specified only by reference standard, select product meeting that standard by any manufacturer.
 2. For products specified by naming several products or manufacturers, select any one of products and manufacturers named which complies with Specifications.
 3. For products specified by naming several products or manufacturers and stating "or equivalent", or "or equal", or "or Architect approved equivalent", or similar wording, submit a request as for substitutions, for any product or manufacturer which is not specifically named for review and approval by the Architect/Engineer.
 4. For Products specified by naming only one product and manufacturer, there is no option and no substitution will be allowed.
- C. Architect will consider requests from the Bidder for substitution of products in place of those specified as set forth in this section.
- D. Those submitted the specified calendar days prior to Bid Date will be included in an addendum if acceptable.
- E. After the end of the bidding period, requests will be considered only in case of product unavailability or other conditions beyond the control of Contractor.
- F. Bid Proposals shall not be based on assumed acceptance of any item which has not been approved by Architect/Engineer or Addendum.
- G. Bidders are required to submit a separate Substitution Request Form for each proposed substitution. Each submissions must meet all requirements as outlined in section above.
- H. Submittal Form (before award of contract):
 1. Submit substitution requests by completing the substitution request form located in Project Specifications or Project Manual. See this form for additional information and instructions. Use only this form; other forms of submission are unacceptable.
- I. Owner will consider requests for substitutions only if submitted at least 10 days prior to the date for receipt of bids.

3.03 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

- A. Submittal Form (after award of contract):
 1. Submit substitution requests by completing the substitution request form in the Project Specifications or Project Manual. See this section for additional information and instructions. Use only this form; other forms of submission are unacceptable.
- B. Substitution requests must be submitted with enough time to allow for complete review by the Architect/Owner and not delay Project Schedule.
- C. In addition to meeting general documentation requirements, document how the requested substitution benefits the Owner through cost savings, time savings, greater energy conservation, lower upfront embodied carbon emissions, or in other specific ways.

1. Document means of coordinating of substitution item with other portions of the work, including work by affected subcontractors.
2. Bear the costs engendered by proposed substitution of:
 - a. Any additional engineering costs required to be performed by the Architect to approve, implement, or coordinate the substitution above reasonable review services, shall be paid by the Contractor proposing the substitution.
 - b. Other construction by Owner and Contractors.
 - c. Any modifications necessary as a result of the use of an approved substitute shall be paid by the Contractor proposing the substitution.
- D. Substitutions will not be considered under one or more of the following circumstances:
 1. When they are indicated or implied on shop drawing or product data submittals, without having received prior approval.
 2. Without a separate written request.
 3. When acceptance will require revisions to Contract Documents.

3.04 RESOLUTION

- A. Architect/Owner may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.
- B. Architect/Owner will determine acceptability of proposed substitution.
 1. Under no circumstances will the Architect be required to prove that a product proposed for substitution is or is not equal to the quality of the product specified.
- C. Architect/Owner will notify Barton Malow Builders in writing of decision to accept or reject request via approval of the substitution request form.
- D. Substitution requests that are not approved will be returned to the party submitting the request with an explanation for the rejection.

3.05 ACCEPTANCE

- A. Accepted substitutions change the work of the Project. They will be documented and incorporated into work of the project by Change Order, Construction Change Directive, Architectural Supplementary Instructions, or similar instruments provided for in the Conditions of the Contract.

3.06 CLOSEOUT ACTIVITIES

- A. See Section 017800 - Closeout Submittals, for closeout submittals.
- B. Include completed Substitution Request Forms as part of the Project record. Include both approved and rejected Requests.

END OF SECTION

**SECTION 013000
ADMINISTRATIVE REQUIREMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Electronic document service.
- B. Meetings.
- C. Construction Progress Schedule.
- D. Daily Construction Reports.
- E. Progress Photographs.
- F. Coordination Drawings.
- G. Requests for Information (RFIs).
- H. Submittals.
- I. Substitution Requests.
- J. Submittals for Project Closeout.
- K. Number of Copies of Submittals.
- L. Submittal Procedures.
- M. Submittal Review.

1.02 RELATED REQUIREMENTS

- A. Section 007200 - General Conditions: Dates for applications for payment.
- B. Section 013216 - Schedule and Phasing: Form, content, and administration of schedules.
- C. Section 016000 - Product Requirements: General product requirements.
- D. Section 017000 - Execution and Closeout Requirements: Additional coordination requirements.
- E. Section 017800 - Closeout Submittals: Project record documents; operation and maintenance data; warranties and bonds.
- F. Section 019113 - General Commissioning Requirements: Additional procedures for submittals relating to commissioning.
 - 1. Where submittals are indicated for review by both Architect and Owner and the Commissioning Authority, submit one extra and route to Owner first, for forwarding to the Commissioning Authority.
 - 2. Where submittals are not indicated to be reviewed by Architect and Owner, submit directly to the Commissioning Authority; otherwise, the procedures specified in this section apply to commissioning submittals.

1.03 GENERAL ADMINISTRATIVE REQUIREMENTS

- A. All field and/or construction correspondence and/or communications must be directed through Barton Malow Builders , 1140 Rankin Dr, Troy, MI 48083. All correspondence should list the following as appropriate:
 - 1. Barnard, Bemis, Hill, and IAE Exterior Door and Window Upgrades
 - 2. 9932
 - 3. 13157G, 13158E, 13164B, & 13175G
 - 4. Contractor contact information
 - 5. Subject: clearly indicate subject matter of correspondence
- B. Comply with requirements of Section 017000 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.
- C. Make the following types of submittals to Barton Malow Builders.
 - 1. Requests for Information (RFI).
 - 2. Requests for substitution.

3. Shop drawings, product data, and samples.
4. Test and inspection reports.
5. Design data.
6. Manufacturer's instructions and field reports.
7. Applications for payment and change order requests.
8. Progress schedules.
9. Coordination drawings.
10. Correction Punch List and Final Correction Punch List for Substantial Completion.
11. Closeout submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 ELECTRONIC DOCUMENT SERVICE

- A. Unless otherwise directed or authorized, in writing, by Barton Malow Builders, all RFI's, submittals, forms, and project documents, for the Contractor and its subordinate parties, shall be submitted to Barton Malow Builders using the Autodesk Build application.
- B. All documents transmitted for purposes of administration of the contract are to be in electronic (PDF, MS Word, or MS Excel) format, as appropriate to the document, and transmitted via Autodesk Build, or via email to the appropriate Barton Malow Builders representative until the Autodesk Build accounts have been set up.
 1. All PDF submissions must meet the below requirements:
 - a. Bookmarked – All PDFs shall have established bookmarks for ease of navigation
 - b. Hyperlinked – All PDFs which are large scale drawings shall utilize hyperlinks reference pages within the document or other PDFs within the file folder which are made reference through one of the following mechanisms: sections, elevations, details, etc.
 - c. Original PDF format – All PDF documents shall be natively printed to PDF from the original document i.e. scanned documents will not be accepted
 - d. Digital Signature – all contractors shall have the ability to digitally sign and certify PDF documents and shall do so where required by the specifications, where specifically instructed to by Barton Malow Builders , and when required by the AHJ.
 2. Excel (.XLS) – Native excel files will be required with all data for any form that is completed for the project (in addition to any executed copies). This is for verification and reporting purposes. This will include but not be limited to AIA703/AIA704 payment applications, MBE forms, sworn statements, LEED tracking, change proposals, etc.
 3. Besides submittals and closeout, this procedure applies to Requests for Information (RFIs), progress documentation, contract modification documents (e.g. supplementary instructions, change proposals, change orders), field reports and meeting minutes, TMP Architecture, Inc and Barton Malow Builders' correction punch list, and any other document of the project record.
 4. Users of the service need an iPad, internet access, email address and PDF review software that includes ability to mark up and apply electronic stamps (such as Adobe Acrobat, www.adobe.com, or Bluebeam PDF Revu, www.bluebeam.com), unless such software capability is provided by the service provider.
 5. It is the Contractor's responsibility to submit documents in allowable format.
- C. All other specified submittal and document transmission procedures apply, except that electronic document requirements do not apply to samples or color selection charts.
- D. The "Plans" folder within Autodesk Build will automatically be updated to be the "latest and greatest" version of each sheet. Contractor is responsible to be working off the most up to date project drawings at all times – this is the location that those can always be found (including all RFIs posted in their respective locations). No compensation will be provided to Contractors needing to fix deficient work caused by building off an outdated set of project drawings.

- E. The Field Documents "Current Specs " folder within Autodesk Build will automatically be updated to be the "latest and greatest" version of each project specification section. Contractor is responsible to be working off the most up to date specifications at all times – this is the location that those can always be found. No compensation will be provided to Contractors needing to fix deficient work caused by building off an outdated set of project specifications.
- F. Cost: Contractor shall be responsible for the fees and costs owed associated with Contractor's and it's subordinate parties use of Autodesk Build. Fees to Contractors are calculated as 0.1% of contract value. Contractor shall include this cost in the base bid. Contractor will be invoiced directly by Barton Malow Builders at project start-up and payment must be submitted by the Contractor prior to the start of work.
- G. Contractor's site Supervision must have an iPad onsite with wireless internet access to view project documents, complete required daily forms, and review/submit RFI's in Autodesk Build.
- H. Submittal Service: The selected service is:
 - 1. Autodesk Build
- I. Autodesk Build will be required for all Contractors to use for all document management on the project. This will include all RFI correspondence, submittal tracking, meeting minutes, contract information, and all other information deemed pertinent to this project.
- J. Training: Barton Malow Builders will host training sessions as needed that will be required for all Contractors and their appropriate staff and suppliers to attend via training link.
 - 1. Representatives of Architect, and Owner are scheduled and included in this training.
 - 2. All users are required to go through training via Skilljar. Users should take the courses curated for their role at academy.bartonmalow.com immediately after Contract Award.
- K. Project Closeout: Barton Malow Builders will determine when to terminate the service for the project and is responsible for obtaining archive copies of files for Owner.

3.02 MEETINGS

- A. Barton Malow Builders shall schedule, chair, and administer all periodic meetings throughout the progress of the work for the purpose of coordinating and expediting the Work. Such meetings shall be held at the Jobsite or Microsoft Teams, bringing together responsible representatives of active Contractors for the purpose of planning, assessing progress, and discussing problems of mutual concern. Each Contractor and its Subordinate Parties' representative attending the meetings shall be authorized to act on behalf of and make decisions/commitments for the entity each represents, the decisions made at the meetings and each Contractor who should be in attendance will be held responsible for information and directions given at the meeting.
- B. Barton Malow Builders will prepare and distribute the minutes of all meetings if Barton Malow Builders determines minutes are required. If the attendees do not object in writing to any part of the meetings within 2 days of distribution of the minutes, the minutes shall be accepted as written.
- C. Meeting Attendance - Contractors are expected to attend any and all meetings as noted in this section unless an absence is excused in advance. Failure to attend meetings will result in a reduction of supervision costs via deduct change order.
- D. The scope of meetings include but are not limited to:
 - 1. PRECONSTRUCTION MEETING (KICK-OFF)
 - a. A Preconstruction (kick-off) meeting will be conducted with representatives of all the Contractors within fifteen 15 days prior to the project start date at the jobsite or as designated by Barton Malow Builders .
 - b. The agenda may include:
 - 1) Discussion on major Contracts, suppliers, and schedule of values.
 - 2) Major and/or critical work sequencing regarding the project schedule.
 - 3) Project coordination and designation of personnel representing the parties to Contract and responsible personnel.

- 4) Procedures and processing of field instructions/decisions, submittals, substitutions, applications for payments, proposal requests, change orders and contract closeout procedures.
 - 5) Quality assurance/control issues
 - 6) Adequacy of distribution of contract documents.
 - 7) Procedure for maintaining record documents.
 - 8) Use of premises, office, work and storage areas, and other Barton Malow Builders requirements.
 - 9) Execution of Contract between Owner & Contractor
 - 10) Submission of executed bonds and insurance certificates.
 - 11) Construction facilities/temporary utilities
 - 12) Safety and Security procedures
 - 13) Submission of initial Submittal schedule.
 - 14) Other Administrative procedures
 - 15) Review of Owner expectations.
 - 16) On-site meeting requirements
2. PRE-INSTALLATION CONFERENCES
- a. Conduct a preinstallation conference at the project site before each construction activity/scope of work that requires coordination with other construction or required by the specifications.
 - b. Require attendance of entities directly affecting, or affected by, work of the section, including Construction Manager, Contractor, installers, manufacturers. Architect and Owner will be invited.
 - c. Review conditions of the installation, preparation and installation procedures, and coordination with related work. Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - 1) The Contract Documents
 - 2) Related requests for information (RFIs).
 - 3) Related Change Orders
 - 4) Purchases
 - 5) Deliveries
 - 6) Submittals.
 - 7) Review of mockups.
 - 8) Possible conflicts.
 - 9) Compatibility problems.
 - 10) Time Schedules.
 - 11) Weather limitations
 - 12) Manufacturers' written recommendations.
 - 13) Warranty requirements
 - 14) Acceptability of substrates
 - 15) Temporary facilities and controls.
 - 16) Space and access limitations.
 - 17) Regulations of authorities having jurisdiction.
 - 18) Testing and inspection requirements.
 - 19) Installation procedures.
 - 20) Coordination with other work.
 - 21) Required performance results.
 - 22) Protection of adjacent work.
 - 23) Protection of construction and personnel.
 - d. Require attendance of entities directly affecting, or affected by, work of the section, including Construction Manager, Contractor, installers, manufacturers. Architect and Owner will be invited.
 - e. Review conditions of the installation, preparation and installation procedures, and coordination with related work. Review progress of other construction activities

and preparations for the particular activity under consideration, including requirements for the following:

- 1) The Contract Documents
- 2) Related requests for information (RFIs).
- 3) Related Change Orders
- 4) Purchases
- 5) Deliveries
- 6) Submittals.
- 7) Review of mockups.
- 8) Possible conflicts.
- 9) Compatibility problems.
- 10) Time Schedules.
- 11) Weather limitations
- 12) Manufacturers' written recommendations.
- 13) Warranty requirements
- 14) Acceptability of substrates
- 15) Temporary facilities and controls.
- 16) Space and access limitations.
- 17) Regulations of authorities having jurisdiction.
- 18) Testing and inspection requirements.
- 19) Installation procedures.
- 20) Coordination with other work.
- 21) Required performance results.
- 22) Protection of adjacent work.
- 23) Protection of construction and personnel.

3. SITE MOBILIZATION MEETING

- a. Barton Malow Builders Project Superintendent will schedule meeting at the Project site prior to Barton Malow Builders Construction start date.
- b. Attendance Required:
 - 1) Barton Malow Builders
 - 2) Contractor
 - 3) Owner
 - 4) Architect/Engineer
 - 5) Barton Malow Builders' Superintendent
 - 6) Major subcontractors
- c. Agenda:
 - 1) Use of premises by Contractor, Owner and Barton Malow Builders.
 - 2) Project cleanup requirements.
 - 3) Owner's requirements.
 - 4) Construction facilities and controls provided by Owner.
 - 5) Temporary utilities provided by Contractor and Owner.
 - 6) Survey and building layout.
 - 7) Security and housekeeping procedures.
 - 8) Schedules.
 - 9) Application for payment procedures.
 - 10) Procedures for testing.
 - 11) Procedures for maintaining record documents.
 - 12) Requirements for start-up of equipment.
 - 13) Inspection and acceptance of equipment put into service during construction period.
- d. Record minutes and distribute copies within 3 days after meeting to participants, with one electronic copy(s) to Architect/Engineer, Owner, participants, and those affected by decisions made.

4. PROGRESS MEETINGS

- a. Onsite project coordination/progress meetings will be held on a weekly basis or as appropriate throughout the life of the Project. Barton Malow Builders will set the agenda for the Project progress meeting.
 - b. Barton Malow Builders will set the agenda and preside at the meetings with copies for participants, preside at meetings.
 - c. At a minimum, each Contractor shall be prepared to discuss the following:
 - 1) Review minutes of previous meetings.
 - 2) Actual vs. scheduled progress for the prior two-week period.
 - 3) Planned construction activities for the next four weeks.
 - 4) Problems with, revisions to, and corrective measures and procedures to regain the construction schedule, if required.
 - 5) Review of off-site fabrication and delivery schedules.
 - 6) Document clarification requests.
 - 7) Coordination items with other Contractors.
 - 8) Changes in the work affecting cost and/or time.
 - 9) Review of submittals schedule and status of submittals.
 - 10) Field observations, problems, conflicts, and decisions.
 - 11) LEED requirements and status.
 - 12) Quality control issues and non-conformance resolutions.
 - 13) Safety issues.
 - 14) Review of RFIs log and status of responses.
 - 15) Maintenance of progress schedule.
 - 16) MOT and road closure planning.
5. FOREMAN MEETINGS
- a. Mandatory Foreman's meetings will be held on a daily basis at the start of the work day, time 7 am by Barton Malow Builders. At a minimum, each Contractors' foreman shall be in attendance and be prepared to discuss the following:
 - 1) Daily coordination of work
 - 2) Identification of field issues
 - 3) Safety issues
6. OTHER MEETINGS
- a. Quality Assurance Meetings
 - b. Barton Malow Builders may conduct quality assurance/quality control meetings as necessary during the progress of the Work. Barton Malow Builders will set the agenda for the quality meeting. At a minimum, Contractor shall be prepared to discuss the following:
 - 1) Testing and inspection procedures
 - 2) Tolerance requirements
 - 3) Quality samples
 - 4) Reporting of non-conformance items
 - 5) Corrective actions assigned
 - 6) Disposal of non-conforming items
 - 7) Job procedures
 - c. Safety Meetings
 - 1) Refer to Section 017120 On-Site Project Safety for more information.
 - d. Inspection Tours
 - 1) Formal inspections/tours may be made of the Project progress by the Owner, Architect, local, state or federal officials, insurance representatives, or others as the occasion warrants and as scheduled by Barton Malow Builders. If requested by Barton Malow Builders, each Contractor shall be prepared to show and explain Work throughout the building to the inspecting parties, in addition to providing Work in compliance with these inspections.
 - e. Change Request Meetings
 - 1) Upon issuance of a major Proposal Request (a.k.a. bulletin), Barton Malow Builders may conduct a meeting as necessary with all significant Contractors

to review its contents and determine cost, delivery, and schedule impacts. At a minimum, Contractor shall be prepared to discuss the following:

- (a) Impact of out-of-sequence work
- (b) Identification of pertinent long-lead material and system impact
- (c) Alternative recommendations
- (d) Evaluation of approximate cost magnitude
- (e) Evaluation of impact on completion
- (f) Alternate sequencing
- (g) Due date for Contractor pricing and scheduling impact

3.03 CONSTRUCTION PROGRESS SCHEDULE - SEE SECTION 013216

- A. Within 10 days after Notice to Proceed (NTP) and review of preliminary schedule, submit draft of proposed complete schedule for review.
 1. Include written certification that major contractors have reviewed and accepted proposed schedule.

3.04 DAILY CONSTRUCTION REPORTS

- A. Each Contractor will prepare and distribute a daily report to Barton Malow Builders using the specified system below. Contractors shall provide a comprehensive report on a daily basis to include pre-task planning and maintain it during the entire duration of the project and for any day not worked between mobilization and demobilization. Training can be provided as necessary. Each Contractor is responsible for specifically alerting to items which could result in claims or delays.
- B. Include only factual information. Do not include personal remarks or opinions regarding operations and/or personnel.
- C. Daily reports are to be transmitted electronically to Barton Malow Builders by the end of the day for that day's work. The daily report shall include the following as a minimum:
 1. Submit using Flypaper to Autodesk Build.
 2. Prepare a daily construction report recording the following information concerning events at Project site and project progress:
 - a. Date.
 - b. High and low temperatures, and general weather conditions.
 - c. List of Contractors at Project site.
 - d. List of separate subcontractors at Project site.
 - e. List of visitors at Project site.
 - f. Approximate count of personnel at Project site.
 - 1) Include a breakdown for supervisors, laborers, journeymen, equipment operators, and helpers.
 - g. Detailed description of work being performed with specific location, floor, and all other pertinent information.
 - h. Major equipment at Project site.
 - i. Material deliveries.
 - j. Safety, environmental, or industrial relations incidents. Including any accidents and injuries.
 - k. Meetings and significant decisions.
 - l. Unusual events (submit a separate special report).
 - m. Stoppages, delays, shortages, and losses. Include comparison between scheduled work activities (in Barton Malow Builders' most recently updated and published schedule) and actual activities. Explain differences, if any. Note days or periods when no work was in progress and explain the reasons why.
 - n. Situations or circumstances which could delay work or give causes for delays or claims for extension or added costs.
 - o. Directives and requests of Authority(s) Having Jurisdiction (AHJ).
 - p. Testing and/or inspections performed.
 - q. Signature of Contractor's authorized representative.

- D. Daily reports shall be completed at the end of each day or by 6 am the next morning. Contractors failure to complete daily reports as required will result in payments not being processed or released.

3.05 COORDINATION DRAWINGS

- A. Provide information required by project manual, work scopes and specifications for preparation of coordination drawings.
- B. Review drawings prior to submission to Architect/Engineer and Barton Malow Builders.

3.06 REQUESTS FOR INFORMATION (RFIS)

- A. Definition: A request seeking one of the following:
 - 1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in Contract Documents.
 - 2. A resolution to an issue which has arisen due to field conditions and affects design intent.
- B. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit a RFI via Autodesk Build in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
 - 1. Prepare a separate RFI for each specific item.
 - a. Review, coordinate, and comment on requests originating with Contractors, subcontractors and/or materials suppliers.
 - b. Do not forward requests which solely require internal coordination between Contractors.
 - 2. Prepare in a format and with content acceptable to Barton Malow Builders .
 - a. Use Autodesk Build for all RFI submissions.
 - 3. Attach any and all additional information required for clarification in the RFI via PDF attachment in Autodesk Build .
 - 4. Ensure RFI is linked to the appropriate sheet(s).
- C. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included. If an RFI is directly impacting work in the field or will do so before the RFI due date, mark as top priority in Autodesk Build and email Barton Malow Builders team to inform them of the urgency of the item.
 - 1. Unacceptable Uses for RFIs: Do not use RFIs to request the following::
 - a. Approval of submittals (use procedures specified elsewhere in this section).
 - b. Approval of substitutions (see Section - 016000 - Product Requirements)
 - c. Changes that entail change in Contract Time and Contract Sum (comply with provisions of the Conditions of the Contract).
 - d. Different methods of performing work than those indicated in the Contract Drawings and Specifications (comply with provisions of the Conditions of the Contract).
 - 2. Improper RFIs: Requests not prepared in compliance with requirements of this section, and/or missing key information required to render an actionable response. They will be returned rejected without a response.
 - 3. Frivolous RFIs: Requests regarding information that is clearly indicated on, or reasonably inferable from, Contract Documents, with no additional input required to clarify the question. They will be returned rejected without a response.
 - a. Barton Malow Builders or the Owner reserves the right to back charge the Contractor for the costs due to processing excessive frivolous RFIs.
- D. Content: Include identifiers necessary for tracking the status of each RFI, and information necessary to provide an actionable response.

1. Fully complete the RFI form in Autodesk Build including uploading any supporting documentation and photos.
 2. Reference to particular Contract Document(s) requiring additional information/interpretation. Identify pertinent drawing and detail number and/or specification section number, title, and paragraph(s).
 3. Annotations: Field dimensions and/or description of conditions which have engendered the request.
 4. Contractor's suggested resolution: A written and/or a graphic solution, to scale, is required in cases where clarification of coordination issues is involved, for example; routing, clearances, and/or specific locations of work shown diagrammatically in Contract Documents. If applicable, state the likely impact of the suggested resolution on Contract Time or the Contract Sum.
- E. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.
- F. Review Time: Architect/Engineer and/or Troy School District will respond and return RFIs to Barton Malow Builders within 14 calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 12:00 noon will be considered as having been received on the following regular working day.
1. Response period may be shortened or lengthened for specific items, subject to mutual agreement, and recorded in a timely manner in progress meeting minutes.
- G. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Barton Malow Builders .
1. Response may include a request for additional information, in which case the Contractor is responsible to promptly respond to the request. If an additional RFI is written after the original RFI is closed, it will be identified with a .1 suffix to the original number.
 2. Do not extend applicability of a response to specific item to encompass other similar conditions, unless specifically so noted in the response.
 3. Upon receipt of a response, promptly review and distribute it to all affected parties.
 4. Notify Barton Malow Builders within three calendar days if an additional or corrected response is required by submitting an amended version of the original RFI, identified as specified above.
- H. Any RFI that is directly impacting work in the field or will do so before the RFI due date, must be marked as high priority in Autodesk Build and an email must be sent to the Barton Malow Builders team to inform and alert us to escalate the item to the design team. In addition, when the response to an RFI results in a price change (deduct or credit), the Contractor is required to notify the Barton Malow Builders team within 3 days of the return of the RFI.

3.07 SUBMITTALS

- A. SUBMITTAL SCOPE
1. Where requirements of this section vary from the requirements of the General Conditions, the most stringent requirement shall take precedence.
 2. Following the issuance of the contract or Notice to Proceed (NTP), Construction Manager will prepare and provide a submittal register/schedule including close-out documentation for the Contractor's use in preparing submittals required for the Project.
 3. The Contractor shall complete the submittal schedule/register (provided by Construction Manager) showing the dates for submission, lead times required, and their expected delivery dates to maintain and follow the construction schedule, within 14 days of receipt.
 4. When the Contractor completes the above-mentioned submittal schedule, the Contractor must clearly identify any items related to the scope of work that have a lead time of greater than 4 weeks. These items will be tracked on a material schedule for scheduling and quality control purposes.

