

# Bay City Public Schools

## PROJECT MANUAL



### 2020 Bond Series 3 Phase 4 Western HS Bathroom Renovations

November 8, 2024

---

#### ARCHITECTS/ENGINEERS

WTA Architects  
100 S Jefferson Ave Ste 601  
Saginaw MI 48607  
Telephone: 989-752-8107  
Fax: 989-752-3125



WTA ARCHITECTS

#### CONSTRUCTION MANAGER

Wolgast Corporation  
4835 Towne Centre Road, Suite 203  
Saginaw, Michigan 48604  
Telephone: (989) 790-9120  
Fax: (989) 790-9063



**Bidding Requirements, Contract Forms, and Conditions of the Contract**

00005 – Index  
00010 – Notice to Bidders  
00100 – Instructions to Bidders  
00300 – Instructions – Proposals/Bid Division Descriptions  
00305 – Proposal Form  
00306 – Familial Relationship Affidavit  
00307 – Iran Business Relationship Affidavit  
00309 – Bid Division Descriptions  
00310 – Clarification Request Form  
00410 – Bid Security  
00500 – Notice to Proceed/Commencement of Work  
00510 – Sample Owner/Contractor Agreement  
00600 – Bonds  
00650 – Certificates of Insurance/Sample Form  
00670 – Schedule of Values  
00680 – Subcontractor, Supplier, Material, Equipment  
00690 – Employee Listing  
00700 – General Conditions of the Contract for Construction – AIA A232  
00900 – Addenda  
00999 – Milestone Schedule

**Division 1 – General Requirements**

01010 – Summary of Work	01520 – Construction Aids
01030 – Project Work Hours	01530 – Safety
01040 – Project Administration	01540 – Security
01045 – Contractor Applications for Payment	01550 – Access and Deliveries
01050 – Sworn Statements/Waivers	01560 – Temporary Controls
01051 – Change Events	01570 – Traffic Regulation
01053 – Change Orders	01580 – Project Informational Signs
01055 – Field Engineering	01590 – Project Field Office
01060 – Prevailing Wage	01600 – Material and Equipment
01085 – Applicable Standards	01700 – Contract Closeout
01100 – Alternates	01710 – Cleaning
01200 – Project Meetings	01720 – Record Documents
01300 – Submittals	01730 – Operating and Maintenance Data
01350 – Schedules	01740 – Guaranties and Warranties
01400 – Quality Control	01800 – Hazardous Materials Affidavit of Non-Use
01410 – Testing Services	01805 – AHERA Notification
01510 – Temporary Utilities	01900 – Demolition and Removal

**END OF SECTION 00005**

**Bay City Public Schools** will receive sealed bid proposals for construction trade work from qualified contractors for the **Bay City Public Schools, 2020 Bond Series 3 - Phase 4 Western HS Bathrooms**. A pre-bid meeting and project walk-through will be conducted by the Construction Manager, Wolgast Corporation, and the Architect, **WTA Architects**, on **Wednesday, November 13, 2024**, at **3:00 PM** (local time) at the **Main Entrance of Western HS**.

Proposals may be mailed or delivered in person to **Attention, Superintendent**, c/o **Bay City Public Schools 601 Blend Street, Bay City MI 48706**. Proposals must be received prior to **1:30 PM** (local time) on **Monday, November 25, 2024**, at the **Bay City Public Schools Administration Building**. Proposals will be publicly/Virtually opened and read aloud at **1:31 PM** in the **Administration Office**. **Electronic Sealed bids must be submitted using Building Connected see below link.** <https://app.buildingconnected.com/login?retUrl=%2F> All bids will be evaluated after the bid opening. All bids received after **1:30 PM** of the bid date will be returned to the Bidder unopened. If you would like to listen in while the bids are being opened, please use this link <https://8x8.vc/wolgast/lisa.donahue>

The Project will utilize separate prime contractors. All contracts for construction will be direct contracts with the Owner. Overall administration of the Project will be the responsibility of the Construction Management Firm, Wolgast Corporation, 4835 Towne Centre, Suite 203, Saginaw, Michigan 48604, Phone: (989) 790-9120. The Owner will award contracts on or about **Monday, December 9, 2024**, to separate prime contractors for separate bid divisions or combinations of bid divisions. A Bidder may submit a proposal on more than one Bid Division; however, a separate bid must be submitted for each Bid Division of a combined bid. All bids shall be submitted on the bid forms provided in the project specifications, completely filled in, and executed (copies of the bid forms are acceptable). Facsimile bids will not be accepted.

The Bidders shall read and review the Bidding Documents carefully and familiarize themselves thoroughly with all requirements.

Requests by Contractors for inclusion, as Bidders shall be addressed to Wolgast Corporation. One (1) set of Bidding Documents will be provided to each contractor through Wolgast Corporation. Plans may be obtained from Wolgast Corporation, attention **Lisa Donahue** [ldonahue@wolgast.com](mailto:ldonahue@wolgast.com) All questions regarding the bidding procedures, design, and drawing/specification intent are to be directed to the Construction Manager on a Clarification Request Form (Section 00310), attention **Dale Schwerin** [dschwerin@wolgast.com](mailto:dschwerin@wolgast.com)

A Bid Security by a qualified surety authorized to do business in the state where the Project is located in the amount of five percent (5%) of Base Bids shall accompany each proposal or proposal combination. The Bid Security may be in the form of a Bid Bond, Cashier's Check, or Money Order. Personal checks are NOT acceptable. Bids may not be withdrawn for a period of sixty (60) days after the bid date. Successful Bidders may be required to furnish Surety Bonds as stated in the Project Specifications (Section 00600).