5. Dates for submission noted by the Contractor must assume re-submittals will be required.
6. Account for time required for preparation, review, manufacturing, fabrication, and delivery when establishing submittal delivery and review deadline dates. For assemblies, equipment, systems comprised of multiple components and/or requiring detailed coordination with other work, allow for additional time to make corrections or revisions to initial submittals, and time for their review.
7. Deliver each submittal by date noted in submittal schedule, unless another date has been agreed to by all affected parties, and is of the benefit to the project.
 - a. Upload submittals in electronic form via Autodesk Build and submit to Barton Malow Builders.
 - b. Deliver submittals such as samples and drawdowns to Barton Malow Builders at 1140 Rankin Dr, Troy, MI 48083 .
8. Barton Malow Builders will not be held responsible for delays to the overall Project or other Contractors due to receiving submittals after the date indicated in the Barton Malow Builders bid category work scopes, submittal log, and per sections below.
9. Submittals shall be packaged based on each technical specification section. Include all submittals for review and submittals for information, when submitting a package. Submittals containing information about more than one specification section will be returned for re-submittal.
10. Contractor is responsible to submit all submittals as required per the Contract Documents and Specifications, as well as any additional items that are standard to the Contractor's respective scope(s) of work, whether or not listed in the submittal log/register.
11. Any submittal deviation from the contract documents must be clouded out and noted on the submittal by the Contractor for Barton Malow Builders and Architect/Engineer review.
12. Contractor is responsible for completing all submittals (less final warranties, training, and attic stock) within 14 days of contract award, this includes sample warranties if required by the specifications.
13. After review, Contractor shall furnish approved copies of shop drawings, diagrams, templates, catalog cuts, technical data, etc. to other Contractors for the purposes of coordination of this work.
14. Coordination: Each Contractor shall coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
 - a. By providing the submittal, Contractor assures the product or system submitted is available and deliverable in accordance with the schedule requirements.
 - b. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.
 - c. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
 - d. Barton Malow Builders and Architect/Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
 - e. Coordinate each submittal as required with all trades and with all public agencies involved.
 - f. Secure all necessary approvals from public agencies and others; signify by stamp or other means that all required approvals have been obtained.

B. SUBMITTAL REQUIREMENTS

1. Each submittal shall show Contractor's review stamp signed or initialed, certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information are in accordance with the requirements of the work and Contract Documents.

2. Identify: Project, Barton Malow Builders, Contractor or supplier, pertinent drawing and detail number, and specification section number and article/paragraph, as appropriate, on each copy.
3. If a submittal register item is missing, notify Barton Malow Builders so it can be added to the system for your team to attach appropriate PDFs for submission.
4. In general, all submittals, except color, physical samples, or mockups, are to be created in a PDF document form and uploaded to their respective register number in Autodesk Build so it can be electronically reviewed by all parties necessary. Scanned copies of submittals will not be accepted.
5. All submittals will be reviewed electronically, and the Contractor will be notified in Autodesk Build when the review is complete. The status will be noted both on the PDF and in the Autodesk Build system assigned to the item.
6. Samples will be reviewed for aesthetic, color, or finish selection. Contractor to submit 1 sample more than the specification requirement.
7. Any and all Substitution Requests must be accompanied with a filled out Substitution Request form as found in the Architects specifications. This form must be submitted with all accompanying information via Autodesk Build following all other submittal requirements/processes.

C. TYPES OF SUBMITTALS

1. Shop Drawings
 - a. Provide Shop Drawings as complete submittals (no partial sets) on original drawings or information prepared solely by the fabricator or supplier. In no instance shall the Contract Drawings be reproduced for Shop Drawing Submittals.
2. Product Data
 - a. Modify product data sheets to delete information that is not applicable to the project and/or highlight specific items applicable to this project. Provide additional information if necessary to supplement standard information
 - b. Product data sheets that are submitted with extraneous information not deleted and/or modified will be returned without review to the Contractor for resubmittal.
3. Samples/Mock-ups
 - a. Provide physical samples to illustrate materials, equipment or workmanship, and to establish standards by which completed work may be judged as required by the technical section.
 - b. Provide office samples in sufficient size or as defined in the technical specifications and quantity to clearly illustrate full range of colors, textures, etc. available and the functional characteristics of the product material.
 - c. Contractor to submit 1 additional sample above what is required in the Contract Documents and Specifications.
 - d. Erect Field Samples or mock-ups as required by the technical sections and/or Barton Malow Builders, at the Project site in a location designated by Barton Malow Builders. Construct field samples to be complete, including Work of all trades required in finishing the Work. Provide Field Samples at the request of the Owner, Architect and/or Barton Malow Builders where construction materials and/or methods deviate from the requirements of the intent of the Contract Documents or conventional construction practice.
 - e. Reference Section 014000 - Quality Requirements for additional mock-up requirements.
4. Certifications
 - a. Certifications shall clearly identify the materials in reference and shall state that the material and the intended installation methods, where applicable, are in compliance with the Contract Documents for this project. Attach manufacturer's affidavits where applicable.
5. Closeout Submittals
 - a. Refer to Section 017800 - Closeout Submittals for close-out information and requirements including the standard Contractor's Guarantee Form that must be

signed, without modification, in order to receive final payment. A copy of this form is either found in [] or is available upon request.

D. SUBMITTAL PROCESS AND RESPONSIBILITIES

1. Contractor's Responsibilities
 - a. After Barton Malow Builders', Architect's, and Owner's review, Contractor is responsible to distribute copies of the reviewed submittal to any supplier/fabricators, second or lower tier Subcontractors, or other Contractors that must coordinate with this work. Contractor must ensure that all of their respective field staff/foreman have the reviewed information.
 - b. Do not begin Work which requires submittals until return of submittals with Barton Malow Builders', Architect's, and Owner's stamp and initials indicating status of review being either Approved, or Approved as Noted.
 - c. Contractor's responsibility for errors and omissions in submittals is not relieved by Barton Malow Builders', Architect's, and Owner's review of submittals.
 - d. Contractor's responsibility for deviations in submittals from requirements of Contract Documents is not relieved by Barton Malow Builders', Architect's, and Owner's review of submittals unless Barton Malow Builders', Architect's, and Owner's give written acceptance of specific deviations. Contractor must note and cloud any deviations from the contract documents on their submittals prior to submission.
2. Barton Malow Builders' Responsibilities
 - a. Barton Malow Builders' review is for general administrative purposes only and neither this review, nor any subsequent approval by Barton Malow Builders of a submittal, shall relieve Contractor from its obligations to comply fully with the Contract Documents.
 - b. Barton Malow Builders will make changes or notations directly on the submittals, identify such review with its review stamp, sign, and forward acceptable submittals to the Architect and/or Owner.
 - c. After the Architect and/or Owner's review, Barton Malow Builders will forward submittals to the Contractor.
3. Architect's Responsibilities
 - a. Architect will review submittals within 14 days after receipt, checking only for conformance with the design compliance of the Project, and compliance with information given in the Contract Documents. If the submission is large and/or requires detailed or lengthy review by the Architect, additional time may be required.
 - b. Architect will return to Barton Malow Builders without review any submittals not bearing the Contractor's or Barton Malow Builders' review stamp or not showing that it has been reviewed by the Contractor and Barton Malow Builders.
 - c. Architect will make changes or notations directly on the submittal, identify such review with its review stamp, obtain and record Architect file copy and return the submittal to Barton Malow Builders.
4. Re-Submission Requirements
 - a. For Shop Drawings: Review returned Barton Malow Builders and/or Architect drawings and resubmit as specified. All changes made must be identified through bubbling or other approved methods.
 - b. For Product Data and Samples Resubmit new data and samples as required.

3.08 SUBSTITUTION REQUESTS

- A. Any and all Substitution Requests must be accompanied with a filled out Substitution Request form as found in the Architects specifications. This form must be submitted with all supporting documentation via Autodesk Build following all other submittal requirements/processes.
- B. Any product for which a substitution request is submitted must meet all specification requirements.

- C. Substitution requests must be submitted with enough time to allow for complete review by the Architect/Owner and not delay Project Schedule.
- D. Each Substitution request should be accompanied by the following supporting documentation:
 - 1. Product identification, including the manufacturer's name and address
 - 2. Manufacturer's literature; identifying:
 - a. Product description and technical information.
 - b. Reference standards.
 - c. Performance and test data
 - d. Installation instruction, operating procedures, and other like information.
 - 3. Samples, as applicable.
 - 4. Names and addresses of similar projects on which product has been used, and date of each installation.
 - 5. Itemized comparison of the proposed substitution with the product specified, listing all significant variations.
 - 6. Data relating to changes in delivery or construction schedule.
 - 7. A list of all effects of the proposed substitution on separate contracts.
 - 8. Accurate cost data comparing the proposed substitution with the product specified.
 - a. Amount of any net change to Contract Sum.
 - 9. Designation of availability of maintenance services and sources of replacement materials.
 - 10. Substitute products shall not be ordered or installed without written acceptance via approval of the Substitution Request Form.
- E. In making formal request for substitution the Contractor represents that:
 - 1. It has investigated the proposed product and has determined it is equivalent to or superior in all respects to the product specified.
 - 2. It will provide same warranties or bonds for the proposed substitution as required for the product specified.
 - 3. It will coordinate installation of the accepted substitution into the Work, and will make such changes as may be required for the Work to be complete in all respects.
 - 4. It waives all claims for additional costs caused by or arising from the substitution which may subsequently become apparent.
 - 5. Cost data is complete and includes related costs under its Agreement.
 - 6. Any modifications necessary as a result of the use of an approved substitute shall be paid by the Contractor proposing the substitution.
 - 7. Any additional engineering costs required to be performed by the Architect to approve, implement, or coordinate the substitution above reasonable review services, shall be paid by the Contractor proposing the substitution.
 - 8. Under no circumstances will the Architect be required to prove that a product proposed for substitution is or is not equal to the quality of the product specified.
- F. Substitution requests that are not approved will be returned to the party submitting the request with an explanation for the rejection.
- G. Substitutions will be considered only when the required form is completed and included with the submittal containing all required backup data. This form can be found in the Architects specifications.

3.09 SUBMITTALS FOR PROJECT CLOSEOUT

- A. Submit all closeout submittals as required via the Contract Documents and Specifications as well as any additional items that are standard to the Contractor's respective scope(s) of work.
- B. Contractor is responsible for recording and transmitting any trainings and/or demonstrations required in the Contract Documents and Specifications.
- C. Submit Final Contractor signed off Correction Punch List for Substantial Completion.

- D. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 017800 - Closeout Submittals:
 - 1. Project record documents.
 - 2. Operation and maintenance data.
 - 3. Warranties.
 - 4. Demonstration and Training.
 - 5. Attic Stock.
 - 6. Other types as indicated.
- E. All additional information can be found in Section 017800 - Closeout Submittals

3.10 NUMBER OF COPIES OF SUBMITTALS

- A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.
- B. Extra Copies at Project Closeout: See Section 017800.
- C. Samples: Submit the number specified in individual specification sections; two of which will be retained by Architect/Engineer and Owner.
 - 1. After review, produce duplicates.
 - 2. Retained samples will not be returned to Contractor unless specifically so stated.

3.11 SUBMITTAL REVIEW

- A. Submittals: Architect/Engineer will review each submittal, and approve, or take other appropriate action.
- B. Substitution Requests: Architect/Engineer will acknowledge receipt and review. See below for actions to be taken.
- C. Architect/Engineer's actions will be reflected by marking each returned submittal using a virtual stamp on electronic submittals.
 - 1. Notations may be made directly on submitted items and/or listed on appended Submittal Review cover sheet.
- D. Architect/Engineer's and consultants' actions on items submitted for review:
 - 1. "Approved", or language with same legal meaning.
 - 2. "Approved as Noted, Resubmission not required", or language with same legal meaning.
 - a. At Barton Malow Builders' option, submit corrected item, with review notations acknowledged and incorporated.
 - 3. "Approved as Noted, Resubmit for Record", or language with same legal meaning.
 - a. Resubmit corrected item, with review notations acknowledged and incorporated. Resubmit separately, or as part of project record documents.
 - 4. "Revise and Resubmit".
 - a. Resubmit revised item, with review notations acknowledged and incorporated.
 - 5. "Rejected".
 - a. Submit item complying with requirements of Contract Documents.
- E. Architect/Engineer's and consultants' actions on items submitted for information:
 - 1. Items for which no action was taken:
 - a. "Received" - to notify the Contractor that the submittal has been received for record only.
 - 2. Items for which action was taken:
 - a. "Reviewed" - no further action is required from Contractor.

END OF SECTION

**SECTION 013114
COORDINATION DRAWINGS (NOT 3D)**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Services of a coordinator for facility services construction.
- B. Coordination documents.

1.02 RELATED REQUIREMENTS

- A. Section 013000 - Administrative Requirements: Additional requirements for coordination.

1.03 MECHANICAL AND ELECTRICAL COORDINATOR

- A. Employ and pay for services of a person, technically qualified and administratively experienced in field coordination of the type of work required to be coordinated, for the duration of the Work.

1.04 SUBMITTALS

- A. All Contractors with coordination work listed below shall submit coordination drawings to the Mechanical Contractor in Revit file format.
- B. Mechanical Contractor shall incorporate coordination required sections below from Revit files provided and coordinated with other Trades into one Revit file coordination drawing and submit to the Barton Malow Builders for approval.
- C. Submit coordination drawings and schedules prior to submitting shop drawings, product data, and samples.
- D. Submit shop drawings after approved coordination drawings are sent back from the Architect and Engineer of record.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 COORDINATION REQUIRED

- A. Coordinate the work listed below:
 - 1. Architectural: Division 3-13.
- B. Fire Suppression: Division 21.
 - 1. Plumbing: Division 22.
 - 2. Heating, Ventilating, and Air Conditioning: Division 23.
 - 3. Electrical: Division 26.
 - 4. The following work is to be coordinated:
 - a. Above Ceiling Equipment
 - a. Above Ceiling Structural Supports
 - a. Hydronic Piping & Valves
 - a. Domestic Water Piping & Valves
 - a. Storm, Sanitary, & Vent Piping
 - a. Compressed Air Piping & Valves
 - a. Med Gas Piping & Valves
 - a. Fire Sprinkler Piping & Valves
 - a. Sprinkler Heads
 - a. Ductwork & Dampers
 - a. Air Terminal Devices
 - a. Diffusers
 - a. Light Fixtures
 - a. Conduit & Junction Boxes
 - a. Access Panels
 - a. []
 - a. []

- C. Conduct meetings among separate Contractors and others concerned, to establish and maintain coordination and schedules, and to resolve coordination matters in dispute.

3.02 COORDINATION DOCUMENTS

- A. Prepare coordination drawings to organize installation of products for efficient use of available space, proper code access spacing for proper sequence of installation, and to identify potential conflicts.
- B. Maintain documents for the duration of the work, recording changes due to site instructions, modifications or adjustments.
- C. After Architect and Engineer of record review of original and revised documents, reproduce and distribute copies to concerned parties.

3.03 COORDINATION OF SUBMITTALS

- A. Check field dimensions and required clearances and relationship to available space and anchors.
- B. When changes in the work are made, review their effect on other work and note on the coordination drawing.
- C. Conflicts that cannot be resolved are to be clouded out for Architect/Engineer review.

3.04 COORDINATION OF SUBSTITUTIONS AND MODIFICATIONS

- A. Verify compliance with Contract Documents and for compatibility with work of other sections.
- B. Submit with recommendation for action.

3.05 OBSERVATION OF WORK

- A. Observe work for compliance with Contract Documents.

END OF SECTION

**SECTION 013216
SCHEDULE AND PHASING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Preliminary schedule.
- B. Construction progress schedule, bar chart type.

1.02 RELATED SECTIONS

- A. Contract Document
- B. Section 011000 - Use of Premises: Work sequence.

1.03 GENERAL REQUIREMENTS

- A. Refer to the Contract Documents for requirements related to Contract Time, Commencement of Work, Milestones, Substantial Completion and Final Completion of the Project Schedule.
- B. The Work shall proceed at such rate as will ensure meeting the specified Milestone Dates & Durations and dates for Substantial Completion and Final Completion. By execution of the Contract, the Contractor represents he/she has analyzed the Work, the materials and methods involved, the systems of the building, availability of qualified mechanics and unskilled labor, restrictions of the site, constraints imposed, his own workload and capacity to perform the work and agrees that the specified durations and milestone dates are reasonable considering the existing conditions prevailing in the locality of the work, including weather conditions, and other factors, with reasonable allowance for variations from average or ideal conditions.
- C. The Preliminary Schedule Date for completion of all contract start-up activities shall be established by Barton Malow Builders.
- D. A Preliminary Project Schedule is provided at the end of this section and is part of the Contract Documents. A Schedule will be prepared by Barton Malow Builders based on the Contractor's input including all product and equipment lead times after Contract Award. Barton Malow Builders will compile all Contractors' input/schedules and develop a schedule. Once the individual Contractors' input/schedules are agreed upon by Barton Malow Builders, this schedule will become the project plan for construction.
- E. Barton Malow Builders reserves the right to revise the schedule as deemed necessary.
- F. Reasonable changes in sequencing, durations, and phasing are to be expected with each schedule update. These changes will be made by Contractor at no additional cost.
- G. Contractors shall bring to the attention of Barton Malow Builders any special requirements needed within 7 days.
- H. While rearrangement of activity sequences may occur after contract award, all Preliminary Schedule Bid Durations shall remain in effect and all bidders shall accept the milestone dates established in the Schedule.
- I. Each Contractor agrees to commence work in the field within 3 calendar days after being notified to do so by Barton Malow Builders . The Contractor shall timely and diligently perform and fully complete all of the work to the satisfaction of Barton Malow Builders, Architect/Engineer and Owner. The work shall begin at such points as Barton Malow Builders may designate and shall be carried to completion with the utmost speed.
- J. If a Contractor delays progress for any reason other than those allowed by the General Conditions, said Contractor will take all necessary steps to expedite their contract work to maintain activity durations and milestone dates as depicted in the Schedule at no expense or additional cost to Barton Malow Builders and Owner.
- K. If, in the opinion of Barton Malow Builders, a Contractor is behind schedule and is so notified by Barton Malow Builders in writing, said Contractor will be required to furnish to Barton Malow Builders a short interval schedule of their work showing location, number of

men and crew required to get back on the agreed-upon schedule. If the Contractor fails to maintain and meet the short interval schedule submitted to Barton Malow Builders, Barton Malow Builders reserves the right to take whatever steps necessary to put the work back on schedule at the Contractor's expense. The Contractor shall employ such means as overtime work, multiple work shifts, and additional equipment, without additional compensation and shall continue to do so until the progress of the work is, in the opinion of Barton Malow Builders, in conformance with the Schedule.

- L. Each Contractor agrees that it shall have no claim against the Owner, Architect, or Barton Malow Builders for an increase neither in the contract price nor for a payment or allowance of any kind for damage, loss, or expense resulting from delays regardless of whether the delay is the basis for an extension of time. Each Contractor shall have no claim for damage, loss, or expense resulting from reasonable interruptions to, or necessary suspension of, their work to enable other Contractors to perform their work.
- M. Adverse/Severe Weather
 - 1. Activity and sequence adjustments may be made when there is adverse weather. The weather experienced at the project site during the contract period must be found to be unusually severe, and for a period greater than typically anticipated for the project location during any given month before a schedule adjustment is made.
 - 2. The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the Contractor.
 - 3. Upon issue Letter of Intent (LOI) or Notice to Proceed (NTP) and continuing throughout the Contract, the Contractor will record on their daily report, the occurrence of the adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for fifty percent (50%) or more of the Contractor's scheduled workday.
 - 4. Weather days lost during the week must be made up the following weekend with required notice to Barton Malow Builders.
- N. Bidders are aware that by signing the Contract they are certifying that they have reviewed and accepted the initial durations in the preliminary project schedule at the end of this section. Contractor shall note that they shall allow for a possible start or end date within 90 days of those dates shown in the schedule.
- O. Contractors are required to abide by all iterations of the Schedule, Phasing and Logistics plans, and as directed by Barton Malow Builders.

1.04 SUBMITTALS

- A. The technical submittal requirements are identified in the various Specification Sections assigned to each bid category, and they shall be submitted in accordance with the Submittal Register specified in Section 013000 - Administrative Requirements.
- B. Within 14 days after date Letter of Intent (LOI) or Notice to Proceed (NTP), submit proposed schedule for respective scope of work in form and substance satisfactory to Barton Malow Builders of all activities contained in the Contractor's scope of Work, including activity descriptions and durations in working days, for shop drawings, fabrication, delivery, and installation of products, materials, and equipment. This schedule shall identify precedent relationships between Contractor's activities and those of other Contractors, necessary manpower loadings, and precedent activities for other Contractors. The activities on the schedule must be at a level of detail approved by Barton Malow Builders and should agree with the terminology and building sequencing established by Barton Malow Builders.
- C. If the proposed schedule requires revision after review, submit a revised schedule within 10 days after review.
- D. Submit in PDF format or in requested format by Barton Malow Builders.
- E. Administrative submittals shall be submitted in accordance with the following durations unless otherwise noted in other sections of this Project Manual:
 - 1. Signed contract agreement: 7 days after receipt

2. Performance and payment bonds: 7 days after Receipt of Contract.
3. Partially executed Waiver of Liens: 3 days after Receipt of Contractor payment .
4. Material handling plan: 7 days after Receipt of Contract.
5. Permits/licenses: Prior to start of construction.
6. Certificates of insurance: 7 days after Receipt of Contract.
7. Contractor safety program: Prior to start of construction.
8. Contractor's initial construction schedule and completed work item listing: 10 days after Letter of Intent (LOI) or Notice to Proceed (NTP).
9. List of Subcontractors, suppliers and fabricators: 3 days after Post-bid review.
10. List of Contractor's staff assignments and phone number: 3 days after Post-bid review.
11. Schedule of values: 7 days after Post-bid review.
12. Initial product list schedule: 7 days after Post-bid review.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 BID PACKAGE PRE-BID CONSTRUCTION SCHEDULE

- A. A Preliminary project schedule indicating activity durations is included at the end of this section to communicate how activities are sequenced, to established durations for activities, and to provide the general time frame for the work to commence for each bid category.
- B. Each Contractor is responsible for construction sequencing and means and methods for their bid category. Therefore, Contractor may propose sequencing which differs from the Preliminary Schedule providing that achieves the Milestone Dates listed.
- C. Note that the Schedule is preliminary and that the project start and/or substantial completion date may be moved at the direction of Barton Malow Builders and/or the Owner.
- D. Provide separate schedule of submittal dates for shop drawings, product data, and samples, owner-furnished products, products identified under Allowances, and dates reviewed submittals will be required from Architect/Engineer. Indicate decision dates for selection of finishes.

3.02 CRITICAL PATH METHOD SCHEDULE

- A. This Project's schedule shall be monitored using the Critical Path Method (CPM). The purpose is to assist the Contractor in completing the Work on time and as a means for Barton Malow Builders to monitor progress of the Contractors.
- B. The Contractor shall meet with Barton Malow Builders after award to review the schedules attached to this Specification Section. Following the review, the Contractor shall meet with each subcontractor and supplier to prepare detailed plans for performing the Work.
- C. Following these meetings and within 14 days after Letter of Intent (LOI) or Notice to Proceed (NTP), the Contractor shall prepare and submit the following material for Barton Malow Builders' approval:
 1. A bar chart of all activities included in the Contractor's Scope of Work. This bar chart is to indicate durations for all activities in working days (as opposed to calendar days). Activities must have a single source of responsibility and must depict a single geographical area (e.g. floor or areas within a floor). Third-party dependent activities, such as inspections or owner furnished equipment, shall be identified by Contractor. The activities on the bar chart must be at a level of detail approved by Barton Malow Builders and agree with the terminology and building zoning established by Barton Malow Builders.
 2. If specifically requested by Barton Malow Builders, the bar chart shall be cost and manpower loaded.
 3. Precedent relationships between the Contractor's activities and those of other Contractors based on a thorough review of the Contract Drawings details showing interface between contracts shall be identified.
 4. Graphic diagrams indicating the proposed direction of work whenever applicable or if requested by Barton Malow Builders.

5. Planned crew sizes, equipment, production rates and similar data used to arrive at adequate durations and sequences.
 6. The Contractor's bar chart shall include activity descriptions and durations for shop drawings preparation and review, fabrication, delivery and installation of products, materials and equipment. Activities shall depict the Contractor's planned work, and not as-built.
 7. If the Contractor cannot provide a complete bar chart of all of its activities within 14 days after issuance of Letter of Intent (LOI) or Notice to Proceed (NTP), the Contractor may, with Barton Malow Builders' written approval, provide a work plan for the first 60 days after Letter of Intent (LOI) or Notice to Proceed (NTP). The Contractor's final bar chart shall be complete and submitted to Barton Malow Builders prior to the 10th day after Receipt of Contract.
 8. The Contractor is to provide a list with corresponding lead times of all materials with longer than a 4 week lead time within 10 days after issuance of Letter of Intent (LOI) or Notice to Proceed (NTP).
- D. The Contractor's agreed upon bar chart and schedule information will be incorporated into a Schedule prepared by Barton Malow Builders. The Contractor shall be required to send both field and office representatives knowledgeable of the items, to the Schedule Coordination Meetings conducted by Barton Malow Builders with the various Contractors. The purpose of these meetings is to coordinate the various Contractors schedules.
- E. After the Coordination Meeting, Barton Malow Builders will prepare and issue a Schedule for review and comment by the Contractors. Contractors shall submit comments within 7 days after receipt of Barton Malow Builders' Schedule. Review of Barton Malow Builders' schedule to identify missing activities or relationships with other Contractors relevant to the scope of the Contractor's work is the responsibility of the Contractor. As such, the Contractor will not be granted time extensions to complete activities not initially included in the Contractor's bar chart and the subsequent Barton Malow Builders' Schedule.
- F. Upon receipt of Contractor's review comments, or after the 14 day review period has expired, whichever occurs first, Barton Malow Builders will prepare and issue the Schedule. The schedule may be issued as a network or bar chart and will include a print-out of scheduled activities and their associated start and finish dates. Barton Malow Builders will incorporate the Contractor's comments provided they do not affect milestone dates or dates of Substantial and Final Completion and provided they are consistent with the coordination requirements of other Contractors.
- G. Barton Malow Builders shall issue the Schedule for acceptance by each Contractor. This acceptance shall be provided in writing within 7 days of receipt of the Schedule. Failure to respond within the 7 day period shall be deemed as acceptance by the Contractor of the Schedule.
- H. Barton Malow Builders will utilize the Schedule to plan and coordinate all construction activities of the Contractors. All Contractors are to complete all work in accordance with the detailed Schedule issued by Barton Malow Builders.
- I. The float in the project schedule is intended to be utilized and consumed by the project as needed, and is not solely available for the exclusive use of any party.