The Owner reserves the right to reject any or all proposals, accept a bid other than the low bid, and to waive informalities, irregularities, and/or errors in the bid proposals, which they feel to be in their own best interest.

All bidders must provide familial disclosure in compliance with MCL 380.1267 and attach this information to the bid. The bid shall be accompanied by a sworn and notarized statement disclosing any familial relationship that exists between the Owner or the employee of the bidder and any member of the board, intermediate school board, or board of directors or the superintendent of the school district, intermediate superintendent of the intermediate school district, or chief executive officer of the public-school academy. The district shall not accept a bid that does not include this sworn and notarized disclosure statement.

**END OF SECTION 00010**

**PART 1 – GENERAL**

**1.01 DEFINITIONS**

- A. The Owner is: **Bay City Public Schools.**
- B. The Architect is: **WTA Architects.**
- C. The Construction Manager is: **Wolgast Corporation.**
- D. The Project Team consists of the Construction Manager, the Architect, and other design professionals providing services in connection with the project.
- E. The Project is: **Bay City Public Schools, 2020 Bond Series 3 - Phase 4 Western HS Bathrooms**
- F. Work is any portion of the Project.
- G. The Bidding Documents include (as applicable to the Project):
1. The Notice to Bidders.
  2. The Instructions to Bidders.
  3. Bid Division Descriptions.
  4. Proposal Forms.
  5. Sample Contract Forms.
  6. The Specifications for the Project.
  7. The Drawings for the Project.
  8. All Addenda issued for the Project.
  9. The Preliminary Milestone Schedule.
- H. Addenda are written and/or graphic instruments issued by the Architect, which add to, delete from, clarify, or correct the Bidding Documents.
- I. Bids are sums stipulated in Proposals for which Bidders propose to perform the Work of Bid Divisions.
- J. Base Bids are sums stipulated in Proposals for which Bidders offer to perform the Work of Bid Divisions, and which Alternate Bids may be added to or deleted from.
- K. Alternate Bids are sums that may be added to or deleted from Base Bids for the performance of Alternate Work, as delineated in the Bidding Documents.
- L. Unit Prices are sums included in the Proposals as Bids per unit measure of materials and/or services, as required by the Bidding Documents.
- M. Proposals are complete, properly executed forms including Base Bids, Alternate Bids, Unit Prices, and other information requested by the Owner.
- N. Bidders are pre-qualified contractors who submit proposals to the Owner for Work as Prime Contractors on the Project.
- O. Bid Divisions are the divisions of Work into which the Project is divided for bidding. Bid Divisions shall not be confused with Technical Specification Divisions.
- P. Bid Division Descriptions (Section 00309) are written descriptions of the Work included in the Bid Divisions.

**1.02 MULTIPLE PRIME CONTRACTS/BID DIVISIONS**

- A. This is an Owner Represented Project. There is no General Contractor. All contracts awarded on the Project shall be prime contracts. The Owner will award contracts for each Bid Division and/or for groups of Bid Divisions. The Construction Manager will administrate the Project.
- B. Although each Bid Division involves an obvious and recognizable segment of “conventional” trade contracting, multiple contract project delivery requires that adjustments be made to permit the completion of each Bid Division as a separate segment of construction. Each bidder shall carefully review the total scope of their responsibilities with respect to the Work of their Bid Division(s) and shall provide for the total scope in their Proposal.
- C. Bid Division Descriptions (Section 00309) have been written to clearly delineate each Bid Division. The Owner is not responsible for a Bidder’s interpretation of the Bid Division Descriptions. Bidders are encouraged to request information by calling or emailing the Project Manager:

**Dale Schwerin**, Project Manager, Wolgast Corporation, (989) 790-9120, extension **704** or [dschwerin@wolgast.com](mailto:dschwerin@wolgast.com) .

- D. For the purpose of clarity, the scope of work for each Bid Division may be divided into four categories: “GENERAL INCLUSIONS,” “DIVISION INCLUSIONS,” “PROJECT INCLUSIONS,” AND “EXCLUDED.”
1. Information provided under the heading “GENERAL INCLUSIONS” is the obvious and/or “conventional” work scope of each Bid Division.
  2. Information provided under “DIVISION INCLUSIONS” or “PROJECT INCLUSIONS” points out items which may be considered less obvious or “unconventional,” but which are included in the work scope of a particular Bid Division. (Information under these headings is not always necessary to delineate a Bid Division.)
  3. Information provided under “EXCLUDED” is for the purpose of indicating beginning and termination points, and/or to provide an understanding of fringe involvement included in Bid Divisions. (Information under this heading is not always necessary to delineate a Bid Division.)
- E. **Bidders shall construe nothing contained in the Bidding Documents, including the Bid Division Descriptions, as an assignment of work to any construction industry trade. Each Bidder is responsible for their own work assignments when making their proposal.**

**1.03 INTERFACING BID DIVISIONS**

- A. Each Bidder shall familiarize themselves with the work scope of all Bid Divisions that interface with their own. Each Bidder shall consider that the work of their Bid Division(s) may follow the work of another Division or other Divisions, and that other Contractors may perform work after the work of their Bid Division(s), and that other Contractors may work simultaneously with the work of their own Bid Division(s). Each Bidder shall include provisions for such interfaces and for cooperation with interfacing Contractors in their Proposal.

**1.04 PRE-BID CONFERENCE**

- A. **Main Entrance of Western High School  
500 W Midland Road, Auburn, MI 48611  
Wednesday, November 13, 2024 at 3:00 PM**

**1.05 BIDDING DOCUMENTS**

- A. Qualified Bidders have received sets of Bidding Documents. Requests from Bidders for additional sets of Bidding Documents will be honored under the conditions set forth in the Notice to Bidders (Section 00010).
- B. Following the award of construction contracts for the Project, all sets of Bidding Documents, plans, and specifications, except sets in possession of Contractors who have been awarded contracts, shall be returned to the Project Team.
- C. Bidders who return sets of Bidding Documents, plans, and specifications, in reasonably good condition shall have their plan deposit returned within ten (10) days of the Project Team's receipt of the documents.
- D. Bidders shall use complete sets of Bidding Documents in preparing Proposals. Bidders are responsible for ascertaining that the Bidding Documents upon which their Proposals are based are complete.
- E. Bidding Documents are provided to Bidders for uses pertaining to bidding only. No other use is permitted.
- F. Bidders shall promptly notify the Project Team of any ambiguities, inconsistencies, errors, and/or omissions they may discover in the Bidding Documents.
- G. Requests from Bidders for clarification or interpretation of the Bidding Documents must reach the Project Team five days before the bid date or by the date addressed in the pre-bid agenda. Any bidder clarifications which reach the Project Team after such dates have passed will not be considered.
- H. Changes and corrections to the Bidding Documents will be made by Addendum and distributed to Bidders.
- I. Each Bidder shall ascertain prior to submitting their Proposal that they have considered every Addendum issued prior to the Bid Date and shall acknowledge receipt of each Addendum in writing in their Proposal.

**1.06 PRELIMINARY MILESTONE SCHEDULE**

- A. The Preliminary Milestone Schedule is Section 00999 of this Project Manual.
- B. A Preliminary Milestone Schedule has been developed by the Construction Manager and supplied to the Bidders. Each Bidder is required to review the dates indicated in that Schedule, and either endorse or amend them within the context of the Bid Division(s) they are bidding. Space is provided on the Proposal Form for endorsement or amendment. The Milestone Schedule and the information it provides are not part of the Contract Documents.
- C. The milestone dates as endorsed and/or amended by successful bidders and accepted by the Owner will be used in the development of a Master Schedule to be used as a guide during the construction of the Project.
- D. Each Bidder is obligated to comment, in writing, on the Milestone Schedule if, in their opinion, the dates do not depict realistic time interval(s) for performance of the Work of their Bid Division(s)
- E. The effect of endorsements of and amendments to the Milestone Schedule will be considered when selecting Bidders for contract awards.

**1.07 BID SECURITY**

- A. Bid Security is required for this Project in the amount of five percent (5%). A surety company licensed, as such, to do business in the State of Michigan, must issue a Bid Bond, and all other Bonds. For additional information and instructions regarding Bid Security, refer to Section 00410.

**1.07.1 AFFIDAVITS ACCOMPANYING BID PROPOSALS**

- A. All Bid Proposals shall include the Familial Affidavit form (see Section 00306 – Familial Affidavit) to be included as part of the Bid Proposal.
- B. All Bid Proposals shall include the State of Michigan required Iran Economic Sanctions Affidavit form (see Section – 00307 – Iran Economic Sanctions) to be included as part of the Bid Proposal.

**1.08 SUBSTITUTIONS**

- A. The materials, products, and equipment described in the Bidding Documents establish the quality standard, required function, dimensions, and appearance, which shall be met by all substitutions.
- B. Contractors may request items not included in the construction bid documents be considered for inclusion as acceptably specified items by submitting a written request to the Project Team addressed to the Construction Manager not later than ten (10) days prior to the bid date. The Construction Manager will forward these written requests to the Architect who will make the determination whether the requested item is an acceptable “equal”. These acceptable “equal” items will be identified as acceptable by their inclusion in a written Addendum.
- C. Each substitution request will include a complete description of the proposed substitute, drawings, cuts, performance and test data, the name of the material or equipment for which it is to be substituted, and any other information necessary for evaluation. A statement setting forth any changes in other materials, equipment, or work that incorporation of the substitute would require should also be included. The burden of proof of the merit of the proposed substitute is upon the Bidder. The Architect’s approval or disapproval of a proposed substitution shall be final.
- D. The bidder’s Base Bid contained in the Bid Proposal Form shall be the exact items contained in the construction bid documents (plans, specifications, or addenda). The Base Bid contained in the Bid Proposal Form shall not include any substitute items not allowed in the construction bid documents.
- E. Bidders that have other substitutions to be considered for inclusion in the Project must identify them as Voluntary Alternates in the portion of the Bid Proposal Form so designated. The identity of these items must include the all-product information and the dollar amount of increase or decrease associated with each individual substitute item.
- F. By making requests for any substitution, the Contractor represents:
  - 1. The Contractor has personally investigated the proposed substitution product and determined that it is equal to or superior to the product specified.
  - 2. The Contractor will provide the warranty for the substitution as the product specified.
  - 3. The cost data presented is complete and includes all related costs required for it to be incorporated into the Project including costs for additional Architectural and/or Construction Management services.
- G. The Architect will reply in writing to the Contractor, through the Construction Manager, stating whether the Owner or Architect, after due investigation, has reasonable objection to any substitution request. The decision of the Architect shall be final.

**1.09 VOLUNTARY ALTERNATES/VALUE ENGINEERING SUGGESTIONS**

- A. Base Bids and Alternate Bids shall be based upon the Bidding Documents, including approved substitutions, and on the Bidders’ evaluation of the Project Site. However, the Owner invites Voluntary Alternates or Value Engineering suggestions consistent with the intent of the Bidding Documents. Such Alternates and suggestions, if submitted, shall be incorporated into Proposals by describing Voluntary Alternate(s) on company letterhead and attached to the Bid Proposal Form.