3.03 UPDATES AND MODIFICATIONS TO THE CONSTRUCTION SCHEDULE

- A. Before the start of construction, all parties performing work will be required to attend and participate in a schedule meeting. Contractors are expected to come prepared to the meeting with a knowledge of the bid schedule and work activities required to complete the project. The meeting(s) will be several hours and all contractors performing work are expected to attend.
- B. Each Contractor will be required to submit a 6 week look-ahead schedule every Friday to Barton Malow Builders or at an alternate time determined by the CM. The look-ahead schedule should address all work activities occurring within the six week schedule window, including deliveries and releases of materials. The look-ahead schedule shall be manpower

loaded (i.e. the number of craft personnel working on each specific activity each day). The look-ahead schedules will be reviewed and discussed at the weekly Contractor meeting.

- C. If during the progress of the work, the Contractor determines he will not be able to complete his work in the time allotted, he must notify Barton Malow Builders within 3 days after publication of Barton Malow Builders' updated Project Schedule. Adjustments may be made to accommodate the Contractor if written notification is given to Barton Malow Builders, the adjustment is within the stated milestone dates, and Barton Malow Builders approved the adjustment after reviewing its impact on other Contractor. Otherwise, Barton Malow Builders' Schedule shall be deemed accepted by all parties and becomes a contractual requirement for the Contractor.
- D. Weekly progress meetings will be held at the job site. Field Supervisors from all Contractors are to attend all progress meetings. The Contractor shall prepare a short interval schedule, generally covering 6 week periods, to coordinate the detailed activities of Subcontractors, Suppliers, and delivery of equipment/materials. The short interval schedules shall be prepared in bar chart form and submitted 24 hours prior to the job progress meetings, or as required by Barton Malow Builders.

3.04 ADJUSTMENT OF CONTRACTOR'S EFFORT

- A. Whenever it becomes apparent that any activity duration, activity completion date, and/or milestone date may not be met, the responsible Contractor shall take the actions specified in the, Terms & Conditions, Standard General Conditions and Supplementary General Conditions.
- B. If the Contractor fails to take action, Barton Malow Builders may proceed in accordance with the Terms & Conditions, Standard General Conditions and Supplementary General Conditions.
- C. If Contractor is requesting a time extension to its original contract duration as a result of Owner or Architect/Engineer requested change or an impact caused by the actions of another Contractor or Barton Malow Builders, the Contractor must submit a time impact analysis of their schedule, which demonstrates how the critical path of the Contractor's schedule was impacted and the justification of the additional time requested.

3.05 DISTRIBUTION OF SCHEDULE

- A. Distribute copies of updated Barton Malow Builders schedules to subcontractors, suppliers, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

END OF SECTION

**SECTION 013553
SECURITY PROCEDURES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Security measures including entry control, personnel identification, and miscellaneous restrictions.

1.02 RELATED REQUIREMENTS

- A. Section 011000 - Use of Premises: use of premises and occupancy.
- B. Section 015000 - Temporary Facilities and Controls: Temporary power/ lighting and Temporary heat.

1.03 SECURITY PROGRAM

- A. The services of security guards will not be provided by Barton Malow Builders or Owner.
- B. Each Contractor, at its own cost and expense, may provide security guard, protective service or other means of site security as it deems necessary. Contractors are expected to protect Work , existing premises and Owner's operations from theft, vandalism, and unauthorized entry.
- C. Contractors shall advise Barton Malow Builders of any theft or damage which might delay the execution of the Work and furnish the Owner and Barton Malow Builders with a copy of any theft report filed with local, county or state agencies.
- D. Neither Barton Malow Builders nor the Owner assumes any responsibility for loss, theft or damage to the Contractor's materials or for damage to Work in place before the completion of the construction. In the instance of any such loss, theft or damage, the Contractor shall be responsible to renew, restore or remedy the Work, tools, equipment and construction in accordance with requirements of the Contract Documents without additional cost to Barton Malow Builders or Owner.
- E. Barton Malow Builders or Owner is not responsible for damage, liability, theft, casualty or other hazard to the automobiles or other vehicles, nor to injury, including death, to occupants of automobiles or other vehicles on the Owner's property.
- F. Barton Malow Builders or Owner may establish additional security policies and procedures. All Contractors will be required to cooperate with implementing these procedures.
- G. Site parked equipment, operable machinery and hazardous parts of the new construction subject to mischief and accidental operation shall be inaccessible, locked or otherwise made inoperable when left unattended.
- H. Initiate program at project mobilization.
- I. Maintain program throughout construction period, or as directed by Barton Malow Builders.

1.04 ENTRY CONTROL

- A. Restrict entrance of persons and vehicles into Project site and existing facilities.
- B. Allow entrance only to authorized persons with proper identification.
- C. Maintain log of workers and visitors via Barton Malow QR code and Contractor daily reports, make available to Owner on request.
- D. Barton Malow Builders shall control entrance of persons and vehicles related to Owner's operations.

1.05 PERSONNEL IDENTIFICATION

- A. Contractor will be required to sign out a Contractor Badge from Owner when working in an unoccupied and occupied building or any building off hours with Barton Malow Builders and Owner approval. Badges will be required for every onsite employee, worker, supplier, and visitor. The badges are to be worn at all times while on the project.

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- B. Badge to Include: Personal photograph, name, assigned number , expiration date and employer.
- C. Require return of badges at the end of each day to Barton Malow Builders and Owner.

1.06 RESTRICTIONS

- A. Owner does not allow cameras on site or photographs taken except by written approval of Owner.
- B. Contractor shall have a written Substance Abuse Policy. The use or possession of illegal drugs or the use of alcohol while performing Work on the Project are strictly prohibited and may lead to immediate removal from the Project.
- C. The construction site will be tobacco free, which includes but is not limited to smoking, chewing tobacco and e-cigarettes.
- D. Personal cell phones are not to be used on construction sites except to report an emergency or on approved break time. Use of business cell phones must not interfere with jobsite safety. The use of camera features on cell phones is strictly prohibited.
- E. Personal radios or music players with earphones are not permitted.
- F. Do no work on Sundays.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 014000
QUALITY REQUIREMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. Quality assurance.
- C. References and standards.
- D. Testing and inspection agencies and services.
- E. Contractor's construction-related professional design services.
- F. Contractor's design-related professional design services.
- G. Quality Control
- H. Mock-ups.
- I. Tolerances.
- J. Manufacturers' field services.
- K. Defect Assessment.

1.02 RELATED REQUIREMENTS

- A. Document 007200 - General Conditions: Inspections and approvals required by public authorities.
- B. Section 013000 - Administrative Requirements: Submittal procedures.
- C. Section 014216 - Definitions.
- D. Section 016000 - Product Requirements: Requirements for material and product quality.

1.03 REFERENCE STANDARDS

- A. ASTM C1021 - Standard Practice for Laboratories Engaged in Testing of Building Sealants 2008 (Reapproved 2019).
- B. ASTM C1077 - Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation 2017.
- C. ASTM C1093 - Standard Practice for Accreditation of Testing Agencies for Masonry 2019.
- D. ASTM D3740 - 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 2019.
- E. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection 2021.
- F. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing 2021.
- G. ASTM E699 - Standard Specification for Agencies Involved in Testing, Quality Assurance, and Evaluating of Manufactured Building Components 2016.
- H. IAS AC89 - Accreditation Criteria for Testing Laboratories 2020.

1.04 DEFINITIONS

- A. Contractor's Quality Control Plan: Contractor's management plan for executing the Contract for Construction.
- B. Contractor's Professional Design Services: Design of some aspect or portion of the project by party other than the design professional of record. Provide these services as part of the Contract for Construction.
 - 1. Design Services Types Required:
 - a. Construction-Related: Services Contractor needs to provide in order to carry out the Contractor's sole responsibilities for construction means, methods, techniques, sequences, and procedures.

- b. Design-Related: Design services explicitly required to be performed by another design professional due to highly-technical and/or specialized nature of a portion of the project. Services primarily involve engineering analysis, calculations, and design, and are not intended to alter the aesthetic aspects of the design.
- C. Design Data: Design-related, signed and sealed drawings, calculations, specifications, certifications, shop drawings and other submittals provided by Contractor, and prepared directly by, or under direct supervision of, appropriately licensed design professional.

1.05 CONTRACTOR'S CONSTRUCTION-RELATED PROFESSIONAL DESIGN SERVICES

- A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.
- B. Provide such engineering design services as may be necessary to plan and safely conduct certain construction operations, pertaining to, but not limited to the following:
 - 1. Temporary scaffolding.
 - 2. Temporary bracing.
 - 3. Temporary foundation underpinning.

1.06 CONTRACTOR'S DESIGN-RELATED PROFESSIONAL DESIGN SERVICES

- A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.
- B. Base design on performance and/or design criteria indicated in individual specification sections.
 - 1. Submit a Request for Information to Architect/Engineer if the criteria indicated are not sufficient to perform required design services.

1.07 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Designer's Qualification Statement: Submit for Architect/Engineer's knowledge or for Owner's information.
 - 1. Include information for each individual professional responsible for producing, or supervising production of, design-related professional services provided by Contractor.
 - a. Full name.
 - b. Professional licensure information.
 - c. Statement addressing extent and depth of experience specifically relevant to design of items assigned to Contractor.
- C. Design Data: Submit for Architect/Engineer's knowledge for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.
- D. Test Reports: After each test/inspection, promptly submit one copies of report to Architect/Engineer and to Barton Malow Builders.
 - 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. Compliance with Contract Documents.
 - k. When requested by Architect/Engineer, Barton Malow Builders, or Owner provide interpretation of results.

2. Test report submittals are for Architect/Engineer's knowledge for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.
- E. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Barton Malow Builders and Architect/Engineer, in quantities specified for Product Data.
 1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- F. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Barton Malow Builders and Architect/Engineer's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
- G. Manufacturer's Field Reports: Submit reports for Barton Malow Builders and Architect/Engineer's benefit or for Owner information.
 1. Submit report in duplicate within 14 days of observation to Barton Malow Builders and Architect/Engineer for information.
 2. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents.
- H. Erection Drawings: Submit drawings for Architect/Engineer's benefit or for Owner information.
 1. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents.

1.08 QUALITY ASSURANCE

- 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.
 2. Qualification Statement: Provide documentation showing testing laboratory is accredited under IAS AC89.
- B. Designer Qualifications: Where professional engineering design services and design data submittals are specifically required of Contractor by Contract Documents, provide services of a Professional Engineer experienced in design of this type of work and licensed in Michigan.

1.09 REFERENCES AND STANDARDS

- A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Comply with reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- C. Obtain copies of standards where required by product specification sections.
- D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.

1.10 TESTING AND INSPECTION AGENCIES AND SERVICES

- A. As indicated in individual specification sections, Contractor shall employ and pay for services of an independent testing agency to perform specified testing.
- B. Owner or Barton Malow Builders may employ and pay for services of an independent testing agency to perform quality testing and inspection on the following:
 1. Structural Steel

1. Masonry
1. Concrete Placement
1. Subgrade & Subbase
1. Asphalt Placement
1. Testing & Balancing
- C. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.
- D. Contractor Employed Agency:
 1. Testing agency: Comply with requirements of ASTM E329, ASTM E543, ASTM E699, ASTM C1021, ASTM C1077, ASTM C1093, and ASTM D3740.
 2. Inspection agency: Comply with requirements of ASTM D3740 and ASTM E329.
 3. Laboratory Qualifications: Accredited by IAS according to IAS AC89.
 4. Laboratory: Authorized to operate in Michigan.
 5. Laboratory Staff: Maintain a full time registered Engineer on staff to review services.
 6. Testing Equipment: Calibrated at reasonable intervals either by NIST or using an NIST established Measurement Assurance Program, under a laboratory measurement quality assurance program.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 QUALITY CONTROL

- A. Each Contractor is responsible to provide the Owner with a completed quality product for its Work. Each Contractor shall be responsible for any costs associated with re-testing and re-performing the Work as a result of the Contractor's poor performance or workmanship or other failure to comply with the Contract Documents.
- B. All Work shall be done by persons qualified in their respective trades, and the workmanship shall be first-class in every respect. Each Contractor is responsible for ensuring employees are appropriately trained. All materials and equipment furnished shall be the best of their respective kinds for the intended use and unless otherwise specified, same shall be new and of the latest design.
- C. The Contractor shall provide Barton Malow Builders, Owner, Architect and their Testing Agency access to the Work in preparation and progress wherever the Work is located at all reasonable times.
- D. Barton Malow Builders and the Architect will have the authority to reject Work that does not conform to the Contract Documents or may require special inspection or testing, whether or not such Work is to be then fabricated, installed or completed. The Architect shall make all decisions with respect to questions concerning the quality or fitness of materials, equipment and workmanship.
- E. Failure by a Contractor to conduct its operations, means and methods and coordinate proper sequencing of the Work may cause Barton Malow Builders or Owner to withhold payment or any other means deemed necessary to correct non-conforming Work.
- F. The Owner will employ without cost to the Contractors, a testing firm to perform such engineering laboratory services and on-site inspection as deemed necessary by the Owner, Barton Malow Builders and/or the Architect to determine compliance with the requirements of the Contract Documents. This Work will not be a service to the Contractors for the performing of tests and checking of materials required of the Contractors.
- G. The testing firm will report directly to Barton Malow Builders. Copies of test and inspection reports will be furnished to the appropriate Contractors. The laboratory and its representatives will be instructed to promptly call to the attention of the Contractor, any instance of non-compliance with the requirements of the Contract Documents. Failure to so notify the Contractor shall not relieve the Contractor of any of its responsibilities for

compliance or making good workmanship or materials which are not in compliance with the requirements of the Contract Documents.

- H. Each Contractor shall cooperate with the testing firm and provide labor to assist with sample preparations where applicable.

3.02 MOCK-UPS

- A. Before installing portions of the Work where mock-ups are required, construct mock-ups in location and size indicated for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work. The purpose of mock-up is to demonstrate the proposed range of aesthetic effects and workmanship.
- B. Accepted mock-ups establish the standard of quality the Owner/Architect will use to judge the Work.
- C. Integrated Exterior Mock-ups: Construct integrated exterior mock-up as indicated on drawings. Coordinate installation of exterior envelope materials and products as required in individual Specification Sections. Provide adequate supporting structure for mock-up materials as necessary.
- D. Room Mock-ups: Construct room mock-ups as indicated on drawings. Coordinate installation of materials, products, and assemblies as required in specification sections; finish according to requirements. Provide required lighting and any supplemental lighting where required to enable Owner/Architect to evaluate quality of the mock-up.
- E. Notify Barton Malow Builders seven (7) working days in advance of dates and times when mock-ups will be constructed.
- F. Provide supervisory personnel who will oversee mock-up construction. Provide workers that will be employed during the construction at Project.
- G. Tests shall be performed under provisions identified in this section and identified in the respective product specification sections.
- H. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
- I. Obtain Owner/Architect's approval of mock-ups before starting work, fabrication, or construction.
1. Each mock-up should be submitted per the submittal requirements outlined in 013000 - Administrative Requirements
 2. Make corrections as necessary until submittal approval is issued.
- J. Accepted mock-ups shall be a comparison standard for the remaining Work.
- K. Where mock-up has been accepted by Owner/Architect and is specified in product specification sections to be removed, protect mock-up throughout construction, remove mock-up and clear area when directed to do so by Barton Malow Builders.
- L. Where possible salvage and recycle the demolished mock-up materials.
- M. When mock-up is indicated to remain as part of work, ensure mock-up is protected after final approval.

3.03 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

3.04 TESTING AND INSPECTION

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

1. Provide qualified personnel at site. Cooperate with Owner, Architect, and Barton Malow Builders in performance of services.
 2. Perform specified sampling and testing of products in accordance with specified standards.
 3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
 4. Promptly notify Owner, Architect, and Barton Malow Builders of observed irregularities or non-compliance of Work or products.
 5. Perform additional tests and inspections required by Owner, Architect, and Barton Malow Builders.
 6. Attend preconstruction meetings (as required).
 7. Submit reports of all tests/inspections specified.
 8. Testing Agency has authority to stop the nonconforming work.
- 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.
- D. Contractor's Responsibilities:
1. The testing firm will report directly to Owner and/or Barton Malow Builders. Copies of test and inspection reports will be furnished to the appropriate Contractors. The laboratory and its representatives will be instructed to promptly call to the attention of the Contractor any instance of non-compliance with the requirements of the Contract Documents. Failure to so notify the Contractor shall not relieve the Contractor of any of its responsibilities for compliance or making good workmanship or materials which are not in compliance with the requirements of the Contract Documents.
 2. Each Contractor shall cooperate with the testing firm and provide labor to assist and lifts, ladders or other means to permit full access for testing firm and to assist with sample preparations where applicable.
 3. CONTRACTOR SHALL:
 - a. Notify Barton Malow Builders sufficiently in advance of operations (24-hours minimum) to allow for laboratory assignment of personnel and scheduling of tests.
 - 1) When tests or inspections cannot be performed after such notice, reimburse Owner for all expenses incurred arising out of or resulting from Contractor's negligence.
 - b. When the Contractor is providing the testing and prior to start of Work, submit testing laboratory name, address, and telephone number, and names of full time registered engineer and responsible officer.
- E. RE-TEST RESPONSIBILITY:
- F. Where the results of required inspections, tests, or similar services prove unsatisfactory and do not indicate compliance with the requirements of the Contract Documents, the re-tests shall be the responsibility of the Contractor regardless of whether the original test was the Contractor's responsibility.
1. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Barton Malow Builders, Architect/Engineer, or Owner beyond specified requirements.
- G. Re-testing of Work revised or replaced by the Contractor is the Contractor's responsibility where required tests were performed on original Work. All costs and fees for re-testing shall be paid by the Contractor.
- H. Schedule delays and costs which are the result of non-conforming work or remedy will be the responsibility of the offending Contractor.
- I. The Contractor is responsible to pay the cost of additional testing in the event that additional testing of the Contractor's materials, installation, and other Work is required by the independent testing laboratory because of test results not in compliance with the

Contract Documents and/or additional testing required as a result of Contractor's negligence or poor workmanship.

3.05 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 equipment as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of observer to Architect/Engineer 30 days in advance of required observations.
 - 1. Observer subject to approval of Architect/Engineer.
- C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.06 NOTICE OF NON-CONFORMANCE

- A. Barton Malow Builders, TMP Architecture, Inc, and Owner may conduct observations/evaluations of the Contractor's Work. Barton Malow Builders, TMP Architecture, Inc, and /or Owners reviews do not relieve the Contractor from compliance with the Contract Documents or necessary corrections for deficiencies thereof. Contractors whose Work does not meet the standards set by the Contract Documents will be notified by representatives of Barton Malow Builders using Autodesk Build forms or issues. The Contractor, upon receipt of the Notice of Non-Conformance, shall complete the corrective actions necessary within 7 days of issuance and indicate completion (with proper photo proof) using Autodesk Build.
 - 1. A copy of the Notice of Non-conformance may be obtained from Barton Malow Builders.
- B. Control of nonconforming product: The Contractor shall establish and maintain documented procedures to ensure that product that does not conform to specified requirements is prevented from unintended use or installation. This control shall provide for identification documentation, evaluation, segregation (when practical), disposition of nonconforming product, and for notification to the functions concerned.
- C. Review and disposition of nonconforming Work: Nonconforming product shall be reviewed in accordance with documented procedures. It may be:
 - 1. reworked to meet the specified requirements,
 - 2. accepted with or without repair by concession,
 - 3. regraded products for alternative applications, or
 - 4. rejected or scrapped and disposed of nonconforming work and replace

END OF SECTION

**SECTION 014100
REGULATORY REQUIREMENTS**

PART 1 GENERAL

1.01 SUMMARY OF REFERENCE STANDARDS

- A. Regulatory requirements applicable to this project are the following:
- B. 29 CFR 1910 - Occupational Safety and Health Standards current edition.

1.02 RELATED REQUIREMENTS

- A. Section 014000 - Quality Requirements.

1.03 QUALITY ASSURANCE

- A. Contractor's Designer Qualifications: Refer to Section - 014000 - Quality Requirements.

1.04 GENERAL REQUIREMENTS

- A. All Work is to comply with the rules and regulations of governing bodies having jurisdiction.
- B. Standards, codes and regulations published by Manufacturer's associations, governmental agencies and other regulatory authorities form a part of these Specifications as minimum requirements. Such references include the latest issue and legal requirements in force.
- C. Where differences occur between the Contract Documents and such standards, the strictest requirements shall take precedence.
- D. Supply all materials and perform all Work in accordance with the Manufacturer's specifications and installation procedures, and in conformance with published Trade and Manufacturers' association standards, unless specifically noted otherwise in the Contract Documents.

1.05 PERMITS AND FEES

- A. The Owner will obtain and pay for the General Building Permit.
- B. Other than the general building permit, Contractors shall provide and pay for all other permits, assessments, governmental fees, bonds, connection charges, licenses and inspection fees and any other charges necessary for the proper execution and completion of the Contractor's Work with the Authority Having Jurisdiction (JHA).
- C. Contractor is to provide, pay for and coordinate all other permits, fees, bonds, inspections, and city, county, state, federal and governing authority approvals required for the successful completion of the Work contained within its respective Bid Category and deliver required certificates of inspection and approvals to Barton Malow Builders.
- D. This Project is under but not limited to the jurisdiction of the:
 - 1. State of Michigan Building Division (LARA)
 - 2. State of Michigan Division (LARA) for Mechanical, Electrical, Low Voltage
 - 3. State of Michigan Fire Marshal Division (BFS) & State of Michigan Fire Department
 - 4. State of Michigan Boiler Division (LARA)
 - 5. State of Michigan Elevator Division (LARA)
 - 6. State of Michigan and/or Oakland County County Department of Public Health
 - 7. Oakland County County Road Commission
 - 8. []

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 014216
DEFINITIONS**

PART 1 GENERAL

1.01 SUMMARY

- A. This section supplements the definitions contained in the General Conditions.
- B. Other definitions are included in individual specification sections.

1.02 DEFINITIONS

- A. Furnish: To supply, deliver, unload, and inspect for damage.
- B. Provide: To supply, deliver, unload, and inspect for damage.
- C. Install: To unpack, assemble, erect, apply, place, finish, cure, protect, clean, start up, and make ready for use.
- D. Product: Material, machinery, components, equipment, fixtures, and systems forming the work result. Not materials or equipment used for preparation, fabrication, conveying, or erection and not incorporated into the work result. Products may be new, never before used, or re-used materials or equipment.
- E. Project Manual: The book-sized volume that includes the procurement requirements (if any), the contracting requirements, and the specifications.
- F. Provide: To furnish and install.
- G. Supply: Same as Furnish.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 015000
TEMPORARY FACILITIES AND CONTROLS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Water Control & Environmental Protection
- B. Temporary utilities.
- C. Temporary telecommunications services.
- D. Temporary sanitary facilities.
- E. Temporary Controls: Barriers, enclosures, and fencing.
- F. Vehicular access and parking.
- G. Waste removal facilities and services.
- H. Project identification sign.
- I. Field offices.

1.02 RELATED REQUIREMENTS

- A. Section 013553 - Security Procedures
- B. Section 015100 - Temporary Utilities.
- C. Section 015213 - Field Offices and Sheds.
- D. Section 015500 - Vehicular Access and Parking.
- E. Section 015813 - Temporary Project Signage.

1.03 WATER CONTROL & ENVIRONMENTAL PROTECTION

- A. Comply with requirements in applicable Division 33 Sections for temporary drainage and dewatering facilities and operations not directly associated with construction activities included in individual Sections. Where feasible, use same facilities. Maintain Project site, excavations, and construction free of water.
 - 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining property nor endanger permanent Work or temporary facilities.
 - 2. Before connection and operation of permanent drainage piping system, provide temporary drainage where roofing or similar waterproof deck construction is completed.
 - 3. Remove snow and ice as required to minimize accumulations.
- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects. Avoid using tools and equipment that produce harmful noise. Restrict use of noise making tools and equipment to hours that will minimize complaints from persons or firms near Project site.
- C. Stormwater Control: Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of stormwater from heavy rains.
- D. Moisture & Mold Control
 - 1. Contractor's Moisture-Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.
 - 2. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
 - a. Protect porous materials from water damage.
 - b. Protect stored and installed material from flowing or standing water.
 - c. Keep porous and organic materials from coming into prolonged contact with concrete.

- d. Remove standing water from decks.
 - e. Keep deck openings covered or dammed.
 3. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
 - a. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
 - b. Keep interior spaces reasonably clean and protected from water damage.
 - c. Periodically collect and remove waste containing cellulose or other organic matter.
 - d. Discard or replace water-damaged material.
 - e. Do not install material that is wet.
 - f. Discard, replace or clean stored or installed material that begins to grow mold.
 - g. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.
 4. Controlled Construction Phase of Construction: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
 - a. Control moisture and humidity inside building by maintaining effective dry-in conditions.
 - b. Use permanent HVAC system to control humidity.
 - c. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.
 - 1) Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet for 48 hours are considered defective.
 - 2) Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record daily readings over a forty-eight hour period. Identify materials containing moisture levels higher than allowed. Report findings in writing to Architect.
 - 3) Remove materials that can not be completely restored to their manufactured moisture level within 48 hours.
 5. All pumping or bailing necessary to keep excavations and trenches free from the accumulation of water during the entire excavating and backfilling progress of the Work shall be the responsibility of the Contractor performing said excavations and trenches due to its scope of Work.
 6. All Contractors are responsible for the dewatering to complete their scope of work.
 7. Dispose of water in such a manner as will not endanger public health or cause damage or expense to public or private property. Abide by the requirements of the site dewatering plan and any public agencies having jurisdiction.
- E. Snow Removal
1. Contractor performing Work under exposed conditions shall remove snow and ice for the protection and execution of their Work. Keeping public traffic areas and circulation routes free of snow shall be the responsibility of Owner.
- F. Maintain temporary facilities in operable condition.

1.04 TEMPORARY UTILITIES - SEE SECTION 015100

- A. Owner will provide the following:
 1. Electrical power, consisting of connection to existing facilities.
 2. Water supply, consisting of connection to existing facilities.
- B. Existing facilities may not be used.

1.05 TELECOMMUNICATIONS SERVICES

- A. Provide, maintain, and pay for telecommunications services to field staff and/or site field office at time of project mobilization.

- B. Telecommunications services shall include:
 - 1. Windows-based iPad and/or personal computer dedicated to project telecommunications, with necessary software and laser printer.
 - 2. Internet Connections: Minimum of one; DSL modem or faster.