**1.10 BID OPENING AND CONTRACT AWARDS**

- A. Bids will be opened publicly after the time and date established for receipt of Proposals. Bid Summaries will be made available to Bidders by request after the Bid Date, but not before Post Bid Interviews have been conducted.
- B. Contract awards will be based on Bidders' Proposals and ability to perform. The Owner intends to award contracts to Bidders who submit proper Proposals in accordance with the requirements of the Bidding Documents.
- C. Decisions regarding Bidders abilities affecting contract awards will be made by the Owner.
- D. The Owner reserves the right to waive any informality or irregularity in any Proposal.
- E. The Owner reserves the right to reject any Proposal.
- F. All awards will be made in the Owner's best interest.

**1.11 POST-BID INTERVIEWS**

- A. Bidders in contention for contract awards will be required to attend Post-Bid Interviews and submit post-bid submittals in rough draft for review.

**1.12 POST-BID SUBMITTALS**

- A. Bidders who have been notified of the Owner's intent to award a contract shall submit the following items to the Construction Manager:
  - 1. A Schedule of Values utilizing the level of detail requested by the Owner (reference Section 00670).
  - 2. A list of all subcontractors and suppliers to be used, and all items of material and equipment to be incorporated into the Project (reference Section 00680).
  - 3. The name(s) of the on-site supervisor(s) whom the Bidder proposes to employ to accomplish the Work (reference Section 00690).
  - 4. Sample copies of the construction contracts are included in Sections 00510.

**1.13 OWNER'S RIGHT TO APPROVE SUPPLIERS, SUBCONTRACTORS, MATERIALS, EQUIPMENT, AND EMPLOYEES**

- A. Bidders will be required to establish, to the satisfaction of the Owner, the reliability and responsibility of proposed employees, suppliers and subcontractors, and the suitability of proposed materials and equipment.
- B. Prior to the award of a contract, the Construction Manager will notify the Bidder if the Owner has reasonable and substantial objection to any person, organization, material, or equipment listed by the Bidder. If the Owner has a reasonable and substantial objection, the Bidder shall amend their Proposal by providing an acceptable substitute. The Owner may, at their discretion, accept such a substitute, or they may disqualify the Proposal.
- C. Suppliers, subcontractors, employees, materials, and equipment proposed by the Bidder and accepted by the Owner shall be used on the Work for which they are proposed and accepted and shall not be changed except with the written approval of the Owner.

**1.14 BONDS**

- A. Refer to Section 00600 for information and instructions regarding the bond requirements of this Project.



**1.15 INSURANCE**

**1.16**

- A. Refer to Sections 00650, and 00700 for information and instructions regarding insurance requirements for this Project.

**PART 2 – FORMS FOR BIDDING**

**2.0 PROPOSAL FORMS**

- A. Bidders are required to use the forms provided by the Owner for bidding purposes.
- B. Sample form(s) and instructions are in Section 00305 of this project manual.

**PART 3 – PROCEDURES AND CONDITIONS FOR BIDDING**

**3.01 COMPLETION OF PROPOSAL FORMS**

- A. Refer to Section 00300 for detailed information and instructions regarding completion of Proposal Forms.

**3.02 SUBMISSION OF PROPOSALS**

- A. Proposals shall be submitted to:

Bay City Public Schools  
Attention, Superintendent  
601 Blend Street  
Bay City MI 48706

**Electronic Sealed bids must be submitted using Building Connected see below link.**

<https://app.buildingconnected.com/login?retUrl=%2F>

(Refer to Section 00010 – Notice to Bidders for additional information and instructions regarding the location for submittal of Proposals.)

If you want to listen in while the bids are being opened, please use this link <https://8x8.vc/wolgast/lisa.donahue>

- B. Proposals shall be submitted by **1:30 PM on Monday, November 25, 2024.**  
(Refer to Section 00010 – Notice to Bidders for additional information and instructions regarding the date and time of submittal of Proposals.)
- C. **Bidders shall bear full responsibility for delivering Proposals to the required location by the time and date established.**

**3.03 MODIFICATION OR WITHDRAWAL OF PROPOSALS**

- A. A Proposal may not be modified, withdrawn, or cancelled by the Bidder within sixty (60) days following the time and date designated for the receipt of Proposals and the Bidder so agrees in submitting their Proposals.
- B. Prior to the time and date designated for receipt of Proposals, Proposals may be modified or withdrawn. Modifications and withdrawals shall be in writing or by telegram. If by telegram, written confirmation shall have been mailed and postmarked before the date and time set for receipt of Proposals. Telegraphic communications shall be worded so that the amounts of the original Proposals are not revealed.
- C. Withdrawn Proposals may be resubmitted up to the time and date designated for receipt of Proposals.

**3.04 BIDDERS' REPRESENTATION AND ACKNOWLEDGEMENTS**

A. In submitting their Proposal, each Bidder represents that:

1. They have read and understand the Bidding Documents.
2. Their Proposal is made in accordance with the Bidding Documents.
3. They have visited the Project Site and have familiarized themselves with the local conditions under which the Work they are bidding will be performed.
4. **They will accept the contract award, regardless of the identity of other Contractors on the Project.**
5. **During contract performance, they will not interrupt their Work nor impede the progress of other Contractors as a result of prejudice based on sex, race, color, creed, labor affiliation, or lack of labor affiliation of Contractors or employees of Contractors engaged on this Project.**

B. In submitting their Proposal each bidder acknowledges:

1. The right of the Owner to accept or reject any Proposal, to waive any informality or irregularity in any Proposal received, and to accept other than the low Bid.
2. The right of the Owner to accept any combination of Bid Divisions they desire.
3. The right of the Owner to award contracts in their own best interest.

**3.05 OTHER INFORMATION**

A. All Bidders shall comply with the requirements of the Bidding Documents, Addenda, and all applicable codes, laws, and regulations in preparing and submitting their Proposals.

B. Refer to Section 00300 – Instructions for Proposals and Bid Division Descriptions for additional information and instructions regarding Proposals.

**END OF SECTION 00100**

**PART 1 – GENERAL**

**1.01 PROPOSAL FORMS**

- A. A separate set of Proposal Forms, Bid Division Descriptions, Drawings, Contract Conditions, Specifications, and Preliminary Milestone Schedule(s).
- B. Bidders shall use the copies of Proposal Forms included in the separate sets of Bidding Documents. Copies of the Proposal Forms are acceptable.

**1.02 BID DIVISION DESCRIPTIONS**

- A. Section 00309 contains the Bid Division Descriptions. Each Bid Division Description represents a separate, self-contained Scope of Work. Bid Divisions are the basic divisions of Work into which the Project has been divided for bidding and construction.

**PART 2 – PROPOSAL FORMAT**

**2.01 BID PROPOSALS**

- A. Bidders are required to use the Proposal Forms provided by the Owner.
- B. A complete Proposal consists of:
  - 1. **Submit 2 complete copies of your proposal and bonds, on the Proposal Form – Section 00305.**
  - 2. Alternate Pricing forms (if applicable to this Project).
- C. Each Proposal shall have a Bid Security in the amount of five percent (5%) attached to the proposal.
- D. All spaces provided on the Proposal Form(s) shall be filled in. If any space provided is not utilized by the Bidder, that space shall be filled in with the notation “N/A” (Not Applicable).
- E. The Proposal Form(s) shall be filled in by typewriter or printed manually in ink.
- F. Where indicated, all sums shall be expressed in words and figures.  
**In case of discrepancy, the words shall govern.**
- G. **Bidders shall not make unsolicited notations or statements on the Proposal Form(s). Alteration of the Proposal Form(s) is not permitted.**
- H. All changes to and erasures of the Bidder’s entries shall be initialed by the signer of the Proposal.
- I. Each Proposal shall include the legal name of the Bidder and a statement regarding whether the Bidder is a sole proprietor, a partnership, a corporation, or other type of legal entity. Proposals submitted by corporations shall have the state of incorporation noted and shall have corporate seals affixed. Any Bid submitted by an agent shall have a current Power of Attorney attached, certifying the agent’s power to bind the Bidder.

**2.02 ALTERNATES**

- A. **All requested Alternates shall be bid with all lines completed or the Proposal will be considered incomplete.**

**PROPOSAL FOR MULTIPLE BID DIVISIONS**

- A. Each Bidder shall submit only one (1) Proposal for each Bid Division the Contractor is bidding. There is no limit to the number of Bid Divisions a Bidder may bid on.
- B. Each Bidder is required to include a separate Bid for each Bid Division in order to be considered for a contract award. Spaces are provided in the Proposal Form(s) to reference multiple Proposals.
- C. Multiple Bid Proposals shall contain separate Proposal Forms for each Bid Division being bid.
  - 1. Each Proposal Form shall be fully completed.
  - 2. The Bid for each Bid Division shall be independent of Bids for other Bid Divisions.
  - 3. Bidders shall use the "Combined Bid Deduct" section of the Proposal Form (Section 00305) to finalize multiple Bid Proposals.

**PART 3 – COMPLETION OF PROPOSAL FORMS AND SEALED BID ENVELOPE**

**3.01 PROPOSAL FOR (SECTION 00305)**

- A. Each Bid Division shall be submitted in a separate envelope, with a separate Bid Bond.
- B. Fill in the legal name of the Bidder, the address, the telephone number, fax number, contact name and contact email.
- C. Fill in the name and number of the Bid Division covered by the Proposal.
- D. Fill in the numbers and dates of all Addenda issued, received, and considered a part of the Proposal. Proposals must include acknowledgement of all Addenda issued up to the Bid Date.
- E. On the Proposal Form(s), fill in the Lump Sum Base Bid for the Bid Division. Fill in the amount in both words and figures. DO NOT include costs for Performance Bonds or Labor/Materials Payment Bond in the Base Bid amount.
- F. Fill in the cost(s) for Performance Bond(s) and Labor and Material Payment Bond(s) in the amount(s) requested (reference Section 00600), in the space(s) provided. Fill in the amount(s) in both words and figures.
- G. In the "Combined Bid Deduct" portion of the Proposal Form(s), state the amount(s) to be deducted from the total of your Base Bid should you be awarded contracts for multiple Bid Divisions. State the numbers of the Bid Divisions included in each combination, and the amount to be deducted from the total of all Base Bids in each combination.
- H. If Alternate Bid(s) have been requested, fill in the Lump Sum Bid for each Alternate Bid in the space provided. DO NOT include costs for Performance Bonds or Labor and Material Payment Bonds.
- I. Fill in the anticipated date(s) of indicated Shop Drawings and/or Sample Submittal(s) in the space(s) provided.
- J. Fill in the anticipated number of weeks needed for fabrication of indicated items, beginning on the Bid Date.
- K. Fill in the anticipated number of on-site staff.
- L. Fill in the anticipated number of days to complete the Work.
- M. Fill in the anticipated number of weeks needed for delivery of indicated items, beginning on the Bid Date.
- N. Fill in the names of the manufacturers, suppliers, and/or subcontractors of indicated items.