1.06 TEMPORARY SANITARY FACILITIES

- A. Barton Malow Builders to provide and maintain required temporary toilets. Provide at time of project mobilization.
- B. Use of existing facilities is not permitted.
- C. Maintain daily in clean and sanitary condition.

1.07 BARRIERS AND COVERED WALKWAYS

- A. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and public of possible hazard. Where appropriate and needed, provide lighting, including flashing red or amber lights.
- B. Covered Walkway: Erect structurally adequate, protective, covered walkway for passage of individuals along adjacent public street(s). Coordinate with entrance gates, other facilities, and obstructions. Comply with regulations of authorities having jurisdiction. Comply with special requirements by Owner.
 - 1. Provide wood-plank overhead decking, protective plywood enclosure walls, handrails, barricades, warning signs, lights, safe and well-drained walkways, and similar provisions for protection and safe passage.
- C. Furnish and install all necessary shoring, bracing, flashers, safety barricades and other safety equipment in accordance with MIOSHA/OSHA rules and regulations. Provide covers for holes per MIOSHA/OSHA rules and regulations.

1.08 FENCING

- A. Barton Malow Builders may provide temporary fencing with gates for required access and remove same at the completion of the Project.
- B. The Contractors shall repair or replace all fencing including but not limited to Erosion and Sediment Control, Perimeter, Tree, and Safety fencing damaged as a result of its operation. Contractors shall remove and replace fencing and gates required to provide access for oversized items.
- C. Contractor's personnel are not allowed to work outside of the construction fence without permission of Barton Malow Builders.

1.09 ENCLOSURES AND ROOFS

- A. Roofing Contractor shall provide temporary roofing as required to provide and maintain a watertight enclosure during construction.
- B. All Contractor('s) shall provide temporary enclosures for protection of construction per bid category work scopes, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior where compromised by Contractor Work.
- C. Horizontal Openings: Close openings in floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.
- D. Install tarpaulins securely using fire-retardant-treated wood framing and other materials.
- E. Where temporary wood or plywood enclosure exceeds 100 sq. ft. in area, use fire retardant-treated material for framing and main sheathing.
- F. Contractors and their subordinate parties shall be responsible for damages to roofing, sheet metal and roof structure while performing Work. The roofing Contractor will perform the repair Work at the expense of the Contractor('s) responsible for the damage.

- G. All Contractors will protect adjacent existing roof surfaces while performing their Work. No construction materials will be allowed to be placed on existing roof surfaces without prior approval of the Owner through Barton Malow Builders.

1.10 TEMPORARY PARTITIONS

- A. Architectural Contractor shall provide temporary partitions and ceilings per bid category work scopes as required to separate Work areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas and to prevent damage to Owner's facilities and equipment.
- B. Each Contractor shall erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise.
1. Construct dustproof partitions of not less than nominal 4-inch studs, 5/8 inch gypsum wallboard with joints taped on occupied side, and 1/2 inch fire-retardant plywood on construction side.
 2. Seal joints and perimeter. Equip partitions with dustproof doors and security locks.
 3. Protect air-handling equipment.
 4. Weatherstrip openings.

1.11 TEMPORARY STAIRS, LADDERS, RAMPS, RUNWAYS, SCAFFOLDING, HOISTING AND ELEVATORS

- A. Each Contractor is to provide and maintain all necessary temporary stairs, ladders, ramps, and runways to facilitate conveyance of workers, materials, tools, and equipment for proper execution of its Work. All protection and safety barricades, devices, covers, and all other necessary items shall be provided by each Contractor as it relates to the safe conduct of its Work and protection of people and property in its Work area in accordance with applicable law.
- B. Any Contractor or Subordinate Party performing excavation Work shall be responsible to furnish, install and maintain temporary barricades and/or fencing of all open excavations until such time as the backfilling is complete. Flasher lights shall be provided on barricades and fencing by the Contractor as requested by Barton Malow Builders and in accordance with applicable law. As a minimum, all barricades across roads and walks shall have lights on them in working condition.
- C. Each Contractor and its Subordinate Parties shall provide and maintain in good repair barricades, overhead protection, guard rails, etc., as required by law or necessary for the protection of the public and personnel engaged in the Work from hazards incidental to performance of the Work. Contractor shall do everything necessary to protect the Owner's employees, the public and workers from injuries and to protect vehicles and other property from damage.
- D. Scaffolding:
1. Each Contractor is responsible for providing, maintaining and inspecting any and all ladders, scaffolds and other staging as required to complete its Work. All such ladders, scaffolds and staging equipment shall be erected, maintained, inspected and subsequently removed by each Contractor in accordance with all applicable safety laws, rules and regulations.
- E. Hoisting:
1. Each Contractor is responsible for its own hoisting and material/equipment movement costs as required to complete the Work under its Agreement.
 2. Hoisting of material or equipment above occupied areas will NOT be permitted unless the existing structure has been properly verified by a licensed professional Engineer to be able to bear the load of the material or equipment being hoisted if accidentally released. It is the responsibility of the Contractor performing such hoisting to properly and adequately reinforce existing structure.
 3. Transportation of construction materials through the Owner's facility shall be accomplished in accordance with the requirements described in Section 017000 - Execution and Closeout Requirements in such a manner so as to:
 - a. Not damage any of the existing facility, or Campus.

- b. Not impair the Owner's use of the facility, or Campus.
- c. Not create any type of mess or additional cleaning requirements in Owner occupied areas, or Campus.
4. The Owner's lifting equipment is not available for the unloading conveying or installation of Contractor's materials, unless coordinated otherwise with Barton Malow Builders.
5. Prior to the removal of all shoring and forms, the Contractor shall be responsible for temporary protection at the building floor perimeters and openings. Immediately after the removal of all shoring and forms, the Contractor shall furnish, install, and maintain all necessary temporary protections at the building floor perimeters and openings. Protection shall be OSHA 29 CFR Part 1926.502 (B) "Guardrail Systems" and shall include but not be limited to two-line rails and toe boards. Each Contractor that disturbs any temporary protection for its Work is responsible to reinstall to its original condition the guardrail or barricade system for the protection of the workers and others until final construction of perimeter exterior wall and/or shaft openings is completed. All other protection and safety barricades, devices, covers, etc., including those at all roof areas, shall be provided by the Contractor as it relates to the safe conduct of its Work in accordance with all local, state and federal law, rules and regulations and the requirements of the Contract Documents and shall be in accordance with the most stringent requirements.
6. The contractor shall provide temporary guardrails at the building floor perimeters, interior shafts, all roof areas, or other openings, immediately after the erection of the steel frame and with the installation of steel decking. Protection shall be OSHA 29 CFR Part 1926.502 (B) "Guardrail Systems" and shall include but not be limited to two-line rails and toe boards. This temporary protector shall be left in place after completion of the steel frame for the use of all other Contractors. The Contractor shall maintain and remove said guardrails and patch concrete. Each Contractor that disturbs any temporary protection for its Work is responsible to protect the area during its Work and to reinstall to its original condition the guardrail or barricade system for the protection of the workers and others until final construction of perimeter exterior wall and/or shaft openings is completed. All other protection and safety barricades, devices, covers, etc. shall be provided by this Contractor as it relates to the safe conduct of its Work in accordance with all local, state and federal regulations and the requirements of the Contract Documents, and shall be in accordance with the most stringent requirements.

1.12 FIRE PRECAUTIONS AND PROTECTION

- A. All Contractors and their Subordinate Parties shall:
 1. Assume full responsibility and take all necessary precautions to guard against and eliminate all possible fire hazards and to prevent damage to any construction work, building materials, equipment, temporary field offices, storage sheds, and all other property, both public and private.
 2. Conspicuously post the location of the nearest fire alarm pull box and the telephone number of the local fire department within the field offices and on the construction site adjacent to its Work.
 3. Take precautions to prevent fire hazards in accordance with all fire protection and prevention laws and codes. No open fires shall be permitted.
 4. Shall not be permitted to perform welding, flame cutting, or other operations involving the use of flame, arcs, or sparking devices without submitting a Hot Work Permit to Barton Malow Builders a minimum of 24 hours prior or without adequate protection and shielding. Hot Work Permits can be obtained through Autodesk Build. All combustible and flammable material shall be removed from the immediate area of the hot work. Material shall be protected with a fire-resistant tarpaulin to prevent sparks, flames, or hot metal from reaching materials.
 - a. Only fire-resistant tarpaulins shall be used on this Project.
 5. Provide the necessary personnel and fire fighting equipment to effectively control incipient fires resulting from the hot work.

6. Provide its own fire extinguishers in the immediate area of the Work.
 7. Review the entire Project at least once a week to make certain it has adhered to the conditions and requirements set forth herein.
 8. Shall not bring into building at any one time more than a one day supply of flammable liquids such as oil, gasoline, paint or paint solvent
 - a. All flammable liquids having a flash point of 110 degrees F or below, which must be brought into any building, shall be confined to Underwriter's Laboratories' labeled safety cans.
 - b. The bulk supply of all flammable liquids shall be detached at least 75 feet from the building and from yard storage of building materials.
 - c. Spigots on drums containing flammable liquids are prohibited on the project site. Drums are to be equipped with approved vent pumps.
 9. Shall not store or leave overnight within the confines of the permanent building any combustible materials.
 - a. This includes all internal combustion engines using gas or fuel oil.
 - b. Hoisting of flammable or combustible materials to the roof shall only be in quantities as needed for immediate use
 10. Agree that, in the event of fire, all its workers anywhere on site will assist in extinguishing the fire
 11. Not place shanties of combustible construction inside of any structure.
 - a. Such shanties shall be detached at least seventy-five (75) feet from the building or as directed by Barton Malow Builders with approval of the Owner.
 - b. Totally incombustible shanties may be, if approved in writing by Barton Malow Builders, located inside of the structure.
 - c. Use of only Underwriter's Laboratory approved heaters and/or stoves are permitted in field offices or storage sheds and they shall have fire-resistive material underneath and at the sides near partitions and walls. Pipe sleeves and covering shall be used where stove pipe runs through walls or roof.
- B. Fire Extinguishers
1. Fire extinguishers shall be "all-purpose", and not a water type, to meet the approval of the Fire Underwriter's Laboratory, and will be inspected at regular intervals and recharged if necessary.
 2. In areas of flammable liquids, asphalt or electrical hazards, extinguishers of the 15 lb. carbon dioxide type or 20 lb. dry chemical type shall be provided
 3. Barton Malow Builders will provide and maintain in working order at all times during construction not less than a fire extinguisher for each 3000 sq feet with travel distance not to exceed 100 feet.
 4. All other required extinguishers shall be provided by the Contractor creating such hazard.
- C. Noxious Odors and Fumes
1. Combustion engine equipment, tar kettles, and any other items causing noxious odors or fumes, including diesel-powered equipment, will NOT be allowed in the building or near air intake louvers or building entrances and exits. If intake louver locations are in doubt, consult with Barton Malow Builders.

1.13 VEHICULAR ACCESS AND PARKING - SEE SECTION 015500

- A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.
- B. Coordinate access and haul routes with governing authorities and Owner.
- C. Provide and maintain access to fire hydrants, free of obstructions.
- D. Provide means of removing mud from vehicle wheels before entering streets.
- E. Designated existing on-site roads may be used for construction traffic.
- F. Existing parking areas located in lot(s) [] are to be used for construction parking.

1.14 WASTE REMOVAL

- A. See Section 017419 - Construction Waste Management and Disposal, for additional requirements.
- B. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
- C. Provide trash containers inside working area. Remove trash from building daily.
- D. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.
- E. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.15 PROJECT IDENTIFICATION

- A. Provide project identification sign of design, construction, and location approved by Owner.
- B. No other signs or advertising shall be displayed on premises without the approval of the Architect, Owner, and Barton Malow Builders. This does not exclude the posting of required trade notice and cautionary signage by Contractors.

1.16 FIELD OFFICES - SEE SECTION 015213

- A. Locate offices a minimum distance of 30 feet (10 m) from existing and new structures at the direction of Barton Malow Builders.

1.17 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, at the direction of Barton Malow Builders.
- B. Remove underground installations to a minimum depth of 2 feet (600 mm). Grade site as indicated.
- C. Clean and repair damage caused by installation or use of temporary work.
- D. Restore existing facilities used during construction to original condition.

PART 2 PRODUCTS

2.01 MATERIALS

- A. General: Provide new materials. Undamaged, previously used materials in serviceable condition may be used if approved by Architect. Provide materials suitable for use intended.
- B. Lumber and Plywood: Comply with requirements in Division 06 Section "Miscellaneous Rough Carpentry."
- C. Roofing: Standard-weight, mineral-surfaced, asphalt shingles or asphalt-impregnated and -coated, mineral-surfaced, roll-roofing sheet.
- D. Gypsum Board: Minimum 1/2 inch thick by 48 inches wide by maximum available lengths; regular-type panels with tapered edges. Comply with ASTM C 36.
- E. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indices of 25 and 50, respectively.
- F. Paint: Comply with requirements in Division 09 Sections "Exterior Painting" and "Interior Painting."
- G. Tarpaulins: Fire-resistive labeled with flame-spread rating of 15 or less.
- H. Water: Potable.

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PART 3 EXECUTION

3.01 TURNOVER

- A. Temporary Facility Changeover: Except for using permanent fire protection as soon as available, do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

END OF SECTION

**SECTION 015100
TEMPORARY UTILITIES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Temporary utilities include, but are not limited to, the following:
 - 1. Sewers and drainage.
 - 2. Water service and distribution.
 - 3. Sanitary facilities, including toilets, wash facilities, and drinking-water facilities.
 - 4. Heating and cooling facilities.
 - 5. Ventilation.
 - 6. Electric power service.
 - 7. Lighting.

1.02 RELATED REQUIREMENTS

- A. Section 015000 - Temporary Facilities and Controls:

1.03 REFERENCE STANDARDS

- A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction, including but not limited to the following:
 - 1. Building Code requirements.
 - 2. Health and safety regulations.
 - 3. Utility company regulations.
 - 4. Police, Fire Department and Rescue Squad rules.
 - 5. Regulations for air space over adjacent properties.
- B. 29 CFR 1926 - Safety and Health Regulations for Construction Current Edition.
- C. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations 2019.
- D. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.04 GENERAL REQUIREMENTS FOR TEMPORARY UTILITIES

- A. At earliest feasible time, when acceptable to Owner, change over from use of temporary service to use of permanent service.
 - 1. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permit.
- C. Conditions of Use: The following conditions apply to use of temporary services and facilities by all parties engaged in the Work:
 - 1. Keep temporary services and facilities clean and neat.
 - 2. Relocate temporary services and facilities as required by progress of the Work.
- D. When it is necessary to modify or tie into existing utility services, Contractor shall notify Barton Malow Builders in writing a minimum of 72 hours prior to the planned disruption. All disruptions shall be scheduled with Barton Malow Builders and Troy School District and shall be kept to a minimum time. Tie-ins and shutdowns of existing utilities may have to be performed during off hours. Contractor's are to include any required premium time in the Base bid.

1.05 TEMPORARY ELECTRICITY

- A. Electrical Energy Costs:
- B. By Owner.

1. The Owner will pay for electrical energy to operate temporary electrical power and lighting for the duration of the project at designated locations. Temporary power will be provided free of charge.
- C. Connect to Owner's existing power service.
 1. Provide temporary electric feeder from existing building electrical service at location as directed.
- D. Power Source
 1. The Electrical Contractor shall include in the Bid Category Electrical provisions to install, and pay for labor, equipment and materials required to make connections to the Owner's Power Source and to provide temporary electrical power and light distribution. The Electrical Contractor shall coordinate the location of the electrical power and lighting as directed by Barton Malow Builders. All equipment to be left in place during the entire project and removed at the direction of Barton Malow Builders.
 2. Protection shall be provided for the power supply source complete with disconnect switch and other required electrical devices.
- E. Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload-protected disconnecting means, automatic ground-fault interrupters, and main distribution switchgear.
 1. Install electric power service underground, unless overhead service must be used.
 2. Install power distribution wiring overhead and rise vertically where least exposed to damage.
 3. Connect temporary service to Owner's existing power source, as directed by electric company officials.
 4. Provide temporary electric feeder from existing building electrical service at location as directed by Barton Malow Builders.
- F. Provide waterproof connectors to connect separate lengths of electrical power cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
- G. Temporary Power Distribution:
 1. The Electrical Contractor shall include in the Bid Category Electrical provisions to provide and maintain temporary power distribution on the entire project , as follows:
 - a. Construction power shall be 120/208 volts, 60 hertz, 3 phase, 4 wire plus ground, alternating current. Provide the following outlets together with feeders, grounding, protective devices and ground fault interrupting devices.
 - b. Provide the following outlets together with feeders, grounding, protective devices and ground fault interrupting devices:
 - 1) Power centers - on each floor of the new building, provide a minimum of 2 power centers, or not less than one (1) per 10,000 s.f. rated not less than 100 amperes at 120/208 volt, 3 phase. 4 wire plus ground. Locate the power centers such that each will serve approximately equal areas and as far as possible, each shall be in the center of the respective area served.
 - (a) Renovation Work: Within the remodeled areas, provide at least one (1) additional similarly rated power center
 - 2) 120/208 volt duplex outlets - Provide weatherproof, G.F.I. protected, 20 ampere grounded outlets at a minimum rate equal to 1 - duplex outlet per 400 square feet. Outlets may be grouped in clusters of up to six duplex types with corresponding pro-rated increase in area served, provided that every portion of the construction and remodeled premises can be reached from the nearest outlet using a flexible cord no more than 50 feet in length.
 2. As partitions are erected, locations of power distribution points shall be added or relocated at the direction of Barton Malow Builders.

3. Ground Fault Circuit Interrupter (GFCI) protection will be provided on all temporary power receptacles and, where possible, directly on the circuit breaker supplying temporary power as referenced in NEC 305-6(a).
 4. The assured equipment grounding conductor program is only to be used on circuits greater than 20 amps as referenced in NEC 305-6(b).
- H. Rules and Regulations:
1. All temporary equipment and wiring for power, lighting and distribution requirements shall conform to OSHA requirements and be in accordance with applicable provisions of governing laws, codes, and ordinances.
 2. All temporary wiring and distribution equipment shall be maintained so as not to constitute a hazard to persons or property.
 3. Each Contractor is responsible to provide an assured grounding program in accordance with OSHA regulations for their own electrical power requirements.
- I. Standards: Comply with ANSI A10.6, NECA's "Temporary Electrical Facilities," and NFPA 241.
1. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with trade regulations and union jurisdictions.
 2. for temporary electric service. Install service to comply with NFPA 70.

1.06 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

- A. The Electrical Contractor shall include in the Bid Category Electrical provisions to provide temporary lighting with local switching that provides adequate illumination for construction operations and traffic conditions, as well as the following:
1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
 2. Install exterior-yard site lighting that will provide adequate illumination for construction operations, traffic conditions, and signage visibility when the Work is being performed.
 3. Install and maintain 120/208 volt temporary lighting as required in interior work areas. In addition to these minimum requirements provide adequate security lighting at guarded entrances outside storage areas, parking areas, and in areas of Contractor's and Architect's field offices and sheds.
- B. Lighting shall be achieved using LED, or other suitable fixture types, to Federal or State OSHA required minimum levels of illumination. Lighting shall be suitable for the application for construction operations in accordance with requirements of 29 CFR 1926 and authorities having jurisdiction.
- C. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required by Barton Malow Builders.
- D. As partitions are erected or other interferences which hamper achieving the minimum levels of illumination, locations of lighting distribution points shall be added or relocated at the direction of Barton Malow Builders.
- E. Servicing of Temporary Power and Lighting
1. The Electrical Contractor shall be responsible for the following via Bid Category Electrical:
 - a. Servicing, repairing and rearrangement of service equipment, temporary power, temporary lighting , and re-lamping.
 - b. Removal and disposal of temporary electrical power and lighting at completion of the Project or when so directed by Barton Malow Builders and repair of damage caused by installation or removal.
- F. Permanent building lighting may be utilized during construction.
- G. Task lighting in addition to OSHA required lighting shall be provided by each Contractor.

1.07 TEMPORARY POWER AND LIGHT FOR SPECIAL CONDITIONS:

- A. Special conditions for temporary electrical power and lighting required by others shall be provided as follows:
 - 1. Each Contractor requiring service of capacity or characteristics other than specified must make arrangements with the Electrical Contractor and pay for their own installation, removal, and service.
 - 2. The necessary grounded portable cords, lamps, light-stands, and fuses from the distribution outlets to points of use shall be provided by each Contractor to suit its own requirements.
 - 3. Temporary power cannot be used for welding operations

1.08 PERMANENT ELECTRICAL POWER AND LIGHTING

- A. When permanent electrical power and lighting systems are in operating condition, they may be used for temporary power and lighting for construction purposes provided the Electrical Contractor performs the following:
 - 1. Obtains the approval of the Architect and/or Owner through Barton Malow Builders.
 - 2. Assumes full responsibility for operation of the entire power and lighting systems.
 - 3. Verifies that warranty dates are established prior to usage of equipment and lamps.
- B. As permanent power and lighting becomes available, these systems will generally supplant the appropriate portions of the temporary installation.

1.09 TEMPORARY HEATING, COOLING & WEATHER PROTECTION

- A. Temporary heating/cooling requirements during the course of construction shall be divided into two categories as follows:
 - 1. Cold weather protection.
 - 2. Temporary heating.
- B. Cold Weather Protection:
 - 1. Heating required during the construction period prior to enclosure of the building shall be classified as "cold weather protection."
 - 2. Each Contractor shall provide temporary heating and protection, necessary to allow its Work to continue during cold weather to meet the project milestone dates prior to building enclosure, including:
 - a. The heating of materials (such as water and aggregate) as well as space heating for protection of newly placed or built construction at required temperatures (but not lower than 50 degrees F) and for the time specified.
 - b. Fire retardant tarpaulins and other materials used for temporary enclosures.
 - 3. Heat shall be provided by smokeless UL approved portable unit heaters, using fuel of types and kinds approved by Underwriter's Laboratories, Factory Mutual, and the Fire Marshal.
 - a. The Contractor shall provide fuel, power, maintenance, and attendance required for operation of portable heaters.
 - b. Interior or exterior surfaces damaged by the use of portable heating units shall be replaced with new materials at the responsible Contractor's expense.
 - 4. It shall be the responsibility of each Contractor to protect its own Work.
 - 5. All Contractors are responsible for snow, ice, and frost removal as necessary to complete the work.
 - 6. Contractor shall include all provisions for frost laws, including diminished load capabilities to an from the jobsite.
- C. All Exterior Contractors shall provide a plan to allow Work to continue without regard to temperature.
- D. Temporary Heating:
 - 1. Daily construction heat required after the building is enclosed shall be classified as "temporary heating" and will be the responsibility of the Mechanical Contractor to install and maintain.

2. The building or buildings or any portions thereof shall be considered enclosed when in the opinion of Barton Malow Builders it meets the following:
 - a. The exterior wall system and temporary interior wall enclosures are in place.
 - b. Openings in exterior walls are covered to provide reasonable heat retention.
3. The Exterior Contractors shall provide and maintain the temporary interior wall enclosures. If the exterior wall system is not complete in time to provide building enclosure of a portion of the new structure as scheduled, the Contractor responsible shall provide and maintain temporary exterior wall enclosures of polyethylene and, in addition to exercising all other rights and remedies under the Contract Documents and law, Barton Malow Builders shall be entitled to deduct the cost of such enclosures from the money due or to become due the Contractor(s)'s responsible for failure to meet said schedule.
4. In areas of the building or buildings where Work is being conducted, the temperature shall be maintained as specified in the various sections of the specifications, but not less than 50 degrees F for interior rough-in and not less than 65 degrees F during finishes installation. The temperature shall not be allowed to reach a level that will cause damage to any portion of the Work, including materials stored in the building, which may be subject to damage by low temperatures.
5. Until the permanent heating system, or suitable portion thereof, is in operating condition, provide sufficient and UL approved space heaters of suitable capacity to maintain required temperatures in areas where work is being conducted and materials are stored. Include all necessary maintenance, venting and attendance for this temporary heating to meet all applicable laws, rules and regulations.
6. When the permanent heating system, or a suitable portion thereof, is in operating condition, the system may be used for temporary heating, provided the Mechanical Contractor performs the following:
 - a. Obtains approval from the Owner, through Barton Malow Builders, in writing for its use and any special provisions required for its temporary operation.
 - b. Assumes full responsibility for the entire heating system until final acceptance of the system by the Owner.
 - c. Uses supply only, not return if temporary heating utilizes the building's ductwork system.
 - d. Pays all costs for maintenance, attendance and restoration to "like new" condition of the system including final cleaning of equipment and ductwork and all necessary touch-up painting.
 - e. Turns over satisfactory evidence to Barton Malow Builders showing the extended warranties from manufacturers and proper maintenance procedures.
 - f. Provides and maintains temporary filters, boxes and other parts used for the temporary condition and replaces same with the new permanent filters at time of occupancy consistent with the warranty provisions. The Mechanical Contractor shall pay the cost of extending warranty and guarantee periods on any permanent equipment used prior to substantial completion.
7. Electrical power required for temporary heating will be furnished free of charge. The installation and service of the necessary temporary electrical feeders will also be the responsibility of the Mechanical Contractor.

1.10 TEMPORARY VENTILATION/HUMIDITY CONTROL

- A. Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment from that specified that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

1.11 TEMPORARY WATER SERVICE

- A. The Owner will pay for water used on this Project and Mechanical Contractor shall provide a source for drinking water. Each Contractor shall be responsible to provide containers, paper cups, ice, hoses, etc. for its needs.

- B. Cost of Water Used: By the Owner.
- C. Provide and maintain suitable quality water service for construction operations at time of project mobilization.
- D. Connect to existing water source.
- E. Immediately after award of the Agreement, the Mechanical Contractor shall furnish, install, maintain and subsequently remove a temporary hookup to the Owner's potable water system where directed by Barton Malow Builders for construction purposes. The Contractor shall provide all temporary piping and approved backflow prevention as necessary for distribution from the source. A minimum of 2 hose bibs shall be provided by the Mechanical Contractor as directed by Barton Malow Builders .
- F. Extend branch piping with outlets located so water is available by hoses with threaded connections. Provide temporary pipe insulation to prevent freezing.