- O. If you choose to submit Voluntary Alternates or Value Engineering Suggestions, please summarize your suggestions and state the amount to be deducted from the Base Bid.
- P. Review the "Bid Division Responsibilities" portion of the Proposal Form.
- Q. Review the "Schedule" portion of the Proposal Form.
- R. If the Proposal includes exceptions or substitutions to any part of the Bidding Documents or the Contract Documents, state the exceptions or substitutions in writing on the Proposal Form.
- S. Fill in the Bidder's legal name.
- T. Indicate the Bidder's status as a sole proprietor, partnership, corporation, or other type of entity.
- U. Sign the Proposal Form in the space provided.
- V. Type or print the signer's name and title in the spaces provided below the signature line.
- W. Date the Proposal Form in the space provided.
- X. Provide a phone number, fax number and email address on the space provided.

**3.02 SEALED BID ENVELOPE**

- A. Bids submitted must be sealed, preferably in a 9" x 12" manila envelope.
- B. Each Bid Division is to be submitted in a separate envelope.
- C. **Label the sealed bid as follows:**

<b>TO:</b>	<b>Bay City Public Schools</b> <b>Attn: Superintendent</b> <b>601 Blend Street</b> <b>Bay City MI 48706</b>
	<b><u>SEALED BID FOR:</u></b>
	<b>Bay City Public Schools</b> <b>2020 Bond Series 3 - Phase 4 Western HS Bathrooms</b>
	<b>Bid Division No:</b> _____

**END OF SECTION 00300**

**Project: Bay City Public Schools  
2020 Bond Series 3 - Phase 4 Western HS Bathrooms**

Submitted By: \_\_\_\_\_  
(Bidder's Company Name)

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

City / State / Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Email: \_\_\_\_\_

**Bid Proposal Deadline: Prior to Monday, November 25, 2024 at 1:30 PM (local time) to:**

**Bay City Public Schools  
Attention: Superintendent  
601 Blend Street  
Bay City MI 48706.**

**Electronic Sealed bids must be submitted using Building Connected see below link.**  
<https://app.buildingconnected.com/login?retUrl=%2F>

**Bid Division Name:** \_\_\_\_\_

**Bid Division Number:** \_\_\_\_\_

**ADDENDA**

We (the Bidder) acknowledge receipt of the following Addenda:

- Addendum #\_\_ Dated \_\_\_\_\_
- Addendum #\_\_ Dated \_\_\_\_\_
- Addendum #\_\_ Dated \_\_\_\_\_

**BID BOND ATTACHED?**

- Yes, 5% Bid Bond is Attached**
- Certified Check/Money Order for 5% of Base Bid is Attached**

**BASE BID for Bay City PS – S3 PH 4 Western HS Bathrooms (not including Labor Bond, Material Bond, and/or Performance Bond Costs):**

\_\_\_\_\_ Dollars and 00/100ths

\$ \_\_\_\_\_

**BOND COST for Bay City PS – S3 PH 4 Western HS Bathrooms (Cost to provide Labor Bond, Material Bond, and/or Performance Bonds on Base Bid):**

\_\_\_\_\_ Dollars and 00/100ths

\$ \_\_\_\_\_

**COMBINED BID DEDUCT**

If awarded a contract for the Work, combining the following Bid Division(s), the corresponding amount(s) may be deducted from the Base Bid(s) of each of the involved Bid Divisions.

Bid Divisions Combined

---

---

---

---

Deduct from each Bid Division:

---

---

---

---

**ALTERNATES**

**Alternate 1 – Acoustical Lay-In Ceilings:**

**Base Bid** – Remove existing acoustical lay-in ceiling where, shown and replace with new.

**Alternate** – Salvage existing acoustical ceiling tiles for re-installation. Paint ceiling grid in place, reinstall ceiling tiles. Broken or stained tiles to be replaced from Owner’s stock.

Alternate 1 - Add/Deduct \_\_\_\_\_

Alternate 1 - Bond \_\_\_\_\_

**Alternate 2 – Toilet Compartments:**

**Base Bid** – Provide products manufactured by Scranton Products as specified.

**Alternate** – Provide products manufactured by one of listed Substitute Manufacturers in panel color and texture to match base bid specified panel.

Alternate 2 - Add/Deduct \_\_\_\_\_

Alternate 2 - Bond \_\_\_\_\_

**SUBMITTALS**

Anticipated Date of Shop Drawing Submittal at Post Bid Interview: \_\_\_\_\_

Anticipated Number of Days to Begin: \_\_\_\_\_

Anticipated Number of On-site Staff: \_\_\_\_\_

Anticipated Number of Days to Complete: \_\_\_\_\_

Anticipated Number of Days for Delivery of Needed Items: \_\_\_\_\_

Proposed Manufacturers, Suppliers, and/or Subcontractors:

<u>Item(s)</u>	<u>Manufacturer/Subcontractor/Supplier</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

**VOLUNTARY ALTERNATES / VALUE ENGINEERING SUGGESTIONS**

We suggest the following alternate procedure(s) and/or material(s):

<u>Summary of Suggestions</u>	<u>Deduct from Base Bid</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

**BID DIVISION RESPONSIBILITY**

We recognize that the Scope of Work within a Bid Division represents a construction segment that is not necessarily restricted to a single construction trade, and our Proposal includes work of all trades required to fully and successfully complete all of the Work required in the Bid Division(s) we have submitted Proposals for:

**SCHEDULE**

We have reviewed the Preliminary Milestone Schedule and hereby endorse it with regard to the Work of Bid Division(s) we have bid. ALL WORK MUST BE COMPLETED BY **Refer to Milestone Schedule.**



**EXCEPTIONS AND/OR SUBSTITUTIONS**

We have submitted our Proposal, as specified, complete and in accordance with the Bidding Documents, including Addenda and the Contract Documents, without exceptions or substitutions, unless otherwise noted in the "Voluntary Alternate / Value Engineering Suggestions" portion of this Proposal Form.