1.12 TEMPORARY SEWER, DRAINAGE, SANITATION

- A. Sewers and Drainage:
 - 1. If sewers are available, provide temporary connections to remove effluent that can be discharged lawfully. If sewers are not available or cannot be used, provide drainage ditches, dry wells, stabilization ponds, and similar facilities. If neither sewers nor drainage facilities can be lawfully used for discharge of effluent, provide containers to remove and dispose of effluent off-site in a lawful manner.
 - a. Filter out excessive soil, construction debris, chemicals, oils, and similar contaminants that might clog sewers or pollute waterways before discharge.
 - 2. Toilet Facilities/Sanitary Requirements:
 - a. Barton Malow Builders shall provide and maintain temporary toilet facilities for the construction of the Project.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 015213
FIELD OFFICES AND SHEDS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Temporary field offices for use of Contractors & Subordinate Parties.
- B. Maintenance and removal.

1.02 RELATED REQUIREMENTS

- A. Section 011000 - Use of Premises: use of premises and responsibility for providing field offices.
- B. Section 015000 - Temporary Facilities and Controls:
 - 1. Temporary telecommunications services for administrative purposes.
 - 2. Temporary sanitary facilities required by law.

1.03 USE OF EXISTING FACILITIES

- A. Existing facilities shall not be used for field offices.

1.04 USE OF PERMANENT FACILITIES

- A. When permanent facilities are enclosed with operable utilities, relocate offices into building, with written agreement of Owner, and remove temporary buildings.
- B. Contractors will not be allowed to utilize spaces within the building for storage and other purposes unless they receive written approval from Barton Malow Builders. If a temporary office is allowed in the building for storage and other purposes unless they receive written approval from Barton Malow Builders. If a temporary office is allowed in the building, it must be fire treated in accordance with Section 0015100 Interim Life Safety Plan. Contractors shall vacate these spaces when and as directed by Barton Malow Builders.

PART 2 PRODUCTS

2.01 MATERIALS, EQUIPMENT, FURNISHINGS

- A. Materials, Equipment, Furnishings: Serviceable, new or used, adequate for required purpose.

2.02 CONSTRUCTION

- A. Field Offices: Mobile Units with lockable entrances, operable windows, and serviceable finishes; heated and air-conditioned; on foundations adequate for normal loading with steps and landings at entrance doors.
- B. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
- C. Fire Extinguishers: Hand carried, portable, UL rated. Provide class and extinguishing agent as indicated or a combination of extinguishers of NFPA-recommended classes for exposures.
 - 1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

2.03 ENVIRONMENTAL CONTROL

- A. Heating, Cooling, and Ventilating: Automatic equipment to maintain comfort conditions.

2.04 CONTRACTOR & SUBORDINATE PARTIES OFFICE AND FACILITIES

- A. The Owner or Barton Malow Builders will designate an area for construction trailers. Placement and scheduled duration shall be coordinated with Owner or Barton Malow Builders. Each Contractor is responsible to verify that all field offices, trailers, and storage sheds shall be in accordance with local codes and ordinances and the local Fire Marshal having jurisdiction. Each Contractor shall arrange and pay for its own telephone hookup and use. Submetering for use of utilities is mandatory. Each Contractor shall arrange and

pay for its own temporary electrical hookup, water, and toilets. The Contractor shall pay for all power used for the Contractor's temporary field office and temporary electrical service.

- B. Contractors shall maintain the use of designated space for offices and sheds. This includes removal of weeds, debris, trash, and cleanup of the area after removal of such temporary structures.
- C. Construction personnel shall park in the designated trade parking area. Limited parking will be available onsite as designated and coordinated with Owner or Barton Malow Builders. Temporary field offices and sheds shall not be used for living quarters.
- D. Temporary field offices and sheds shall not be used for living quarters.
- E. Storage trailers will be allowed on a case by case basis and must get the approval of Owner or Barton Malow Builders. Storage trailers shall be of suitable design, maintenance and appearance, and meet the approval of Owner or Barton Malow Builders and all applicable local codes and ordinances. All trailers must be visibly inspected by Barton Malow Builders before delivery.
- F. Conditions of Use: The following conditions apply to use of temporary services and facilities by all parties engaged in the Work:
 - 1. Keep temporary services and facilities clean and neat.
 - 2. Relocate temporary services and facilities as required by progress of the Work.

PART 3 EXECUTION

3.01 GENERAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

3.02 INSTALLATION

- A. General: Comply with the following:
 - 1. Locate field offices, storage sheds, sanitary facilities, and other temporary construction and support facilities for easy access. Locate facilities at the direction of Barton Malow Builders, where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required at the direction of Barton Malow Builders.
 - 2. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required.
 - 3. Provide incombustible construction for offices, shops, and sheds located within construction area or within 30 feet of building lines. Comply with NFPA 241.
- B. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment involved, including temporary utility services. Sheds may be open shelters or fully enclosed spaces within building or elsewhere onsite.
 - 1. Construct framing, sheathing, and siding using fire-retardant-treated lumber and plywood.
 - 2. Paint exposed lumber and plywood with exterior-grade acrylic-latex emulsion over exterior primer.

3.03 MAINTENANCE AND CLEANING

- A. Maintain facilities in good operating condition until removal. Protect from damage caused by freezing temperatures and similar elements.
 - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

3.04 REMOVAL

- A. Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, at the direction of Barton Malow Builders, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with

temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are the property of Contractor. Owner reserves right to take possession of Project identification signs.
 2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities
 3. At the direction of Barton Malow Builders or Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements in Division 01 Section "Contract Closeout."
- B. All temporary offices and sheds including foundation, must be removed with ten (10) days of written notice from Barton Malow Builders including restoration of grade. Structures not removed in a timely manner will be removed by Barton Malow Builders at the Contractor's expense.

END OF SECTION

**SECTION 015500
VEHICULAR ACCESS AND PARKING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Temporary Roads and Paved Areas
- B. Parking.
- C. Existing pavements and parking areas.
- D. Permanent pavements and parking facilities.
- E. Construction parking controls.
- F. Flag persons.
- G. Haul routes.
- H. Maintenance.
- I. Mud from site vehicles.

1.02 RELATED REQUIREMENTS

- A. Section 011000 - Use of Premises: For access to site, work sequence, and occupancy.

PART 3 EXECUTION

2.01 TEMPORARY ROADS AND PAVED AREAS

- A. Use of designated existing on-site streets and driveways for construction traffic is permitted.
- B. Tracked vehicles not allowed on paved areas.
- C. Provide and maintain access to fire hydrants free of obstructions.

2.02 PARKING

- A. Use of designated areas of existing parking facilities by construction personnel is permitted.
- B. There will be on-site parking for Contractors and their Subordinate Parties' employees.
- C. Contractors are directed to park in designated areas only. Each Contractor is responsible for providing transportation to and from the site. Any additional arrangement is the responsibility of the Contractor. Contractor, subordinate parties and their personnel will not be allowed to park in the Owner's parking area nor in the adjacent neighborhoods. Parking locations are subject to change.
- D. All parking for all trades is the responsibility of each Contractor. Barton Malow Builders will not reimburse parking tickets or pay for parking passes.

2.03 PERMANENT PAVEMENTS AND PARKING FACILITIES

- A. Avoid traffic loading beyond paving design capacity. Tracked vehicles not allowed.

2.04 CONSTRUCTION PARKING CONTROL

- A. Control vehicular parking to prevent interference with public traffic and parking, access by emergency vehicles, and Owner's operations.
- B. Prevent parking on or adjacent to access roads or in non-designated areas.

2.05 FLAG PERSONS

- A. Contractors must provide two flag persons while moving equipment through public areas or while receiving deliveries of materials and equipment.

2.06 HAUL ROUTES

- A. Consult with authority having jurisdiction, establish public thoroughfares to be used for haul routes and site access.
- B. Confine construction traffic to designated haul routes.

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- C. Provide traffic control at critical areas of haul routes to regulate traffic, to minimize interference with public traffic.

2.07 MUD FROM SITE VEHICLES

- A. Contractor shall remove mud from vehicle wheels before entering streets.

END OF SECTION

**SECTION 015713
TEMPORARY EROSION AND SEDIMENT CONTROL**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Prevention of erosion due to construction activities.
- B. Prevention of sedimentation of waterways, open drainage ways, and storm and sanitary sewers due to construction activities.
- C. Restoration of areas eroded due to insufficient preventive measures.
- D. Performance bond.
- E. Compensation of Owner for fines levied by authorities having jurisdiction due to non-compliance by responsible Contractor.

1.02 RELATED REQUIREMENTS

- A. Section 033000 - Cast-in-Place Concrete: Concrete for temporary and permanent erosion control structures indicated on drawings.
- B. Section 311000 - Site Clearing: Limits on clearing; disposition of vegetative clearing debris.
- C. Section 312200 - Grading: Temporary and permanent grade changes for erosion control.
- D. Section 313700 - Riprap: Temporary and permanent stabilization using riprap.
- E. Section 321123 - Aggregate Base Courses: Temporary and permanent roadways.
- F. Section 329219 - Seeding: Permanent turf for erosion control.
- G. Section 329223 - Sodding: Permanent turf for erosion control.
- H. Section 329300 - Plants: Permanent plantings for erosion control.

1.03 REFERENCE STANDARDS

- A. ASTM D4355/D4355M - Standard Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture, and Heat in a Xenon Arc-Type Apparatus 2021.
- B. ASTM D4491/D4491M - Standard Test Methods for Water Permeability of Geotextiles by Permittivity 2021.
- C. ASTM D4533/D4533M - Standard Test Method for Trapezoid Tearing Strength of Geotextiles 2015.
- D. ASTM D4632/D4632M - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles 2015a.
- E. ASTM D4751 - Standard Test Methods for Determining Apparent Opening Size of a Geotextile 2021a.
- F. ASTM D4873/D4873M - Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls and Samples 2017 (Reapproved 2021).
- G. EPA (NPDES) - National Pollutant Discharge Elimination System (NPDES), Construction General Permit Current Edition.
- H. FHWA FLP-94-005 - Best Management Practices for Erosion and Sediment Control 1995.
- I. USDA TR-55 - Urban Hydrology for Small Watersheds; USDA Natural Resources Conservation Service 2015.

1.04 PERFORMANCE REQUIREMENTS

- A. Comply with requirements of EPA (NPDES) for erosion and sedimentation control, as specified by the NPDES, for Phases I and II, and in compliance with requirements of Construction General Permit (CGP), whether the project is required by law to comply or not, or as directed by Barton Malow Builders.
- B. Also comply with all more stringent requirements of Oakland County County Erosion and Sedimentation Control Manual.

- C. Comply with all requirements of State of Michigan EGLE for erosion and sedimentation control .
- D. Develop and follow an Erosion and Sedimentation Prevention Plan and submit periodic inspection reports.
- E. Do not begin clearing, grading, or other work involving disturbance of ground surface cover until applicable permits have been obtained; furnish all documentation required to obtain applicable permits.
 - 1. Owner will obtain permits and Site Contractor will pay for permits fees and securities required by authority having jurisdiction.
 - 2. Owner will withhold payment to Contractor equivalent to all fines resulting from non-compliance with applicable regulations.
- F. Provide to Authority Having Jurisdiction (JHA) a Performance and/or Maintenance Bond covering erosion and sedimentation preventive measures only, in an amount equal to 100 percent of the cost of erosion and sedimentation control work.
- G. Timing: Put preventive measures in place as soon as possible after disturbance of surface cover and before precipitation occurs.
- H. Storm Water Runoff: Control increased storm water runoff due to disturbance of surface cover due to construction activities for this project.
 - 1. Prevent runoff into storm and sanitary sewer systems, including open drainage channels, in excess of actual capacity or amount allowed by authorities having jurisdiction, whichever is less.
 - 2. Anticipate runoff volume due to the most extreme short term and 24-hour rainfall events that might occur in 10 years.
- I. Erosion On Site: Minimize wind, water, and vehicular erosion of soil on project site due to construction activities for this project.
 - 1. Control movement of sediment and soil from temporary stockpiles of soil.
 - 2. Prevent development of ruts due to equipment and vehicular traffic.
 - 3. If erosion occurs due to non-compliance with these requirements, restore eroded areas at no cost to Owner or Barton Malow Builders.
- J. Erosion Off Site: Prevent erosion of soil and deposition of sediment on other properties caused by water leaving the project site due to construction activities for this project.
 - 1. Prevent windblown soil from leaving the project site.
 - 2. Prevent tracking of mud onto public roads outside site.
 - 3. Prevent mud and sediment from flowing onto sidewalks and pavements.
 - 4. If erosion occurs due to non-compliance with these requirements, restore eroded areas at no cost to Owner .
- K. Sedimentation of Waterways On Site: Prevent sedimentation of waterways on the project site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.
 - 1. If sedimentation occurs, install or correct preventive measures immediately at no cost to Owner or Barton Malow Builders ; remove deposited sediments; comply with requirements of authorities having jurisdiction.
 - 2. If sediment basins are used as temporary preventive measures, pump dry and remove deposited sediment after each storm.
- L. Sedimentation of Waterways Off Site: Prevent sedimentation of waterways off the project site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.
 - 1. If sedimentation occurs, install or correct preventive measures immediately at no cost to Owner or Barton Malow Builders; remove deposited sediments; comply with requirements of authorities having jurisdiction.
- M. Open Water: Prevent standing water that could become stagnant.
- N. Maintenance: Maintain temporary preventive measures until permanent measures have been established.

1.05 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Erosion and Sedimentation Control Plan:
 - 1. Submit not less than 30 days prior to anticipated start of clearing, grading, or other work involving disturbance of ground surface cover.
 - 2. Include:
 - a. Site plan identifying soils and vegetation, existing erosion problems, and areas vulnerable to erosion due to topography, soils, vegetation, or drainage.
 - b. Measurements of existing turbidity of waterways.
 - c. Site plan showing grading; new improvements; temporary roads, traffic accesses, and other temporary construction; and proposed preventive measures.
 - d. Where extensive areas of soil will be disturbed, include storm water flow and volume calculations, soil loss predictions, and proposed preventive measures.
 - e. Schedule of temporary preventive measures, in relation to ground disturbing activities.
 - f. Other information required by law.
 - g. Format required by law is acceptable, provided any additional information specified is also included.
 - 3. Obtain the approval of the Plan by authorities having jurisdiction.
 - 4. Obtain the approval of the Plan by Architect/Engineer.
- C. Certificate: Mill certificate for silt fence fabric attesting that fabric and factory seams comply with specified requirements, signed by legally authorized official of manufacturer; indicate actual minimum average roll values; identify fabric by roll identification numbers.
- D. Inspection Reports: Submit report of each inspection; identify each preventive measure, indicate condition, and specify maintenance or repair required and accomplished.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Mulch: Use one of the following:
 - 1. Straw or hay.
- B. Erosion control matting or netting.
 - 1. Cutback asphalt.
 - 2. Polyethylene film, where specifically indicated only.
- C. Grass Seed For Temporary Cover: Select a species appropriate to climate, planting season, and intended purpose. If same area will later be planted with permanent vegetation, do not use species known to be excessively competitive or prone to volunteer in subsequent seasons.
- D. Bales: Air dry, rectangular straw bales.
 - 1. Cross Section: 14 by 18 inches (350 by 450 mm), minimum.
 - 2. Bindings: Wire or string, around long dimension.
- E. Bale Stakes: One of the following, minimum 3 feet (1 m) long:
 - 1. Steel U- or T-section, with minimum mass of 1.33 pound per linear foot (1.98 kg per linear m).
 - 2. Wood, 2 by 2 inches (50 by 50 mm) in cross section.
- F. Silt Fence Fabric: Polypropylene geotextile resistant to common soil chemicals, mildew, and insects; non-biodegradable; in longest lengths possible; fabric including seams with the following minimum average roll lengths:
 - 1. Average Opening Size: 30 U.S. Std. Sieve (0.600 mm), maximum, when tested in accordance with ASTM D4751.
 - 2. Permittivity: 0.05 sec^{-1} , minimum, when tested in accordance with ASTM D4491/D4491M.
 - 3. Ultraviolet Resistance: Retaining at least 70 percent of tensile strength, when tested in accordance with ASTM D4355/D4355M after 500 hours exposure.

4. Tensile Strength: 100 pounds-force (450 N), minimum, in cross-machine direction; 124 pounds-force (550 N), minimum, in machine direction; when tested in accordance with ASTM D4632/D4632M.
 5. Elongation: 15 to 30 percent, when tested in accordance with ASTM D4632/D4632M.
 6. Tear Strength: 55 pounds-force (245 N), minimum, when tested in accordance with ASTM D4533/D4533M.
 7. Color: Manufacturer's standard, with embedment and fastener lines preprinted.
- G. Silt Fence Posts: One of the following, minimum 5 feet (1500 mm) long:
1. Steel U- or T-section, with minimum mass of 1.33 pound per linear foot (1.98 kg per linear m).
 2. Softwood, 4 by 4 inches (100 by 100 mm) in cross section.
 3. Hardwood, 2 by 2 inches (50 by 50 mm) in cross section.
- H. Gravel: See Section 321123 for aggregate.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine site and identify existing features that contribute to erosion resistance; maintain such existing features to greatest extent possible.

3.02 PREPARATION

- A. Schedule work so that soil surfaces are left exposed for the minimum amount of time.

3.03 SCOPE OF PREVENTIVE MEASURES

- A. In all cases, if permanent erosion resistant measures have been installed temporary preventive measures are not required.
- B. Construction Entrances: Traffic-bearing aggregate surface.
1. Width: As required; 20 feet (7 m), minimum.
 2. Length: 50 feet (16 m), minimum.
 3. Provide at each construction entrance from public right-of-way.
 4. Where necessary to prevent tracking of mud onto right-of-way, provide wheel washing area out of direct traffic lane, with drain into sediment trap or basin.
- C. Linear Sediment Barriers: Made of silt fences.
1. Provide linear sediment barriers:
 - a. Along downhill perimeter edge of disturbed areas, including soil stockpiles.
 - b. Along the top of the slope or top bank of drainage channels and swales that traverse disturbed areas.
 - c. Along the toe of cut slopes and fill slopes.
 - d. Perpendicular to flow across the bottom of existing and new drainage channels and swales that traverse disturbed areas or carry runoff from disturbed areas; space at maximum of 200 feet apart (at maximum of 60 m apart).
 - e. Across the entrances to culverts that receive runoff from disturbed areas.
 2. Space sediment barriers with the following maximum slope length upslope from barrier:
 - a. Slope of Less Than 2 Percent: 100 feet (30 m)..
 - b. Slope Between 2 and 5 Percent: 75 feet (23 m).
 - c. Slope Between 5 and 10 Percent: 50 feet (15 m).
 - d. Slope Between 10 and 20 Percent: 25 feet (7.5 m).
 - e. Slope Over 20 Percent: 15 feet (4.5 m).
- D. Storm Drain Curb Inlet Sediment Trap: Protect each curb inlet using one of the following measures:
1. Filter fabric wrapped around hollow concrete blocks blocking entire inlet face area; use one piece of fabric wrapped at least 1-1/2 times around concrete blocks and secured to prevent dislodging; orient cores of blocks so runoff passes into inlet.
 2. Straw bale row blocking entire inlet face area; anchor into pavement.

- E. Storm Drain Drop Inlet Sediment Traps: As detailed on drawings.
- F. Temporary Splash Pads: Stone aggregate over filter fabric; size to suit application; provide at downspout outlets and storm water outlets.
- G. Soil Stockpiles: Protect using one of the following measures:
 - 1. Cover with polyethylene film, secured by placing soil on outer edges.
 - 2. Cover with mulch at least 4 inches (100 mm) thickness of pine needles, sawdust, bark, wood chips, or shredded leaves, or 6 inches (150 mm) of straw or hay.
- H. Mulching: Use only for areas that may be subjected to erosion for less than 6 months.
 - 1. Asphalt: Use only where no traffic, either vehicular or pedestrian, is anticipated.
- I. Temporary Seeding: Use where temporary vegetated cover is required.

3.04 INSTALLATION

- A. Traffic-Bearing Aggregate Surface:
 - 1. Excavate minimum of 6 inches (150 mm).
 - 2. Place geotextile fabric full width and length, with minimum 12 inch (300 mm) overlap at joints.
 - 3. Place and compact at least 6 inches (150 mm) of 1 1/2 to 3 1/2 inch (40 to 90 mm) diameter stone.
- B. Silt Fences:
 - 1. Store and handle fabric in accordance with ASTM D4873/D4873M.
 - 2. Where slope gradient is less than 3:1 or barriers will be in place less than 6 months, use nominal 16 inch (405 mm) high barriers with minimum 36 inch (905 mm) long posts spaced at 6 feet (1830 mm) maximum, with fabric embedded at least 4 inches (100 mm) in ground.
 - 3. Where slope gradient is steeper than 3:1 or barriers will be in place over 6 months, use nominal 28 inch (710 mm) high barriers, minimum 48 inch (1220 mm) long posts spaced at 6 feet (1830 mm) maximum, with fabric embedded at least 6 inches (150 mm) in ground.
 - 4. Where slope gradient is steeper than 3:1 and vertical height of slope between barriers is more than 20 feet (6 m), use nominal 32 inch (810 mm) high barriers with woven wire reinforcement and steel posts spaced at 4 feet (1220 mm) maximum, with fabric embedded at least 6 inches (150 mm) in ground.
 - 5. Install with top of fabric at nominal height and embedment as specified.
 - 6. Embed bottom of fabric in a trench on the upslope side of fence, with 2 inches (50 mm) of fabric laid flat on bottom of trench facing upslope; backfill trench and compact.
 - 7. Do not splice fabric width; minimize splices in fabric length; splice at post only, overlapping at least 18 inches (460 mm), with extra post.
 - 8. Fasten fabric to wood posts using one of the following:
 - a. Four nails per post with 3/4 inch (19 mm) diameter flat or button head, 1 inch (25 mm) long, and 14 gauge, 0.083 inch (2.11 mm) shank diameter.
 - b. Five staples per post with at least 17 gauge, 0.0453 inch (1.150 mm) wire, 3/4 inch (19 mm) crown width and 1/2 inch (12 mm) long legs.
 - 9. Fasten fabric to steel posts using wire, nylon cord, or integral pockets.
 - 10. Wherever runoff will flow around end of barrier or over the top, provide temporary splash pad or other outlet protection; at such outlets in the run of the barrier, make barrier not more than 12 inches (300 mm) high with post spacing not more than 4 feet (1220 mm).
- C. Straw Bale Rows:
 - 1. Install bales in continuous rows with ends butting tightly, with one bale at each end of row turned uphill.
 - 2. Install bales so that bindings are not in contact with the ground.
 - 3. Embed bales at least 4 inches (100 mm) in the ground.

4. Anchor bales with at least two stakes per bale, driven at least 18 inches (450 mm) into the ground; drive first stake in each bale toward the previously placed bale to force bales together.
 5. Fill gaps between ends of bales with loose straw wedged tightly.
 6. Place soil excavated for trench against bales on the upslope side of the row, compacted.
- D. Temporary Seeding:
1. When hydraulic seeder is used, seedbed preparation is not required.
 2. When surface soil has been sealed by rainfall or consists of smooth undisturbed cut slopes, and conventional or manual seeding is to be used, prepare seedbed by scarifying sufficiently to allow seed to lodge and germinate.
 3. If temporary mulching was used on planting area but not removed, apply nitrogen fertilizer at 1 pound per 1000 sq ft (0.5 kg per 100 sq m).
 4. On soils of very low fertility, apply 10-10-10 fertilizer at rate of 12 to 16 pounds per 1000 sq ft (6 to 8 kg per 100 sq m).
 5. Incorporate fertilizer into soil before seeding.
 6. Apply seed uniformly; if using drill or cultipacker seeders place seed 1/2 to 1 inch (12 to 25 mm) deep.
 7. Irrigate as required to thoroughly wet soil to depth that will ensure germination, without causing runoff or erosion.
 8. Repeat irrigation as required until grass is established.

3.05 MAINTENANCE

- A. Inspect preventive measures weekly, within 24 hours after the end of any storm that produces 0.5 inches (13 mm) or more rainfall at the project site, and daily during prolonged rainfall.
- B. Repair deficiencies immediately.
- C. Silt Fences:
 1. Promptly replace fabric that deteriorates unless need for fence has passed.
 2. Remove silt deposits that exceed one-third of the height of the fence.
 3. Repair fences that are undercut by runoff or otherwise damaged, whether by runoff or other causes.
- D. Straw Bale Rows:
 1. Promptly replace bales that fall apart or otherwise deteriorate unless need has passed.
 2. Remove silt deposits that exceed one-half of the height of the bales.
 3. Repair bale rows that are undercut by runoff or otherwise damaged, whether by runoff or other causes.
- E. Clean out temporary sediment control structures weekly and relocate soil on site.
- F. Place sediment in appropriate locations on site; do not remove from site.

3.06 CLEAN UP

- A. Remove temporary measures after permanent measures have been installed, unless permitted to remain by Owner.
- B. Clean out temporary sediment control structures that are to remain as permanent measures.
- C. Where removal of temporary measures would leave exposed soil, shape surface to an acceptable grade and finish to match adjacent ground surfaces.

END OF SECTION

**SECTION 015813
TEMPORARY PROJECT SIGNAGE**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Project identification sign.
- B. Project informational signs.

1.02 RELATED REQUIREMENTS

- A. Section 011000 - Use of Premises: Responsibility to provide signs.

1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Shop Drawing: Show content, layout, lettering, color, foundation, structure, sizes and grades of members.

PART 2 PRODUCTS

2.01 SIGN MATERIALS

- A. Structure and Framing: New, wood, structurally adequate.
- B. Sign Surfaces: Exterior grade plywood with medium density overlay, minimum 3/4 inch (19 mm) thick, standard large sizes to minimize joints.
- C. Rough Hardware: Galvanized.
- D. Paint and Primers: Exterior quality, two coats; sign background of color as selected.
- E. Lettering: Exterior quality paint, colors as selected.
- F. Lettering: Pre-cut vinyl self-adhesive products, colors as selected .

2.02 PROJECT IDENTIFICATION SIGN

- A. One painted sign of construction, design, and content indicated on drawings, location designated.
- B. Content:
 - 1. Project number, title, logo and name of Owner as indicated on Contract Documents.
 - 2. Names and titles of authorities.
 - 3. Names and titles of Architect/Engineer and Consultants.
 - 4. Name of Construction Manager.
- C. Graphic Design, Colors, Style of Lettering: Designated by TMP Architecture, Inc.