**EXECUTION**

Name of Bidder: \_\_\_\_\_

Bidder's Status:  
\_\_ Corporation; \_\_ Partnership; \_\_ Sole Proprietor; \_\_ Other: (Please Specify: \_\_\_\_\_)

By/Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

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

Email: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

**END OF SECTION 00305**

**Familial Relationship Sworn Statement**

\_\_\_\_\_ does hereby disclose that per MCL 380.1267:  
Company Name

**YES**, there exists a familial relationship between the Owner of the project or any member of their Board, or Board of Directors, or the Superintendent of the School district, intermediate superintendent of the intermediate school district, or chief executive officer of the public-school academy and the Owner or an employee(s) of \_\_\_\_\_.  
Company Name

Disclosure Between:

Name \_\_\_\_\_ AND Name \_\_\_\_\_

Title: \_\_\_\_\_ Title: \_\_\_\_\_

Relationship: \_\_\_\_\_ Relationship: \_\_\_\_\_

**NO**, there does not exist a familial relationship between the Owner of the project or any member of their Board, or Board of Directors, or the Superintendent of the School district, intermediate superintendent of the intermediate school district, or chief executive officer of the public school academy and the Owner or an employee(s) of \_\_\_\_\_.  
Company Name

Name (printed): \_\_\_\_\_

Position: \_\_\_\_\_

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

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

Notary Public(printed): \_\_\_\_\_

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

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

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

Affix Notary Seal Here:



**END OF SECTION 00306**

## Iran Business Relationship Affidavit

Effective April 1, 2013, all bids, proposals, and/or qualification statements received in the State of Michigan must comply with the "Iran Economic Sanctions Act". The following certification is to be signed and included at time of submittal.

### CERTIFICATION

Pursuant to the Michigan Iran Economic Sanctions Act, 2012 P.A. 517, by submitting a bid, proposal or response, Respondent certifies, under civil penalty for false certification, that it is fully eligible to do so under law and that it is not an "Iran linked business," as that term is defined in the Act.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Company

\_\_\_\_\_  
Date

**END OF SECTION 00307**

**IRAN ECONOMIC SANCTIONS ACT**  
**Act 517 of 2012**

AN ACT to prohibit persons who have certain economic relationships with Iran from submitting bids on requests for proposals with this state, political subdivisions of this state, and other public entities; to require bidders for certain public contracts to submit certification of eligibility with the bid; to require reports; and to provide for sanctions for false certification.

**History:** 2012, Act 517, Eff. Apr. 1, 2013.

*The People of the State of Michigan enact:*

**129.311 Short title.**

Sec. 1. This act shall be known and may be cited as the "Iran economic sanctions act".

**History:** 2012, Act 517, Eff. Apr. 1, 2013.

**129.312 Definitions.**

Sec. 2. As used in this act:

(a) "Energy sector of Iran" means activities to develop petroleum or natural gas resources or nuclear power in Iran.

(b) "Investment" means 1 or more of the following:

(i) A commitment or contribution of funds or property.

(ii) A loan or other extension of credit.

(iii) The entry into or renewal of a contract for goods or services.

(c) "Investment activity" means 1 or more of the following:

(i) A person who has an investment of \$20,000,000.00 or more in the energy sector of Iran.

(ii) A financial institution that extends \$20,000,000.00 or more in credit to another person, for 45 days or more, if that person will use the credit for investment in the energy sector of Iran.

(d) "Iran" means any agency or instrumentality of Iran.

(e) "Iran linked business" means either of the following:

(i) A person engaging in investment activities in the energy sector of Iran, including a person that provides oil or liquefied natural gas tankers or products used to construct or maintain pipelines used to transport oil or liquefied natural gas for the energy sector of Iran.

(ii) A financial institution that extends credit to another person, if that person will use the credit to engage in investment activities in the energy sector of Iran.

(f) "Person" means any of the following:

(i) An individual, corporation, company, limited liability company, business association, partnership, society, trust, or any other nongovernmental entity, organization, or group.

(ii) Any governmental entity or instrumentality of a government, including a multilateral development institution, as defined in section 1701(c)(3) of the international financial institutional act, 22 USC 262r(c)(3).

(iii) Any successor, subunit, parent company, or subsidiary of, or company under common ownership or control with, any entity described in subparagraph (i) or (ii).

(g) "Public entity" means this state or an agency or authority of this state, school district, community college district, intermediate school district, city, village, township, county, public authority, or public airport authority.

**History:** 2012, Act 517, Eff. Apr. 1, 2013.

**129.313 Ineligibility of Iran linked business to submit request for proposal bid; certification.**

Sec. 3. (1) Beginning April 1, 2013, an Iran linked business is not eligible to submit a bid on a request for proposal with a public entity.

(2) Beginning April 1, 2013, a public entity shall require a person that submits a bid on a request for proposal with the public entity to certify that it is not an Iran linked business.