2.03 PROJECT INFORMATIONAL SIGNS

- A. Painted informational signs of same colors and lettering as Project Identification sign, or standard products; size lettering to provide legibility at 100 foot (30 m) distance.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install project identification sign within 30 days after date fixed by Notice to Proceed.
- B. Erect at designated location.
- C. Erect supports and framing on secure foundation, rigidly braced and framed to resist wind loadings.
- D. Install sign surface plumb and level, with butt joints. Anchor securely.
- E. Paint exposed surfaces of sign, supports, and framing.

3.02 MAINTENANCE

- A. Maintain signs and supports clean, repair deterioration and damage.

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3.03 REMOVAL

- A. Remove signs, framing, supports, and foundations at completion of Project and restore the area.

END OF SECTION

**SECTION 017000
EXECUTION AND CLOSEOUT REQUIREMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Requirements for alterations work, including selective demolition.
- C. Pre-installation meetings.
- D. Cutting and patching.
- E. Surveying for laying out the work.
- F. Cleaning and protection.
- G. Starting of systems and equipment.
- H. Demonstration and instruction of Owner personnel.
- I. Closeout procedures, including 's TMP Architecture, Inc and Barton Malow Builders Correction Punch List, except payment procedures.
- J. General requirements for maintenance service.

1.02 RELATED REQUIREMENTS

- A. Section 011000 - Use of Premises: Limitations on working in existing building; continued occupancy; work sequence; identification of salvaged and relocated materials.
- B. Section 013000 - Administrative Requirements: Submittals procedures, Electronic document submittal service.
- C. Section 014000 - Quality Requirements: Testing and inspection procedures.
- D. Section 017123 - Field Engineering and Layout: Additional requirements for field engineering and surveying work.
- E. Section 017419 - Construction Waste Management and Disposal: Additional procedures for trash/waste removal, recycling, salvage, and reuse.
- F. Section 017610 - Temporary Protective Coverings: Materials for protection of installed work.
- G. Section 017800 - Closeout Submittals: Project record documents, operation and maintenance data, warranties, and bonds.
- H. Section 017900 - Demonstration and Training: Demonstration of products and systems to be commissioned and where indicated in specific specification sections
- I. Section 019113 - General Commissioning Requirements: Barton Malow Builders' responsibilities in regard to commissioning.
- J. Section 078400 - Firestopping.

1.03 DEFINITIONS

- A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.
- C. Close-out is the process of organizing the general project requirements near the end of contract time to evidence the completion of the Work. The time of close-out directly relates to completion of the project. It can either be a single time period for the entire Work, or a series of time periods for individual parts of the Work, which have been certified as Complete at different dates.
- D. **Substantial completion** means that all applicable work:
 - 1. Is sufficiently complete and fully usable in accordance with Owner's master agreement.

2. Can be fully utilized and/or operated by Owner for its intended use, and
3. Complies with the applicable scope of work except for the applicable punch list.

E. **Final Acceptance** shall mean that date upon which all close-out documentation and work, including, without limitation, all punch list items and closeout submittals, have been fully completed in accordance with the applicable scope of work.

1.04 REFERENCE STANDARDS

- A. AIA G702 - Application and Certificate for Payment 1992.
- B. AIA G703 - Continuation Sheet 1992.
- C. AIA G704 - Certificate of Substantial Completion 2017.
- D. AIA G707 - Consent of Surety to Final Payment 1994.
- E. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations 2019.

1.05 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Survey work: Submit name, address, and telephone number of Surveyor before starting survey work.
 1. On request, submit documentation verifying accuracy of survey work.
 2. Submit a copy of site drawing signed by the Land Surveyor, that the elevations and locations of the work are in compliance with Contract Documents.
 3. Submit surveys and survey logs for the project record.
- C. Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.
 1. Indicate extent of demolition, removal sequence, bracing and shoring, and location and construction of barricades and fences. Include design drawings and calculations for bracing and shoring.
 2. Identify demolition firm and submit qualifications.
 3. Include a summary of safety procedures.
- D. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
 1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
 2. Changes to Existing Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
 3. Products: List products to be used and firms or entities that will perform the Work.
 4. Dates: Indicate when cutting and patching will be performed.
 5. Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted.
 6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
 7. Effect on work of Owner, Barton Malow Builders or separate Contractors.
 - a. Written permission of affected separate Contractor.
 - b. Date and time work will be executed.
- E. Project Record Documents: Accurately record actual locations of capped and active utilities.

1.06 QUALIFICATIONS

- A. For demolition work, employ a firm specializing in the type of work required.
- B. For surveying work, employ a land surveyor registered in Michigan and acceptable to TMP Architecture, Inc. Submit evidence of surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate. Employ only individual(s) trained and experienced in collecting and recording accurate data relevant to ongoing construction activities,

- C. For field engineering, employ a professional engineer of the discipline required for specific service on Project, licensed in Michigan. Employ only individual(s) trained and experienced in establishing and maintaining horizontal and vertical control points necessary for laying out construction work on project of similar size, scope and/or complexity.
- D. For design of temporary shoring and bracing, employ a Professional Engineer experienced in design of this type of work and licensed in Michigan.

1.07 PROJECT CONDITIONS

- A. Use of explosives is not permitted.
- B. The use of gasoline powered equipment is prohibited in enclosed spaces on this Project.
- C. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- D. Perform dewatering activities, as required, for the duration of the project.
- E. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- F. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property. Activities that require dust control include but are not limited to the following: demolition, cutting, grinding, and preparation operations.
- G. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
 - 1. At All Times: Excessively noisy tools and operations will may be tolerated in or adjacent to occupied buildings at any time of day; excessively noisy includes jackhammers. Include premium time to complete work off hours.
- H. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

1.08 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
 - 1. Obtain approval of the cutting and patching proposal before cutting and patching the following structural elements:
 - a. Foundation construction.
 - b. Bearing and retaining walls.
 - c. Structural concrete.
 - d. Structural steel.
 - e. Lintels.
 - f. Stair systems.
 - g. Miscellaneous structural metals.
 - 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
 - a. Obtain approval of the cutting and patching proposal before cutting and patching the following operating elements or safety related systems:
 - 1) Primary operational systems and equipment.
 - 2) Air or smoke barriers.
 - 3) Fire-protection systems.
 - 4) Mechanical systems piping and ducts.
 - 5) Control systems.
 - 6) Communication systems.
 - 7) Conveying systems.
 - 8) Electrical wiring systems.
 - 9) Operating systems of special construction in Division 13 Sections.

- 10) Electronic security systems.
3. Miscellaneous Elements: Do not cut and patch the following elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
 - a. Obtain approval of the cutting and patching proposal before cutting and patching the following elements:
 - 1) Water, moisture, or vapor barriers.
 - 2) Membranes and flashings.
 - 3) Exterior windows, entrances, and storefronts.
 - 4) Equipment supports.
 - 5) Piping, ductwork, vessels, and equipment.
 - 6) Noise- and vibration-control elements and systems.
4. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
5. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades as well as Barton Malow Builders. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.09 COORDINATION

- A. All Contractors are required to review, discuss and coordinate their Work with the Work of other Contractors, Subordinate Parties, Owner and Barton Malow Builders with regard to sequence, timing, built-in Work and equipment, layout, location, compatibility of materials and sizes and required clearances prior to beginning the work to avoid construction delays which impact the Owner's occupancy of the facility.
- B. Each Contractor must:
 1. Coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.
 2. Make provisions to accommodate items scheduled for later installation..
 3. Layout and install its Work at such time and in such manner as not to delay or interfere with the carrying forward of the Work of others.
 4. Verify and Accept previous work
 - a. As Work under each Agreement commences, the condition of preceding Work under other agreements shall be verified and accepted by each subsequent Contractor when appropriate.
 - b. Report in a prompt manner any interferences, discrepancies or incompatibilities discovered to Barton Malow Builders and Architect/Engineer, whose decision as to the Contractor at fault and as to the manner in which the matter may be resolved, shall be binding and conclusive on Contractors involved. Barton Malow Builders and Architect/Engineer may direct layout/ location changes as required to make the entire work fit together. Reasonable changes of this nature will not entitle any Contractor to an increase in contract price.
 - c. Verification may, at Barton Malow Builders and Architect/Engineer 's discretion, include a joint review by the subsequent Contractor, previous contractor(s), and Architect/Engineer to note any corrective Work required, similar items affecting the Work and particularly items which prevent acceptance by the subsequent contractors.
 - d. The verification review procedures and findings shall be submitted in writing by subsequent Contractors to Barton Malow Builders.
 - e. Any corrective work necessary to satisfy requirements of the Contract Documents shall be performed promptly by the previous Contractor to prevent delay to the work under the subsequent Contracts.

- f. After corrective work is accomplished the subsequent Contractor shall furnish written acceptance of the work as noted above.
- C. Observation of the Work by others shall not relieve Contractor from its responsibility for coordination, supervision, or scheduling and direction of the Work.
- D. Failure of a Contractor to notify others and Barton Malow Builders and Architect/Engineer of a potential interference, incompatibility, or discrepancy and any failure to coordinate Work with that of others prior to installation and/or fabrication shall be at the Contractor's risk.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

- A. General: Comply with requirements specified in other Sections of these Specifications
- B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials. For any proposed change in materials, submit request for substitution described in Section 012500 - Substitution Procedures.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or mis fabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed. Report any unsatisfactory or questionable conditions to Barton Malow Builders in writing.
 - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.
- G. When working in and around existing buildings, if any hazardous material is encountered or is suspected to be present, immediately notify Barton Malow Builders and stop work in this area until further direction is given by Barton Malow Builders or the Owner.

3.02 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.
- D. Provide adequate temporary support to assure the structural value and integrity of the affected portion of the work. Where specified or required, submit temporary support methodologies for approval.
- E. Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

- F. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas during cutting & patching activities.
- G. Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to avoid interruption of services to occupied areas.
- H. Maintain excavations free of water.

3.03 PREINSTALLATION MEETINGS

- A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific section.
- C. Notify Architect/Engineer and Barton Malow Builders 7 days in advance of meeting date.
- D. Prepare agenda and preside at meeting:
 - 1. Review conditions of examination, preparation and installation procedures.
 - 2. Review coordination with related work.
- E. Record minutes and distribute copies within 2 days after meeting to participants, with 1 copies to Architect/Engineer, Owner, participants, and those affected by decisions made.

3.04 LAYING OUT THE WORK

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify Architect/Engineer Barton Malow Builders and Architect/Engineer of any discrepancies discovered.
- C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- D. Promptly report to Architect/Engineer and Barton Malow Builders the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- E. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect/Engineer and Barton Malow Builders.
- F. Utilize recognized engineering survey practices.
- G. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
 - 1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
 - 2. Grid or axis for structures.
 - 3. Building foundation, column locations, ground floor elevations.
- H. Periodically verify layouts by same means.
- I. Maintain a complete and accurate log of control and survey work as it progresses.
- J. On completion of foundation walls and major site improvements, prepare a certified survey illustrating dimensions, locations, angles, and elevations of construction and site work.

3.05 GENERAL INSTALLATION REQUIREMENTS

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

3.06 ALTERATIONS

- A. Drawings showing existing construction and utilities are based on existing record documents only.
 - 1. Verify that construction and utility arrangements are as indicated.
 - 2. Report discrepancies to Architect/Engineer and Barton Malow Builders before disturbing existing installation.
 - 3. Beginning of alterations work constitutes acceptance of existing conditions.
- B. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
 - 1. Where openings in exterior enclosure exist, provide construction to make exterior enclosure weatherproof.
 - 2. Insulate existing ducts or pipes that are exposed to outdoor ambient temperatures by alterations work.
- C. Remove existing work as indicated and as required to accomplish new work.
 - 1. Remove items indicated on drawings.
 - 2. Relocate items indicated on drawings.
 - 3. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
 - 4. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.
- D. Services (Including but not limited to): Remove, relocate, and extend existing systems to accommodate new construction.
 - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
 - 2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
 - 3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 - a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
 - b. Provide temporary connections as required to maintain existing systems in service.
 - 4. Verify that abandoned services serve only abandoned facilities.
 - 5. Remove abandoned pipe, ducts, conduits, and equipment , including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.
- E. Protect existing work to remain.
 - 1. Prevent movement of structure; provide shoring and bracing if necessary.
 - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 - 3. Repair adjacent construction and finishes damaged during removal work.
- F. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
- G. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.
- H. Refinish existing surfaces as indicated:
 - 1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.

2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.
- I. Clean existing systems and equipment.
- J. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.
- K. Do not begin new construction in alterations areas before demolition is complete.
- L. Comply with all other applicable requirements of this section.

3.07 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. See Alterations article above for additional requirements.
- C. Each Contractor shall:
 1. On behalf of itself and its Subordinate Parties be responsible for the cutting of all holes and openings through existing walls, partitions, ceilings, floors and roofs as necessary for the installation of its Work. Holes and openings shall be neatly cut and of minimum size to allow the Work to be installed. Execute cutting and demolition by methods which will prevent damage to other Work, and will provide proper surfaces to receive installation of repairs.
 2. Execute work in such a manner as to minimize disruptions to or interference with the Owner's normal operations or functioning in the existing buildings and provide all means necessary to provide safety and convenience of those employed in and about the premises.
 3. Be responsible for patching of all holes and openings it makes. Fit work should be airtight to pipes, sleeves, ducts, conduit and other penetrations through surfaces. Patching is to match adjacent surfaces in materials and finish.
 4. Utilize only tradesmen skilled in the specific finish and material involved in making the patches. All patching is to be done in a neat and workmanlike manner to the satisfaction of Barton Malow Builders. Defective Work shall be corrected at no cost to the Owner and Barton Malow Builders.
 5. Do all necessary cutting and fitting required to make a satisfactory connection where new Work connects with existing so as to leave the entire Work in finished and workmanlike condition. Furnish all labor and materials to this end, whether or not shown or specified. All measurements must be verified at the site.
 6. Employ the original installer and fabricator, when possible, to perform cutting and patching for, weather-exposed or moisture-resistant elements, sight-exposed finished surfaces.
 7. Execute fitting and adjustment of products to provide a finished installation to comply with the specified products, functions, tolerances and finishes.
 8. Restore Work which has been cut or removed and shall install new products to provide completed Work in accordance with the Contract Documents. Each Contractor will be responsible to pay the appropriate Contractor as designated by Barton Malow Builders for restoring any portion of the Project that is disturbed, including but not limited to, landscaping, slabs, walls, ceilings, fire-rated partitions, spray-on fireproofing, and finishes, to their original state as a result of Contractor's action.
 9. Be held responsible for reckless cutting of holes in slabs, walls or other finishes, or for scraping off areas of fireproofing larger or greater than that which is necessary for installation of its Work.
- D. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- E. Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
- F. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements

retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 3. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with all required codes and Contract Documents.
 4. Concrete or Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 5. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
 6. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 7. Proceed with patching after construction operations requiring cutting are complete.
- G. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken
 4. Ceilings: Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.
 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
- H. Thoroughly clean areas and spaces where cutting and patching is performed or used as access. Remove completely paint, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finishing is applied. Restore damaged pipe covering to its original condition.
- I. Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

3.08 SITE CLEAN-UP/RUBBISH REMOVAL PROCEDURE

- A. An effective and efficient clean-up procedure on the Project site contributes to both the productivity and safety of all those involved. The following requirements are intended to provide a satisfactory and equitable method to manage and accomplish project clean up.
- B. General:
 1. Each Contractor shall be responsible for daily, weekly and final clean-up of its Work and the work of its Subordinate Parties. The cost of this requirement shall be included in the Contractor's Bid Proposal. Contractor is required to comply with applicable labor

agreements and jurisdictional rules in the hiring of laborers to perform its clean up obligations under the Contract Documents. Each Contractor will be responsible for control of dust generated by its operations on a daily basis. Roadways must be maintained clear of all debris at all times. Contractors shall only use cleaning materials which will not create hazards to health or property and which will not damage surfaces. Only those cleaning materials and methods recommended by the manufacturer of the surface material to be cleaned shall be used. Any sweeping compounds used in cleaning operations shall not leave residue on concrete floor surfaces that may affect installation of finish flooring materials

C. Daily Clean Up:

1. Each Contractor shall be responsible, DAILY for the clean -up, transport and removal from the site of identifiable debris including but not limited to, bulky debris, packaging, containers, unused materials and equipment, (i.e., masonry and concrete materials, drywall, steel, crates, carton, demolition debris, other packaging, and combustible items). No piles of debris shall be left in the building overnight. The cost of any overtime premium required to remove debris immediately at the end of each workday shall be included in the Contractor's Base Bid.
2. Each Contractor must handle materials in a controlled manner during clean-up and all other operations so that dust and other contaminants resulting from the cleaning or disposal process will not affect the Owner's operations or equipment or the work or equipment of any other Contractor on the site. Each Contractor is responsible to leave its Work and work area in a clean condition. This includes, but is not limited to, removal of all grease, dust, dirt, stains, labels, fingerprints and other foreign matter.

D. Weekly Clean Up:

1. Each Contractor, while on-site, shall provide to Barton Malow Builders one (1) person for each five tradesmen (or portion thereof) employed at the site, one day per week, for up to eight (8) hours, for the exclusive purpose of performing overall project weekly clean-up of unidentifiable debris. The cost of this (these) person(s) shall be included in Contractor's bid. The weekly clean-up Work shall include sweeping, loading and disposal of miscellaneous debris such as mud tracked through the building, drinking cups, bottles, lunch wrappers, and other unidentifiable debris. Trash and debris from this operation shall be placed in the dumpster(s) provided by Barton Malow Builders.
2. Each Contractor shall furnish sweeping compound to hold down dust during the weekly clean up.

E. Use of Owner's Facilities

1. The Owner's facilities are not to be used by Contractor for the disposal of trash or debris from its Work.

F. Failure to perform Clean Up:

1. If any Contractor or its Subordinate Parties fails to maintain a satisfactory clean-up program, Barton Malow Builders will issue written notice, to the responsible Contractor, that the necessary clean-up must be performed within 24 hours after the notice is given. The establishment of a definite deadline for the removal of debris and rubbish will supersede the necessity for any formal notification that such work must be done. If Contractor(s) fail to perform the clean-up, by the deadline, Barton Malow Builders may perform clean-up on the Project and back charge the responsible Contractor(s) for the costs. If necessary in order to remove unidentifiable debris beyond what is removed during weekly clean up, Barton Malow Builders will perform such clean-up and shall pro-rate the cost among the Contractors in its discretion, based on Contractor(s) type of work and manpower on site. Back charges may be deducted from the monthly invoices of the Contractor(s) and/or final payment.

3.09 PROTECTION OF INSTALLED WORK

- A. See Section 017610 for temporary protective covering materials.
- B. Protect installed work from damage by construction operations.

- C. Provide special protection where specified in individual specification sections.
- D. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- E. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- F. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- G. Protect work from spilled liquids. If work is exposed to spilled liquids, immediately remove protective coverings, dry out work, and replace protective coverings.
- H. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- I. Prohibit traffic from landscaped areas.
- J. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.
- K. Removal and replacement of ceilings not scheduled to be replaced shall be the responsibility of the Contractor requiring access.

3.10 SYSTEM STARTUP

- A. Coordinate with requirements of Section 019113 - General Commissioning Requirements.
- B. Coordinate schedule for start-up of various equipment and systems.
- C. Notify Architect, Barton Malow Builders and Owner seven days prior to start-up of each item.
- D. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.
- E. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- F. Verify that wiring and support components for equipment are complete and tested.
- G. Execute start-up under supervision of applicable Troy School District, Barton Malow Builders personnel and manufacturer's representative in accordance with manufacturers' instructions.
- H. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.
- I. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.11 DEMONSTRATION AND INSTRUCTION

- A. See Section 017900 - Demonstration and Training.
- B. Demonstrate operation and maintenance of products to Owner's personnel 2 weeks prior to date of Substantial Completion.
- C. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.
- D. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- E. Utilize approved operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.

- F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.
- G. The amount of time required for instruction on each item of equipment and system is that specified in individual sections.

3.12 ADJUSTING

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

3.13 FINAL CLEANING

- A. Owner will provide comprehensive cleaning after final acceptance.
- B. All Contractors shall be responsible for the following final cleaning operations at a time designated by Barton Malow Builders. Normally, Final Clean Up will occur before punch list inspection or prior Owner Occupancy turnover. Final Cleaning consists of the following Work:
 - 1. Removal of grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and all other foreign materials from sight-exposed interior and exterior surfaces.
 - 2. Temporary labels, stickers and similar items shall be removed from fixtures and equipment. Unless otherwise directed in the technical specifications, Subcontractors shall not remove permanent nameplates, equipment model numbers, ratings, or other items intended to be permanently affixed to the fixture or equipment.
 - 3. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
 - 4. Clean filters of operating equipment.
 - 5. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, drainage systems, and landscape areas.
 - 6. Broom cleaning exterior paved surfaces and raking clean other surfaces of the grounds.
 - 7. Tunnels and closed off spaces shall be cleaned of packing boxes, wood frame members and other waste materials used in the construction.
 - 8. Prior to final completion or Owner occupancy, whichever occurs first, Contractor shall conduct an inspection of sight-exposed interior and exterior surfaces, and all Work areas, to verify that the entire Work is left in a broom clean condition and that all Final Cleaning as set forth above has been performed.

3.14 CLOSEOUT PROCEDURES

- A. The following procedure and forms will be used to sequentially progress through the contract close-out stage in a productive and timely manner.
 - 1. Step 1: Preparation for Contract Close-Out
 - a. During the course of the Project, the Contractor will thoroughly review the Contract Documents as it relates to the requirements and obligations and gather and submit to Barton Malow Builders the proper submittals, shop drawings, material certifications, waivers, certificates of insurance, bonds, and other contractual requirements impacting contract close-out as outlined in 017800 - Closeout Submittals.
 - b. Evidence of compliance with requirements of governing authorities (state, local or federal).
 - c. Evidence of Payment and Release of Liens: Refer to requirements of Section 012000 - Price and Payment Procedures.
 - 2. Step 2: Initiating the Final Close-Out Process
 - a. When nearing 75% completion of the Work, the Contractor will review the status of the Close-Out process with Barton Malow Builders. The Contractor's contractual responsibilities will be reviewed and outstanding close-out and other submittals identified.
 - 3. Step 3: Obtaining the Certificate of Substantial Completion
 - a. As the Contractor is nearing the completion of the Work and after concurrence with Barton Malow Builders, it shall submit a written request for Substantial

- Completion, all required documentation as outlined, and a listing of all minor deficiencies yet to be completed.
- b. The following documents are the minimum required at the time of request for Substantial Completion. Contractor shall also submit all additional documentation as required in the Contract Documents:
 - 1) AIA G704 Certificate of Substantial Completion
 - 2) As-built records (see Section 017800 - Closeout Submittals)
 - 3) Architect/Engineer approved Operation and Maintenance Manuals (see Section 017800 - Closeout Submittals). Typically, all O&M manuals will be submitted to the Owner at 75% completion of the project prior to acceptance of equipment systems or building occupancy.
 - 4) Keys, Maintenance Stock, and Spare Parts - quantities as required in the specifications
 - 5) Test and Start-up/Owner Training Sessions (see Section 017900 - Demonstration and Training)
 - 6) Submission of Permits and Approvals (i.e., Fire Marshal, Department of Public Health Approvals, etc.)
 - 7) Guarantee and Warranties (see Section 017800 - Closeout Submittals)
 - 8) Punchlist (list of work to be completed or corrected). Contractors should account for multiple work to complete lists and punch lists.
 - c. Once Barton Malow Builders has received all required documents they will be forwarded to the Architect and Owner. Barton Malow Builders will review the Contractor's request for Substantial Completion; all above documentation, and list of deficiencies, add appropriate comments, and forward to the Architect and/or Owner for review. In conjunction with the Contractor, Barton Malow Builders will establish a schedule for the completion of all listed items, which in no event shall exceed any time periods established in the Contract Documents for Final Completion.
 - d. When the Architect and/or Owner determine(s) that the Work is substantially complete, the Certificate of Substantial Completion shall be issued to the Contractor.
4. Step 4: Contractor Completes Punchlist Work
- a. Each Contractor shall submit a signed off punch list by item and letter certifying all punch list items are completed, in a manner acceptable to the Owner, Barton Malow Builders and the Architect.
 - b. All punch list items must be completed within 14 days of issuing, unless otherwise approved by Barton Malow.
 - c. Process and steps that need to be taken by Contractor in order to have items reviewed/completed in Autodesk Build can be found in - Autodesk Build Manual. The punch list/work to complete list can be found under the "Issues" category.
5. Step 5: Final Inspection Notice
- a. Each Contractor is to forward (**written notice and accompanying documentation**) to Barton Malow Builders that Work is ready for final inspection and acceptance. Barton Malow Builders will forward written notice to the Architect if Barton Malow Builders is in agreement that Work is complete. The Architect will perform a final inspection and sign off on the punch list form if Work is in fact completed. If punch list work is not found complete, the Contractor shall take action to remedy any insufficiencies and then shall re-submit the written notice and accompanying documentation that Work is ready for **final** inspection and acceptance. If Barton Malow Builders and/or Architect are required to perform more than 2 site visits to determine Substantial or Final Completion of Contractor's Work, the costs for such additional inspections shall be back charged to Contractor.
 - b. The following documents are the minimum required to complete final payment. Contractor shall also submit all additional documentation as required in the Contract Documents:

- 1) Final Payment Request (AIA G702 & AIA G703).
 - 2) Guarantees/Warranties (including subs and suppliers).
 - 3) Final Sworn Statements (including subs and suppliers).
 - 4) Acknowledgment of Payment and Partial Unconditional Release
 - 5) Final Unconditional Waiver Release Subcontractor/Material
 - 6) Certified Payroll Report
 - 7) MBE participation with final accounting and compliance.
 - 8) Consent of Surety Company to Final Payment (AIA G707)
 - 9) Consent of Surety to Reduction or Partial Release of Retainage (AIA G707 A)
 - 10) Certificate of Substantial Completion (AIA G704).
 - 11) Completion of all closeout.
 - 12) Completion and acceptance of all punch list work and commissioning items .
 - 13) Contact Information.
 - 14) Proof of transmission of all spare parts, attic stock, and O&M Manuals.
 - 15) Items 2 through 8 must always be submitted with the final request for payment.
6. Step 6: Review of Final Payment
- a. Barton Malow Builders and the Architect will review the Contractor's final payment request and Close-Out file. Barton Malow Builders reserves the right to withhold 20% of the estimated cost for each punch list item not completed until complete. If all administrative documents are attached or have been submitted (i.e. guarantee, warranty, waiver of lien, etc.), all Work is complete, and all other responsibilities are met, the Project Team will forward the Contractor's Application for Final Payment to the Owner and payment shall be processed according to the Owner's regular procedures.

3.15 MAINTENANCE

- A. Provide service and maintenance of components indicated in specification sections.
- B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.
- C. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
- E. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

END OF SECTION

**SECTION 017120
ON-SITE PROJECT SAFETY**

PART 1 – GENERAL

1.01 SECTION INCLUDES:

- A. Contractor's Safety Requirements
- B. Contractor's Safety Submittals
- C. Barton Malow Builders Rights
- D. Safety Related Forms
- E. Hazardous Materials
- F. Infection Control
- G. Other Safety Requirements
- H. Substance Abuse Testing Program
- I. Interim Life Safety Plan

1.02 RELATED DOCUMENTS

- A. Attention is directed to Bidding, Contract and General Requirements, which are hereby made a part of this Section.

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION

3.01 CONTRACTOR'S SAFETY REQUIREMENTS

- A. General
 - 1. Contractor is responsible for its own Safety Program for Work on this Project that is at least as stringent as the requirements set forth in this section of the Project Manual and/or Barton Malow Builders safety manual.
 - 2. Contractor shall provide a safe workplace and shall otherwise take all precautions for the safety of Subordinate Parties and persons and property in or near the premises where Work is being performed.
 - 3. Contractor shall comply with all applicable federal, state and local laws, rules and regulations, including, but not limited to, applicable provisions of the Occupational Safety and Health Act ("OSHA") and/or the governing state law.
 - 4. Contractor shall comply with all requirements stated in the Site Specific Safety Instructions (SSSI), form or elsewhere in the Contract Documents.
 - 5. Contractor shall ensure that its employees understand and comply with applicable safety and health programs, rules, and regulations.
 - 6. In addition to the requirements set forth in this Section , the Contractor shall comply with all terms, conditions and provisions of all applicable laws.
 - 7. The Contractor shall assign an individual to act as Safety Representative who will have the responsibility of resolving safety matters, and acting as a liaison among Contractor, Barton Malow Builders and the Owner . The Safety Representative must be a person who is capable of identifying existing and predictable hazards in surroundings that are unsanitary, hazardous or dangerous to employees, and has the authority to take prompt corrective measures to eliminate them. The Safety Representative must meet the standards for a Competent Person under applicable law when required (scaffolding, confined spaces, etc.) and be on site full time. The Safety Representative or an alternate must attend periodic safety meetings as directed by Barton Malow Builders and; as a minimum, possess an OSHA 500 certificate.
 - 8. Contractor, through its site supervisors and/or Safety Representative, shall attend a pre-construction meeting where planning for safe execution of the project will be addressed.
 - 9. Contractor is fully responsible for all Hazardous Materials it creates or releases in connection with, or brings to, the Project. Contractor shall immediately report to Barton

Malow Builders any Hazardous Materials that it discovers or which are released at the Project.

10. Minimum training for on-site employees shall include basic safety orientation, site specific orientation, task-specific safety instruction, weekly Tool Box Talks, and other periodic safety meetings. Contractor shall document all such training. Onsite Contractor supervision shall have completed OSHA-30 training.
 11. Contractor shall self-inspect its areas of control to assure compliance with the safety requirements.
 12. All on-site employees of either Contractor or its Subordinate Parties are required to report any unsafe act or condition and any work-related injuries or illness immediately to a supervisor. If the act or condition can be safely and easily corrected, the employee or supervisor shall make the correction. All on-site employees have the obligation to stop any or all work in the event it may lead to injury or incident.
 13. Contractor shall notify the Barton Malow Builders project leadership immediately of all injuries or incidents. Contractor will also be required to fill out a safety incident report along with witness reports available in the Barton Malow Builders Safety Manual or BIM 360 Templates.
 14. Contractor shall have emergency procedures to deal with the immediate removal and treatment, if necessary, of any employee who may be injured or become ill. Contractor shall keep on the Project site a first-aid kit supplied according to current regulations, and shall have on-site a person trained to administer first aid.
 15. Contractor shall inform Barton Malow Builders of the arrival of any federal or state inspector or compliance officer prior to touring the site. Any reports, citations, or other documents related to the inspection shall be provided promptly to Barton Malow Builders .
 16. Contractor shall have a written Substance Abuse Policy. The use or possession of illegal drugs or the use of alcohol while performing Work on the Project are strictly prohibited and may lead to immediate removal from the Project.
 17. Contractor shall be responsible for payment of all safety-related citations, fines and/or claims arising out of or relating to its Work levied against the Owner , Architect/Engineer, Barton Malow Builders , or their employees or affiliates.
 18. Barton Malow Builders has the right to require that Contractor submit monthly its hours worked and incident rates for the Project.
- B. Additional Barton Malow Builders Requirements
1. Work crews shall conduct a Job Hazard Analysis (JHA) discussion to plan for safe performance before beginning any work task. Contractor shall prepare a written record of each JHA.
 2. All workers, management, and visitors shall check into prior to entering the jobsite using the QR code and adhere to the site mask requirements.
 3. All workers, management, and visitors shall wear approved hard hats, safety glasses, safety vest or High Visibility clothing 100% while on site, outside the trailers. All workers will wear gloves specific to work tasks being performed unless they will add additional hazard and potential for injury. All workers, management and visitors will have gloves on their person in the event they are required to use their hands to touch, grasp or move any type of construction material or equipment while onsite. All workers, management, and visitors shall check into the jobsite using the qtr. code and adhere to the site mask mandate. Cowboy-style hard hats are prohibited. Hardhats must not be removed to use welding shields. Welding shields must attach to hardhats or be hand held.
 4. Sleeved shirts (minimum of four inches), long pants (not sweat pants), and durable work boots are required minimum clothing.
 5. Personal radios or music players with earphones are not permitted.
 6. All persons working at elevations of six feet or greater must have 100% continuous fall protection. Engineering controls are preferred, but personal fall arrest systems are also permissible. An exception is permitted for safe use of ladders up to 24 feet long.

7. Prior to removing or modifying any barricade or handrail, Contractor shall request permission from Barton Malow Builders project leadership. Contractor is responsible to repair or restore any barricade that it modifies or removes.
8. Class III (household) stepladders are prohibited; metal ladders are not allowed.
9. All scaffolds must be tagged and checked daily before each use for safety compliance. A green tag will be used for a successfully inspected scaffold and a red tag will be used for any scaffold found to be in an unsafe condition. Scaffolds shall never be left in an unsafe condition and must be removed, disabled or properly assembled immediately.
10. All persons operating cranes must be certified as crane operators by one of 4 testing agencies, NCCCO, NCCER, CIC or OECP. Daily crane inspection reports must be prepared by the operator and kept with the crane, available for inspection.
11. Riding the headache ball is prohibited.
12. All dozers, loaders, tractors and end loader backhoes must have functioning backup alarms.
13. Keep equipment at least 15 feet from energized power lines.
14. Electrical, pneumatic, and other energy systems that could be accidentally energized or started up while work is in process must be locked out (not merely tagged out).
15. Only fire retardant materials may be used to build shanties or other temporary enclosures inside of buildings finished or under construction. Shanties shall be continually policed by their occupants to prevent the accumulation of waste or other combustibles.
16. Engineering controls must be used to restrain silica dust per applicable law.
17. Any cost incurred by corrections made by Barton Malow Builders due to safety violations caused by Contractor shall be back charged to the offending Contractor.

3.02 CONTRACTOR'S SAFETY SUBMITTALS

- A. Contractor shall provide copies of the following written safety submittals to Barton Malow Builders at the times indicated:
 1. Contractor Safety Certificate
 1. Contractor Safety Plan
 1. Site-Specific Safety Information
 1. Contractor Safety Orientation Completion List
 1. Employee CPR Certificates
 1. Employee OSHA-30 Certificates
 1. Employee Aerial Lift Training Certificates
 1. SDS Sheets
 1. []
- B. Barton Malow Builders 's receipt of the Safety Program or other submittals from Contractor does not constitute approval of the Program or submittal or permission to deviate from the requirements of the Contract Documents and applicable law.
- C. Contractor will allow inspection of, and Barton Malow Builders may request copies of, any and all safety-related documents and records in its possession relating to the Project.

3.03 BARTON MALOW BUILDERS RIGHTS

- A. Safety Hazard Notifications may be issued to the Contractor when an unsafe act or condition is reported or observed. Barton Malow Builders shall not be required to supervise the abatement or associated reprimand of unsafe acts or conditions within a Contractor's scope of work as this is solely the responsibility of Contractor. Nevertheless, Barton Malow Builders has the right, but not the obligation, to require Contractor to cease or abate any unsafe practice or activity it notices, at Contractor's sole expense.

- B. Contractor's failure to comply with the contract safety requirements will be considered a default of the Agreement, and may result in remedial action including, but not limited to, withholding of payment of any sums due or termination.
- C. Barton Malow Builders failure to require the submission of any form, documentation, or any other act required under this Section of the Project Manual shall not relieve the Contractor from any of its safety obligations.
- D. Nothing in this Section or in this Agreement makes Barton Malow Builders responsible or liable for protecting Contractor's employees and other Subordinate Parties or assuring or providing for their safety or preventing accidents or property damage.
- E. All requirements referenced in this Section 017120 are binding on Contractor and all of its Subordinate Parties, even where such requirements may exceed the standards of applicable law.

3.04 SAFETY RELATED FORMS

- A. The following safety related forms are in Section 0016001 Forms and Autodesk Build:
 - 1. Contractor Safety Certificate
 - 2. Site-Specific Safety Information

3.05 HAZARDOUS MATERIALS

- A. This Section describes the following requirements including:
 - 1. Definition of Hazardous Materials
 - 2. Awareness of Hazardous Materials
 - 3. Contractor Hazardous Materials Responsibilities
- B. Definition of Hazardous Materials:
 - 1. A "Hazardous Material", as used in this Project Manual means asbestos; asbestos containing material; lead (including lead-based paint); PCB; molds; any other chemical, material, or substance subject to regulation as a hazardous material, hazardous substance, toxic substance, or otherwise, under applicable federal, state, or local law; and any other chemical, material, or substance that may have adverse effects on human health or the environment.
- C. Awareness of Hazardous Materials:
 - 1. Each Contractor shall be constantly aware of the possible discovery of Hazardous Materials. Should Contractor encounter any Hazardous Material or suspected Hazardous Material, the Contractor shall immediately stop Work in the area affected and report the condition to Barton Malow Builders.
- D. If the Contractor encounters any Hazardous Material or suspected Hazardous Material, the Contractor agrees to immediately initiate the required procedures of the Environmental Protection Agency (EPA), and/or state or local agencies having jurisdiction to protect any and all persons exposed to the affected areas or adjacent areas affected thereby.
- E. Contractor is fully responsible for all Hazardous Materials it creates or releases in connection with, or brings to, the Project.
- F. See the General and Supplementary Conditions of the Agreement for further instructions and obligations related to Hazardous Materials.
- G. Each Contractor shall be responsible to bind ALL of its personnel and its Subordinate Parties to the provisions in these paragraphs and to instruct each employee of the of its duty to report any and all suspected Hazardous Materials and to comply with all applicable laws.
- H. No material shall be brought on or to the project site that does not have a manufacturer's label stating contents.
- I. The Contractor shall comply with all applicable federal and state laws, rules, ordinances and regulations regarding transportation, storage, spills, releases and disposal of Hazardous Materials.

- J. No asbestos or asbestos-containing material will be brought to the jobsite or incorporated into the Work by Contractor or its Subordinate Parties.

3.06 OTHER SAFETY REQUIREMENTS

- A. In addition to the requirements listed above, special attention is required to the following for all Contractors:
1. Noise and Vibration – each Contractor shall review the type of equipment or methods of operation in consideration of adjacent occupied areas that could be adversely affected by noise or vibration, and shall use best efforts to minimize any noise or vibration affecting such areas. Coordinate the scheduling of any work causing excessive noise and/or vibration with Barton Malow Builders prior to beginning work.
 2. Water Damage / Leaks Prevention – all Contractors shall pay special attention to any possibility of leaks or water damage due to construction Work and its impact on surrounding occupied areas.
 3. Exhaust & Fumes - for Work involving hazardous fumes including, but not limited to, adhesives, paints/primers, grinding, saw cutting, equipment exhaust, or welding, each Contractor shall review alternate materials or methods of Work that may be required depending on adjacent occupied areas. Construction activity is not permitted within area of existing fresh air intakes.
 4. All of Owner 's security measures must be strictly followed by all Contractors and their Subordinate Parties including, but not limited to, rules about limited construction access at specified doors/entry points, wearing proper identification, and emergency procedures.
 5. All shut-downs for electrical, plumbing, mechanical, fire protection or any other service shall be scheduled with the Owner through Barton Malow Builders at least 72 hours prior to the shut down, and affected occupied areas must be reviewed with the Owner at that time. Should an unscheduled shut-down or interruption of services take place, Barton Malow Builders shall be notified immediately and the Contractor shall be required to remedy the situation immediately and shall review the situation with the Owner and Barton Malow Builders after service is restored.
 6. If modifications to the existing ventilation system are necessary, Contractor shall verify that existing systems as modified can produce the proper air exchange rates and pressure required in critical areas, and that air is not being directly circulated from construction areas into other occupied/patient care areas and shall document such verification to the Owner through Barton Malow Builders.
 7. Contractors are required to review its proposed cleaning techniques for exterior façade of existing buildings, ramps and walks with Barton Malow Builders and the Owner . Water blasting techniques shall be used (instead of sandblasting) near air intakes, mechanical rooms or patient care areas.
 8. Each Contractor shall provide for its Subordinate Parties protective apparel as required (coveralls, foot gear head gear, eye protection and face masks) suitable for use by construction personnel and authorized visitors when leaving Work areas and passing through adjacent occupied areas.
 9. When finished Work is installed, each Contractor shall cover and protect its own absorbent materials (carpets, fabrics, etc.) to assure that such materials do not absorb excessive dust and/or debris before an area is finally cleaned and turned over to the Owner for occupancy.

3.07 SUBSTANCE ABUSE AWARENESS

- A. The requirements of this section apply to Contractor employees and the employees of Subcontractors and other Subordinate Parties who provide services for construction on the job site. Client, Owner, and employer requirements may also be applicable and can supersede these requirements.
- B. Covered Employees: This policy applies to all full-time, part-time, temporary, intern, contract and non-bargaining trade employees of Contractor. Bargaining trade employees will be subject to the collective bargaining agreement in effect during the relevant time period.

- C. All Contractors, Subcontractors and other Subordinate Parties that work on projects managed by Barton Malow Builders will be required to have a substance abuse policy in place for their employees that is comparable to Barton Malow Builders 's policy. In the event of a conflict between policies, Barton Malow Builders 's policy will govern. This requirement will be included in all Barton Malow Builders contracts and purchase orders.
- D. Definitions:
1. Illegal Drugs: in this policy means: (a) inhalants and controlled substances; (b) any drug which is not legally obtainable; and (c) medications containing a controlled substance, which are used for a purpose or by a person for which they were not prescribed or intended or in amounts which exceed the prescribed dosage.
 2. Legal Drugs: are defined as prescribed drugs and over-the-counter drugs which have been legally obtained, are being used only for the purpose for which they were prescribed and/or manufactured and in the prescribed amounts, and are being used by the person for whom they were prescribed.
 3. Under the Influence: means appearance, speech, behavior, or bodily odor which causes a superior to reasonably suspect the employee to be impaired by alcohol, illegal drugs or legal drugs.
 4. Impaired: " is defined as: (a) the deterioration of an individual's judgment and a decrease in his/her physical ability due to alcohol, illegal drugs or legal drugs; (b) and/or the inability of a person to perform the essential functions of his/her job duties due to alcohol, illegal drugs or legal drugs; (c) and/or having a blood alcohol level exceeding .04%; (d) and/or testing positive for a legal or illegal drug that exceeds the following cut-of concentration level:
 - a. Amphetamines, including Methamphetamine, Ritalin, Ecstasy – 1,000 ng/ml;
 - b. Barbiturates – 300 ng/ml;
 - c. Benzodiazepines – 300 ng/ml;
 - d. Cannabinoid – 50 ng/ml;
 - e. Cocaine – 300 ng/ml;
 - f. Methadone – 300 ng/ml;
 - g. Opiates – 2,000 ng/ml;
 - h. Phencyclidine – 25 ng/ml
- E. Prohibited Activities:
1. Possessing or consuming any alcoholic beverage while: (a) on the job; (b) on Company property (except during a Company-sanctioned social function in which the Company provides or permits alcoholic beverages); (c) on client property (except during a client-sanctioned social function in which the client provides or permits alcoholic beverages); (d) in vehicles during work hours.
 2. Engaging in the unlawful or unauthorized manufacture, distribution, dispensation, possession, sale, transfer, storage, concealment, transportation, promotion, or use of a controlled substance, illegal drug, alcoholic beverage or drug related paraphernalia.
 3. Reporting for work or working while under the influence of alcohol or with illegal drugs in the employee's system.
 4. Using a legal drug or medication: (a) without a prescription in the employee's name written by a physician; and/or (b) in amounts that exceed the dosage identified on the prescription; and/or (c) in amounts that impair the employee's ability to perform his or her job.
- F. Such conduct is also prohibited during non-working hours to the extent that, in the opinion of the management of the Company, it:
1. Impairs the employee's ability to perform his or her job.
 2. Affects the Company's reputation, threatens its integrity or interferes with a client relationship.
 3. Is considered illegal and/or unlawful conduct as defined by local, state or federal law.
- G. Authorized Testing:
1. Reasonable Suspicion Testing: A Contractor, Subcontractor, or other Subordinate Party shall submit to a drug test and/or alcohol test if there is reasonable suspicion or

cause to suspect (including but not limited to based on the employee's appearance, speech or behavior) that the employee is under the influence of alcohol, illegal drugs or legal drugs.

2. POST-ACCIDENT TESTING: A Contractor, Subcontractor, or other Subordinate Party shall submit to a drug and/or alcohol test if such Contractor, Subcontractor, or Subordinate Party: (1) suffers an occupational on-the-job injury; (2) is suspected of causing or contributing to a serious work accident; and/or (3) is involved in a reportable accident while operating equipment or driving a motor vehicle.
 - a. On-the-job injuries are defined as injuries occurring during a serious or potentially serious accident or incident where: (a) safety precautions were violated; (b) negligent or careless acts were performed; (c) the employee(s) failed to wear prescribed personal protection equipment; and/or (4) the employee failed to follow prescribed safety rules.
 - b. A reportable accident is defined as: any accident which results in the death of a human being or bodily injury to a person who, as a result of the injury, immediately receives medical treatment away from the scene of the accident; or total damages to all property aggregating \$1000.00 or more, based upon actual costs or reliable estimates.
 - c. In all cases of post-accident testing, testing should be taken within eight (8) hours of the accident. It is the employee's responsibility to notify his/her Supervisor of all incidents.

3.08 INTERIM LIFE SAFETY PLAN

- A. This Section describes the following requirements including:
 1. Fire Precautions and Protection
 2. Temporary Fire Standpipe System
 3. Noxious Odors and Fumes
- B. Fire Precautions and Protection
 1. All Contractors and their Subordinate Parties shall assume full responsibility and take all necessary precautions to guard against and eliminate all possible fire hazards and to prevent damage to any construction work, building materials, equipment, temporary field offices, storage sheds, and all other property, both public and private. The location of the nearest corporation or public fire alarm box and the telephone number of the local fire department shall be conspicuously posted by Contractor throughout the field offices and in the building structure adjacent to its Work and it shall take precautions to prevent fire hazards in accordance with all fire protection and prevention laws and codes.
 2. Each Contractor's superintendent in charge at the Project shall review the entire Project at least once a week to make certain the Contractor has adhered to the conditions and requirements set forth herein.
 3. No open fires shall be permitted. Contractors and their Subordinate Parties shall not be allowed to start fires with gasoline, kerosene or other highly flammable materials.
 4. Welding, flame cutting, or other operations involving the use of flame, arcs, or sparking devices will not be allowed without adequate protection and shielding without prior permission of the Owner through Barton Malow Builders /Commercial Construction/JLN. All combustible and flammable material shall be removed from the immediate area. Material shall be protected with a fire resistant tarpaulin to prevent sparks, flames, or hot metal from reaching materials. Contractor shall provide the necessary personnel and firefighting equipment to effectively control incipient fires resulting from welding, flame cutting, or other operations involving the use of flame, arcs or sparking devices. Each Contractor performing Work involving welding or open flame shall provide its own fire extinguishers in the immediate area of the Work.
 5. Not more than a one day supply of flammable liquids such as oil, gasoline, paint or paint solvent shall be brought into any building at any one time. All flammable liquids having a flash point of 110 degrees F or below, which must be brought into any building, shall be confined to Underwriter's Laboratories' labeled safety cans. The bulk supply of all flammable liquids shall be detached at least 75 feet from the building and

from yard storage of building materials. Spigots on drums containing flammable liquids are prohibited on the project site. Drums are to be equipped with approved vent pumps.

6. Combustible materials shall not be stored or left overnight within the confines of the permanent building. This includes all internal combustion engines using gas or fuel oil. Hoisting of flammable or combustible materials to the roof shall only be in quantities as needed for immediate use.
 7. Only fire resistant tarpaulins shall be used on this Project.
 8. Each Contractor will provide and maintain in working order at all times during construction fire extinguishers conveniently located on each floor area in accordance with OSHA regulations. A floor stand shall be provided with appropriate signage. A representative of this contract shall walk the project on a weekly basis and document the status of the extinguishers. Any extinguisher requiring service shall be serviced that same day. Documentation shall be submitted to Barton Malow Builders each week. Contractor responsible for maintaining monthly signoff tags on fire extinguishers.
 9. Fire extinguishers provided by Contractors shall be "all purpose", and not a water type, to meet the approval of the Fire Underwriter's Laboratory, and will be inspected at regular intervals and recharged if necessary.
 10. In areas of flammable liquids, asphalt or electrical hazards, extinguishers of the 15 lb. carbon dioxide type or 20 lb. dry chemical type shall be provided by the Contractor creating such hazard.
 11. Each Contractor agrees that, in the event of fire, all its workers and all Subordinate Parties workers anywhere on site will assist in extinguishing the fire
 12. Contractor's and their Subordinate Parties' shanties of combustible construction shall not be placed inside of any structure. Such shanties shall be detached at least seventy-five (75) feet from the building or as directed by Barton Malow Builders /Commercial Construction/JLN with approval of the Owner . Totally incombustible shanties may be, if approved in writing by Barton Malow Builders /Commercial Construction/JLN, located inside of the structure.
 13. Use of only Underwriter's Laboratory approved heaters and/or stoves is permitted in field offices or storage sheds and they shall have fire resistive material underneath and at the sides near partitions and walls. Pipe sleeves and covering shall be used where stove pipe runs through walls or roof.
 14. Flammable portions of construction shanties inside the structure must be painted inside and outside with "ALBI" fire retardant paint or other fire retardant paint of equal quality as approved by the Owner .
- C. (Temporary) Fire Standpipe System
1. The Fire Protection Contractor shall furnish, install and maintain a temporary fire standpipe system in all parts of building for use of fire department during construction.
 2. Permanent risers shall be installed as floor slabs are cast, with capped 2 1/2 inch hose valves on each floor and temporary cap or plug on top. One riser at a time shall be extended up so that remainder are available for use at all times.
 3. Provide permanent cross connections or provide temporary cross connections.
- D. Noxious Odors and Fumes
1. All Contractors are notified that combustion engine equipment, tar kettles and any other items causing noxious odors or fumes will NOT be allowed in the building or near air intake louvers. If intake louver locations are in doubt, consult with Barton Malow Builders Company/Commercial Construction/JLN.

END OF SECTION

**SECTION 017123
FIELD ENGINEERING AND LAYOUT**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Layout of the Work

1.02 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Submit in addition to items required in Section 017000 - Execution and Closeout Requirements.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. Notify Owner's Representative, Barton Malow Builders and TMP Architecture, Inc of any discrepancies immediately in writing before proceeding to lay out the work. Locate and protect existing benchmarks and base line. Preserve permanent reference points during construction.
- B. Existing Utilities and Equipment: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify existing conditions.

3.02 LAYOUT OF THE WORK

- A. Maintain field office files, drawings, specifications, and record documents.
- B. Each Contractor shall be responsible for the layout and engineering of its own Work from the established points and lines given by a State of Michigan registered surveyor.
- C. Each Contractor is responsible for detailed and accurate layout of its own and its Subordinate Parties' Work to dimension from the principal lines, grades, and levels set forth in the Contract Documents or the principal lines, grades and levels provided by a State of Michigan registered surveyor. Each Contractor shall make provisions to preserve all control points, such as monuments, stakes, benchmarks, or other datum points, and shall replace at its own cost any of these which might be lost or displaced through its neglect.
- D. Contractors shall examine the conditions under which the Work is to be installed, shall take field measurements and verify field conditions, and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. Any errors, inconsistencies, omissions, discrepancies, or conditions detrimental to proper performance of the Work that are discovered shall be reported to Barton Malow Builders and TMP Architecture, Inc at once. Contractors are not to proceed until the required corrections are accomplished.
- E. The exactness of grades, elevations, dimensions, or locations given on any Drawings issued by Architect or the work installed by other contractors, is not guaranteed by Barton Malow Builders, Architect/Engineer, or Owner. The Contractor shall, therefore, satisfy itself as to the accuracy of all grades, elevations, dimensions, and locations. In all cases of interconnection of its Work with existing or other Work, it shall verify at the site all dimensions relating to such existing or other Work. Any errors due to the Contractor's failure to verify all such grades, elevations, dimensions, or locations shall be promptly rectified by the Contractor without any additional cost to the Owner or Barton Malow Builders.
- F. As the Work progresses, the Contractor shall prepare layout drawings showing the exact locations of Work under its Contract as a guide to all trades. Prior to any installation, the

separate Contractors shall exchange layout drawings and coordinate the Work and be subject to verification by all subsequent Contractors.

- G. As Work under each Agreement commences, the condition of preceding Work under other agreements shall be verified and accepted by each subsequent Contractor when appropriate. Verification may, at Contractors discretion, include a joint review by the subsequent Contractor, previous contractor(s), and to Barton Malow Builders and TMP Architecture, Inc note any corrective Work required, damage to previous Work, verification of elevations, tolerances, levels and plumbness, critical dimensions, surface conditions, and similar items affecting the Work under the Contract Documents and particularly items which prevent acceptance by the subsequent Contractors. The verification review procedures and findings shall be documented in writing by subsequent Contractors, signed by all parties, and copies provided to the Barton Malow Builders and TMP Architecture, Inc. Any corrective work necessary to satisfy requirements of the Contract Documents shall be performed promptly by the previous Contractor to prevent delay to the work under the subsequent Contracts. After corrective work is accomplished the subsequent Contractor shall furnish written acceptance of the work as noted above. Barton Malow Builders, Architect/Engineer, or Owner participation in a joint review under this paragraph shall in no event be deemed to constitute approval of any layout or other Work that fails to comply with the Contract Documents.
- H. Each Contractor shall be responsible to take such field measurements as may be required to determine the size of ordered material. In the event "guaranteed dimensions" are required, the Contractor shall promptly advise other Contractors through Barton Malow Builders by use of drawings, templates or mock-ups of the required conditions.
- I. All Work, and in particular, piping, ducts, conduit and similar items, shall be neatly and carefully laid out to provide the most useful space utilization and the most orderly appearance. Except as otherwise indicated or directed, piping and similar Work shall be installed as conditions reasonably permit, located to prevent interference with other Work or with the use of the spaces. Before Contractor installs a valve in an exposed location, it must make all efforts to install it in an accessible, concealed location. Contractors shall carefully plan the layout and review any questionable installations with Barton Malow Builders and TMP Architecture, Inc.
- J. The Owner or Barton Malow Builders may utilize a registered land surveyor to verify alignment and layout of certain portions of the Work. If that Work is out of tolerance or incorrect, the installing Contractor will be responsible for prompt correction of the Work to comply with the Contract Documents, along with all expenses incurred by Owner or Barton Malow Builders in such verification process, including, but not limited to, the cost for the surveying services, as well as the additional time expended by Barton Malow Builders personnel at standard billing rates.

3.03 CLOSEOUT ACTIVITIES

- A. See Section 017800 - Closeout Submittals, for closeout submittals.
- B. See Section 017900 - Demonstration and Training, for additional requirements.

END OF SECTION

**SECTION 017419
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL**

PART 1 GENERAL

1.01 WASTE MANAGEMENT REQUIREMENTS

- A. Owner requires that this project generate the least amount of trash and waste possible.
- B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.
- C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.
- D. Owner may decide to pay for additional recycling, salvage, and/or reuse based on Landfill Alternatives Proposal specified below.
- E. Methods of trash/waste disposal that are not acceptable are:
 - 1. Burning on the project site.
 - 2. Burying on the project site.
 - 3. Dumping or burying on other property, public or private.
 - 4. Other illegal dumping or burying.
 - 5. Incineration, either on- or off-site.
- F. Regulatory Requirements: Each Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

1.02 RELATED REQUIREMENTS

- A. Section 011000 - Use of Premises: List of items to be salvaged from the existing building for relocation in project or for Owner.
- B. Section 013000 - Administrative Requirements: Additional requirements for project meetings, reports, submittal procedures, and project documentation.
- C. Section 015000 - Temporary Facilities and Controls: Additional requirements related to trash/waste collection and removal facilities and services.
- D. Section 016000 - Product Requirements: Waste prevention requirements related to delivery, storage, and handling.
- E. Section 017000 - Execution and Closeout Requirements: Trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.
- F. Section 311000 - Site Clearing: Handling and disposal of land clearing debris.

1.03 DEFINITIONS

- A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.
- B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.
- C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.
- D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.
- E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.
- F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.
- G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.

- H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- I. Return: To give back reusable items or unused products to vendors for credit.
- J. Reuse: To reuse a construction waste material in some manner on the project site.
- K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.
- L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.
- M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.
- N. Toxic: Poisonous to humans either immediately or after a long period of exposure.
- O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.
- P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

1.04 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.

PART 3 EXECUTION

2.01 WASTE MANAGEMENT PROCEDURES

- A. See Section 015000 for additional requirements related to trash/waste collection and removal facilities and services.
- B. See Section 016000 for waste prevention requirements related to delivery, storage, and handling.
- C. See Section 017000 for trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

END OF SECTION

**SECTION 017800
CLOSEOUT SUBMITTALS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Project Record Documents.
- B. Operation and Maintenance Data.
- C. Warranties and bonds.
- D. Attic Stock

1.02 RELATED REQUIREMENTS

- A. Section 007200 - General Conditions and 007300 - Supplementary Conditions: Performance bond and labor and material payment bonds, warranty, and correction of work.
- B. Section 013000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- C. Section 017000 - Execution and Closeout Requirements: Contract closeout procedures.
- D. Section 017900 - Demonstration and Training : Contract training procedures as defined in contract documents.
- E. Individual Product Sections: Specific requirements for operation and maintenance data.
- F. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

- A. Each submittal shall show Contractor's review stamp signed or initialed, certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information are in accordance with the requirements of the work and Contract Documents.
- B. Each submittal register item shall be accompanied with a submittal cover sheet. The form must be filled out in its entirety for each respective register item and placed as the first page of the PDF uploaded to the register item in Autodesk Build .
- C. Identify: Project, Contractor, Subcontractor or supplier, pertinent drawing and detail number, and specification section number and article/paragraph, as appropriate, on each copy.
- D. If a submittal register item is missing, notify Barton Malow Builders so it can be added to the system for your team to attach appropriate PDFs for submission.
- E. In general, all submittals, except color, physical samples, or mockups, are to be created in a PDF document form and uploaded to their respective register number in Autodesk Build so it can be electronically reviewed by all parties necessary. Scanned copies of submittals will not be accepted.
- F. All submittals will be reviewed electronically, and the Contractor will be notified in Autodesk Build when the review is complete. The status will be noted both on the PDF and in the Autodesk Build system assigned to the item.
- G. Follow all other Submittal procedures as outlined in section 013000 - Administrative Requirements.
- H. All closeout submittals less final warranties are to be submitted within 60 days of the punch list.
- I. Provide hard copies if required by Contract Documents, or if requested by Barton Malow Builders.
- J. Quality Assurance:
 - 1. Preparation of data shall be done by personnel:
 - a. Trained and experienced in maintenance and operation of described products.
 - b. Familiar with requirements of this Section.

- c. Skilled as technical writer to the extent required to communicate essential data.
- d. Skilled as draftsman competent to prepare required drawings.

K. Types of Closeout Submittals

1. Project Record Documents (As-Built):
 - a. Submit documents to Barton Malow Builders upon completion of each respective scope of work as required in Contract Documents
 - b. Deliver Record Documents via: Redline PDF or AutoCAD.
2. Operation and Maintenance Data:
 - a. When applicable, submit O&M Data when submitting initial product data for each respective product
 - b. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed Architect/Engineer approved documents within 30 days prior acceptance for turnover.
 - c. Prepare data in the form of an electronic instruction manual for use by the Owner.
 - d. Cover Sheet: Identify each submittal with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS.". Ensure the cover sheet contains the following information:
 - 1) Identity of general subject matter covered in the manual and all designations from the contract documents.
 - 2) Identity of separate structures and/or equipment as applicable.
3. Warranties and Bonds:
 - a. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 14 days after acceptance.
 - b. Make other submittals within 14 days after Date of Substantial Completion, prior to final Application for Payment.
 - c. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 14 days after acceptance, listing the date of acceptance as the beginning of the warranty period.
 - d. If the project Team's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of Barton Malow Builders.
 - e. When the Contract Documents require Contractor, or Subcontractor and a Subordinate Party to execute a Special Warranty, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a sample warranty to Barton Malow Builders for approval prior to final execution.
 - f. The Contractor's Guarantee form can be obtained by your Construction Manager Representative. Prepare a written document utilizing the appropriate form, ready for execution by Contractor and its Subordinate Party(ies).
 - 1) Refer to Divisions 2 through 34 Sections for specific content requirements and particular requirements for submitting Special Warranties.
 - 2) Submit sample warranties for all items as required by the Contract Documents.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

- A. Each Contractor shall be responsible to maintain at the job site one copy (either electronic or hard copy) of:
 1. Current Record Drawings (As-Built).
 2. Record Project Manual
 3. Addenda
 4. Reviewed/Approved Shop Drawings

5. Change Orders
 6. Other modifications to Contract
 7. Field test report records
 8. Affidavits
- B. Make documents available for inspection by the Owner, Barton Malow Builders and the Architect.
- C. Store record documents separate from documents used for construction.
- D. Do not use project record documents for construction purposes.
- E. Record information concurrent with construction progress.
- F. Failure to maintain documents up-to-date will be cause for withholding payments to Contractor.
- G. Maintain documents in clean, dry, legible condition.
- H. At the outset of the project, obtain from the Architect through the Barton Malow Builders, at no charge to the Contractor, one complete set of electronic Contract Documents (via Autodesk Build) including:
1. Technical Specifications with all addenda.
 2. One complete set of prints of all Drawings.
- I. Record Drawings:
1. Label each document "Project Record".
 2. Do not permanently conceal any work until required information has been recorded.
 3. Contractor may at his option enter required information on a "working set" and then at completion of Project transfer the information to final submitted "Project Record" set
 4. Legibly mark each item to record actual construction including:
 - a. Measured depths of foundations in relation to survey data.
 - b. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - c. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 - d. Field changes of dimension and detail.
 - e. Changes made by PCO- Notice to Proceed.
 - f. Details not on original Contract drawings.
- J. Technical Specifications and Addenda:
1. Contractor shall legibly mark up each section to record:
 - a. Manufacturer, trade name, catalog number and Supplier of each product and item of equipment actually installed.
 - b. Changes made by PCO- Notice to Proceed.
 - c. Other items not originally specified.
- K. Conversion of Schematic Layouts:
1. Arrangement of conduits, circuits, piping, ducts and similar items are in most cases shown schematically on the Drawings.
 2. Contractor shall legibly mark to record actual construction:
 - a. Dimensions accurate to within 1" of the center of items shown schematically.
 - b. Identify each item, for example, "cast iron drain", "galvanized water", etc.
 - c. Identify location of each item, for example, "under slab", "in ceiling plenum", "exposed", etc.
 3. The Owner, Architect or Barton Malow Builders may waive requirements of schematic layout conversion, when in their opinion, it serves no beneficial purpose. Do not, however, rely on waivers being issued except as specifically issued by the Barton Malow Builders in written form.

3.02 OPERATION AND MAINTENANCE DATA

- A. Source Data: For each product or system, list names, addresses and telephone numbers of Contractor, Subcontractors and suppliers, including local source of supplies and replacement parts.
- B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.
- E. Compile product data and related information appropriate for Owner's maintenance and operation of products furnished under Contract.
 - 1. Prepare operating and maintenance data as specified in this Section and as referenced in other pertinent sections of the Technical Specifications.
- F. Instruct Owner's personnel in maintenance of products and in operation of equipment and systems in accordance with the requirements in 017900 - Demonstration and Training.
 - 1. Submit electronic copies of completed Architect/Engineer approved operation and maintenance manuals at least 30 days before execution and have hard copies on hand for use in demonstrations and instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

- A. For Each architectural Product, Applied Material, and Finish:
 - 1. Manufacturer's data, giving full information on products.
 - a. Product data, with catalog number, size, composition, and color and texture designations.
 - b. Information for re-ordering custom manufactured products.
 - 2. Instructions for Care and Maintenance and preventative maintenance:
 - a. Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.
 - 3. Moisture protection and weather-exposed products:
 - a. Include product data listing applicable reference standards, chemical composition, and details of installation.
 - b. Provide recommendations for inspections, maintenance, and repair.
 - 4. Additional information as specified in individual product specification sections.
- B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

- A. Content, for each unit of equipment and system, as appropriate:
 - 1. Description of unit or system, and component parts.
 - a. Identify function, normal operating characteristics, and limiting conditions.
 - b. Include performance curves, with engineering data and tests.
 - c. Complete nomenclature and model number of replaceable parts.
 - 2. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
 - 3. Operating Procedures:
 - a. Include start-up, break-in, and routine normal operating instructions and sequences.
 - b. Include regulation, control, stopping, shut-down, and emergency instructions.
 - c. Include summer and winter operating instructions.

- d. Include any special operating instructions.
 4. Maintenance Requirements:
 - a. Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
 5. Provide servicing and lubrication schedule, and list of lubricants required.
 6. Include manufacturer's printed operation and maintenance instructions.
 7. Include sequence of operation by controls manufacturer.
 8. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
 - a. Predicted life of parts subject to wear.
 - b. Items recommended to be stocked as spare parts.
 9. Provide control diagrams by controls manufacturer as installed.
 10. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.
 11. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
 12. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
 13. Include test and balancing reports.
 14. Additional Requirements: As specified in individual product specification sections.
- B. Content, for each electric and electronic system, as appropriate:
1. Description of unit or system, and component parts.
 - a. Identify function, normal operating characteristics, and limiting conditions.
 - b. Include performance curves, with engineering data and tests.
 - c. Complete nomenclature and model number of replaceable parts.
 2. Panelboard Circuit Directories:
 - a. Provide electrical service characteristics, controls, and communications; typed.
 3. Include color coded wiring diagrams as installed.
 4. Operating Procedures:
 - a. Routine and Normal operating instructions
 - b. Sequences required
 - c. Special operating instructions
 5. Maintenance and Preventative Maintenance Procedures:
 - a. Routine operations.
 - b. Guide to "trouble-shooting".
 - c. Disassembly, repair and re-assemble.
 - d. Adjustment and checking.
 6. Include manufacturer's printed operation and maintenance instructions.
 7. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
 8. Other data as required under pertinent sections of specifications.
- C. Prepare and include additional data when the need for such data becomes apparent during instruction of Owner's personnel.
- D. Additional requirements for operating and maintenance data: Reference sections of Technical Specifications.

3.05 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

- A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.
- B. Where systems involve more than one specification section, provide separate tabbed divider for each system.

- C. Binders: Commercial quality, 8-1/2 by 11 inch (216 by 280 mm) three D side ring binders with durable plastic covers; 3 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- D. Electronic searchable CD of all O&M information in PDF format (refer to 013000 - Administrative Requirements) should be provided for initial review and approval. Hard copies (number of copies as directed by Barton Malow Builders and/or project specifications) should be provided after approval of electronic copies.
- E. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- F. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Contractors, Subcontractors, & Other Subordinate Parties Contractors, Subcontractors, Suppliers, and other Subordinate Parties, with names of responsible parties.
- G. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.
- H. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.
- I. Text: Manufacturer's printed data, or typewritten data.
- J. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
 - 1. Supplement product data with drawings as necessary to clearly illustrate:
 - a. Relations of component parts or equipment and systems.
 - b. Control and flow diagrams.
 - 2. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.
- K. Arrangement of Contents: Organize each volume in parts as follows:
 - 1. Project Directory.
 - 2. Table of Contents, of all volumes, and of this volume.
 - 3. Operation and Maintenance Data: Arranged by system, then by product category.
 - a. Source data.
 - b. Product data, shop drawings, and other submittals.
 - c. Operation and maintenance data.
 - d. Field quality control data.
 - e. Copy of each warranty, bond and service contract issued
 - 1) Provide information sheet for Owner's personnel, give:
 - (a) Proper procedures in event of failure.
 - (b) Instances which might affect validity of warranties or bonds.
 - 4. Design Data: To allow for addition of design data furnished by Manufacture or others, provide a tab labeled "Design Data" and provide a binder large enough to allow for insertion of at least 20 pages of typed text.

3.06 WARRANTIES AND BONDS

- A. This section includes administrative and procedural requirements for warranties required by the Contract Documents, including manufacturers' standard warranties on products and special warranties:
 - 1. Refer to General Conditions for terms of the Contractor's period and obligations for Correction of the Work.
- B. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products. Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturers, and Contractors required to countersign special warranties with the Contractor.

- C. Obtain warranties and bonds, executed in duplicate by responsible Contractors, suppliers, and manufacturers, within 14 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until date of Owner Equipment Acceptance is determined.
- D. Definitions:
 - 1. **Standard Product Warranties:** are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by manufacturer to Owner
 - 2. **Special Warranties:** are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.
- E. Deliver all written warranties and guarantees required by the Contract Documents with the Owner and Barton Malow Builders named as beneficiaries. All warranties shall include labor, equipment, materials and incidentals per warranty called out per specification section, shall be signed by the manufacturer or Contractor as the case may be, and countersigned by the Contractor. All written warranties shall be addressed to the Owner and delivered to Barton Malow Builders upon completion of the Project, before or with the submission of Request for Final Payment.
- F. In addition to all other warranties set forth in the Contract Documents or imposed by applicable law, Contractor warrants to Owner and Barton Malow Builders that the Work will be free from defects and performed in strict conformity with the requirements of the Contract Documents. This warranty survives the termination of the Agreement and shall only be extinguished by limitation periods imposed by applicable law and shall not be limited by any other provisions contained in the Agreement, including any provisions or time periods related to Contractor's obligation to correct defective Work.
- G. Contractor, upon signing the Agreement, shall obtain and forward to Barton Malow Builders any and all Standard Product Warranties for products, materials and systems covered under its Agreement. The Manufacturer's warranties do NOT relieve the Contractor from its warranty obligations under the Contract Documents.
- H. Special Warranties shall become effective on a date of Owner Acceptance for equipment or systems and Substantial Completion for products and materials of the entire Project or portions thereof as agreed upon by the Project Team. As additional Work is accepted, separate warranties for those specific portions of the Work shall be issued and properly dated. Issuance of warranties for a portion of the Work shall in no way become the basis for Application for Final Payment.
- I. If for any reason, the Bidder cannot warrant any part of the Work using products, materials, or construction methods that have been specified or shown, it shall notify Barton Malow Builders in writing at least ten (10) days before the bid submission date, giving reasons together with the names of products and data on substitutions it can guarantee. Should the Bidder fail to so notify Barton Malow Builders within this time period, it will be bound to all warranties and guarantees as set forth in the Contract Documents.
- J. Related Damages and Losses: In correcting Work that has been rejected as defective or otherwise failing to conform to the Contract Documents, whether before or after Substantial Completion, Contractor shall bear all related costs, including, but not necessarily limited to, the cost to correct the Work, the cost to correct all other Work that has been damaged by the defective or non-conforming Work, or that is damaged in the process of correcting the defective or nonconforming Work, and the cost of all additional testing and inspections and compensation for the Architect/Engineer, Barton Malow Builders, or Owner's services and expenses made necessary thereby.
- K. Reinstatement of Warranty: When Work covered by a warranty with a specific time period has failed and has been corrected by Contractor, the warranty shall be reinstated for a time period equal to the original warranty.
- L. Express warranties are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available to the Owner or Barton Malow Builders

under the law. Express warranty periods shall not be interpreted as limitations on the time in which Owner or Barton Malow Builders may enforce Contractor's duties and obligation or their rights and remedies under the Agreement and applicable law.

1. Rejection of Warranties: The Owner, Architect/Engineer, and Construction Manager reserve the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
- M. Where the Contract Documents require a Special Warranty, or similar commitment on the Work or part of the Work, the Owner, Architect/Engineer, and Construction Manager reserve the right to refuse to accept the Work, until the Contractor presents evidence that the entities required to countersign such commitments are willing to do so.
- N. Manual: Bind in commercial quality 8-1/2 by 11 inch (216 by 279 mm) three D side ring binders with durable plastic covers.
1. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor, Subcontractor, and Equipment supplier; and name of responsible company principal.
 2. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.
 3. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Contractor, Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

END OF SECTION

**SECTION 017900
DEMONSTRATION AND TRAINING**

PART 1 GENERAL

1.01 SUMMARY

- A. Procedures for demonstration of equipment operation and instruction of Owner's personnel where indicated in specific specification sections. This will be coordinated through Barton Malow Builders.
- B. Training of Owner personnel in operation and maintenance is required for:
 - 1. Items specified in individual specification sections.

1.02 RELATED REQUIREMENTS

- A. Section 017800 - Closeout Submittals: Operation and maintenance manuals.
- B. Section 019113 - General Commissioning Requirements: Additional requirements applicable to demonstration and training.
- C. Other Specification Sections: Additional requirements for demonstration and training.

1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures; except:
 - 1. Submit preliminary schedule/agenda to Barton Malow Builders for Architect's and Owner's approval, listing three separate times and dates for demonstration of each item of equipment and each system, at least 2 weeks or as required prior to proposed dates for Owner's choosing.
 - 2. Submit 1 electronic copy of reports within one week after completion of demonstrations, that demonstrations and instructions have been satisfactorily completed.
 - a. Provide time and date of each demonstration.
 - b. Hours devoted to demonstration.
 - c. Provide list of persons present in the form of a sign-in sheet
 - 3. When preparing the submittal, be sure to include video recording of actual training with the aforementioned documentation.
- B. Training Reports:
 - 1. Identification of each training session, date, time, and duration.
 - 2. Sign-in sheet showing names and job titles of attendees.
 - 3. List of attendee questions and written answers given, including copies of and references to supporting documentation required for clarification; include answers to questions that could not be answered in original training session.
- C. Video Recordings: Submit digital video recording of each demonstration and training session for Owner's subsequent use.
 - 1. Format: DVD Disc.
 - 2. Label each disc and container with session identification and date.

1.04 QUALITY ASSURANCE

- A. Instructor Qualifications: Familiar with design, operation, maintenance and troubleshooting of the relevant products and systems.
 - 1. Provide as instructors the most qualified trainer of those contractors and/or installers who actually supplied and installed the systems and equipment.
 - 2. Where a single person is not familiar with all aspects, provide specialists with necessary qualifications.
- B. When specified in individual Sections, require manufacturer to provide authorized representative to demonstrate operation of equipment and systems, instruct Owner's personnel, and provide written report that demonstrations and instructions have been completed.

- C. Barton Malow Builders or Owner will provide list of personnel to receive instructions, and will coordinate their attendance at agreed-upon times.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PREPARATION

- A. Provide substantiating information that verifies equipment has been inspected and put into operation; testing, adjusting, and balancing has been performed; and equipment and systems are fully operational.
- B. Submit copies of completed approved operation and maintenance manuals (017800 - Closeout Submittals) at least 2 weeks before execution and have at hand for use in demonstrations and instructions.

3.02 DEMONSTRATION - GENERAL

- A. Demonstrations conducted during system start-up do not qualify as demonstrations for the purposes of this section, unless approved in advance by Owner.
- B. Demonstrations conducted during Functional Testing need not be repeated unless Owner personnel training is specified.
- C. Demonstration may be combined with Owner personnel training if applicable.
- D. Operating Equipment and Systems: Demonstrate operation in all modes, including start-up, shut-down, seasonal changeover, emergency conditions, and troubleshooting, and maintenance procedures, including scheduled and preventive maintenance.
1. Perform demonstrations within 2 weeks after O&M approval and acceptance.
 2. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
 3. Contractor shall document the testing, equipment start-up and training sessions as required using the following forms by contacting Construction Manager or in Autodesk Build:
 - a. **Equipment/System Acceptance** - This form will be completed for each piece of equipment or system for each contract that requires operational testing and/or training before acceptance. This will document the date of testing, the equipment tested, names of personnel that witnessed the testing and acceptance.
 - b. **Owner Training Register** - This form will be completed for each contract that requires training to be provided to the Owner's personnel. This will document the date of training, type of training, names of the personnel trained, and acceptance of the training.
- E. Non-Operating Products: Demonstrate cleaning, scheduled and preventive maintenance, and repair procedures.
1. Perform demonstrations within 2 weeks after O&M manual approval and acceptance.

3.03 TRAINING - GENERAL

- A. The amount of time required for instruction on each item of equipment and system is that specified in individual sections.
- B. Conduct training on-site unless otherwise indicated.
- C. Contractor is responsible for camera recording the training sessions. The camera recording should be of professional quality and Barton Malow Builders should be provided with 1 copies of the in format required.
- D. Do not start training until Functional Testing is complete, unless otherwise specified.
- E. Training schedule will be subject to availability of Owner's personnel to be trained; Barton Malow Builders will compile and distribute the final schedule for the system demonstration, training, start-up, and turnover of all systems and equipment based on previous input provided by Contractors. Once final schedule has been distributed, failure to conduct sessions according to schedule will be cause for Troy School District and/or Barton Malow Builders for personnel "show-up" time.

- F. Review of Facility Policy on Operation and Maintenance Data: During training discuss:
 - 1. The location of the O&M manuals and procedures for use and preservation; backup copies.
 - 2. Typical contents and organization of all manuals, including explanatory information, system narratives, and product specific information.
 - 3. Typical uses of the O&M manuals.
- G. Product- and System-Specific Training:
 - 1. Review the applicable O&M manuals.
 - 2. For systems, provide an overview of system operation, design parameters and constraints, and operational strategies.
 - 3. Review instructions for proper operation in all modes, including start-up, operation, control, adjustment, troubleshooting, servicing, shut-down, seasonal changeover and emergency procedures, and for maintenance, including preventative maintenance.
 - 4. Provide hands-on training on all operational modes possible and preventive maintenance.
 - 5. Emphasize safe and proper operating requirements; discuss relevant health and safety issues and emergency procedures.
 - 6. Discuss common troubleshooting problems and solutions.
 - 7. Discuss any peculiarities of equipment installation or operation.
 - 8. Discuss warranties and guarantees, including procedures necessary to avoid voiding coverage.
 - 9. Review recommended tools and spare parts inventory suggestions of manufacturers.
 - 10. Review spare parts and tools required to be furnished by Contractor.
 - 11. Review spare parts suppliers and sources and procurement procedures.
- H. Be prepared to answer questions raised by training attendees; if unable to answer during training session, provide written response within three days.
- I. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instructions
- J. Ensure proper notice is provided to Barton Malow Builders if attendees will need jobsite access for proper training.

END OF SECTION