**History:** 2012, Act 517, Eff. Apr. 1, 2013.

**129.314 Effect of false certification.**

Sec. 4. If a public entity determines, using credible information available to the public, that a person has submitted a false certification under section 3(2), the public entity shall provide the person with written notice of its determination and of the intent not to enter into or renew a contract with the person. The notice shall include information on how to contest the determination and specify that the person may become eligible for a

future contract with the public entity if the person ceases the activities that cause it to be an Iran linked business. The person shall have 90 days following receipt of the notice to respond in writing and to demonstrate that the determination of false certification was made in error. If a person does not make that demonstration within 90 days after receipt of the notice, the public entity may terminate any existing contract and shall report the name of the person to the attorney general together with information supporting the determination.

**History:** 2012, Act 517, Eff. Apr. 1, 2013.

**129.315 Civil action; penalty.**

Sec. 5. The attorney general may bring a civil action against any person reported under section 4. If a civil action results in a finding that the person submitted a false certification, the person is responsible for a civil penalty of not more than \$250,000.00 or 2 times the amount of the contract or proposed contract for which the false certification was made, whichever is greater, the cost of the public entity's investigation, and reasonable attorney fees, in addition to the fine. A person who submitted a false certification shall be ineligible to bid on a request for proposal for 3 years from the date the public entity determines that the person has submitted the false certification.

**History:** 2012, Act 517, Eff. Apr. 1, 2013.

**129.316 Conditional effect.**

Sec. 6. The provisions of this act are effective only if Iran is a state sponsor of terror as defined under section 2 of the divestment from terror act, 2008 PA 234, MCL 129.292.

**History:** 2012, Act 517, Eff. Apr. 1, 2013.

**END OF SECTION 00307**

**Bid Division: 060000 – General Trades**

**Bid to Include:**

**Total Responsibility for Specification Sections:**

Section 024119 – Selective Demolition  
Section 042000 – Unit Masonry  
Section 055000 – Metal Fabrications  
Section 061000 – Miscellaneous Rough Carpentry  
Section 083113 – Access Doors and Frames  
Section 095113 – Acoustical Panel Ceilings  
Section 102113.19 – Solid Polymer Toilet Compartments  
Section 102800 – Toilet and Bath Accessories

**Limited Responsibility for Specification Sections (as it relates to work in this Bid Division):**

Section 079200 – Joint Sealants (As it relates to work in this Bid Division)

**Provide all labor, materials, tools, and equipment necessary to perform the work of the specified bid sections. The contractor must also furnish, deliver, unload, store, protect, erect and install all items required for the completion of the work of this bid division in compliance with all drawings and specifications for a complete operational system including but not limited to:**

**General Inclusions:**

1. There is no general contractor associated with this project; any and all reference to a “general contractor” related to the work of this bid division shall be understood to mean the contractor of this bid division.
2. The contractor for this bid division work is required to include but is not limited to all items, services, tasks, materials, personnel, equipment, etc. identified in this bid division description regardless of the presence of language in other bid division descriptions that is the same or is similar to that found in this contractor’s bid division description.
3. Coordination of the work of this bid division with any and all work of other bid division contractors for the scheduling and integration of the work of this contractor.
4. All contractors are responsible for the entire set of plans and specifications, including tables, schedules, and notes.
5. Provide continuous housekeeping and clean-up, and proper legal off-site disposal of any debris generated by this Bid Division’s work.
6. The contractor is responsible for own dumpster(s) and all removal and disposal charges thereof. (Use of the Owner’s dumpsters is strictly prohibited.)
7. All Contractors are required to inspect the existing project components and are to include all work necessary to complete the work to deliver a fully operational system in compliance with all governing codes.
8. This Contractor shall be responsible for performing all work in full compliance with all health and safety standards including Asbestos Awareness and Notification, Lead Paint Abatement, and all MIOSHA Standards. This Contractor shall also be responsible for satisfying all safety violations and/or fines resulting from the actions or lack of action by this Contractor at the sole expense of this Contractor.
9. Any contractor who makes a mistake by installing their product on another Contractor’s obvious faulty work will assume responsibility for repair of said work.
10. This contractor shall repair and restore any damaged area to an original or better condition with no detectable evidence that the area has been repaired. Repairs must be done by personnel qualified in the execution of the work skilled and licensed in that trade. Whenever possible, repairs to work shall be done by the original installer of the work.
11. Submittal of all insurance, unit pricing, schedule of values, required product data and shop drawings within (2) two weeks of Owner’s Notice to commence work.
12. Must provide all submittals within 20 working days of contract award or sooner, unless specifically clarified with the construction manager prior to contract award.
13. Provide all layout and measurements required to perform the work of this Bid Division.

**Wolgast Corporation – Construction Management**

**Bid Division: 060000 – General Trades**

14. The Owner reserves the right to salvage any materials removed from the site during the duration of the project.
15. Coordinate delivery of materials with Construction Manager (48 hours) in advance of the delivery and provide proper personnel and equipment to perform the unloading.
16. Contractor shall submit to the field construction manager a complete written daily field report stating the work being done on site and the number of employees performing the work for each day the Contractor has representatives on site.
17. Contractor shall have a supervisor on site at all times when a crew is present on the job.
18. On Friday, or the last workday of each week, the Contractor must update the Master Copy of As-Builts, as it applies to the work of their Bid Division.
19. **Wolgast uses Software for their CM Software. Please note: We will upload all drawings, and drawing revisions as they are approved, to the Drawings tool. However, it is each contractor's responsibility to verify that they are working from the most up to date, approved, drawings.**

**Division Inclusions:**

1. Provide, receive, store, protect, inventory, and install all described bid items.
2. Provide proper legal off-site disposal off all construction debris generated by the described work.
3. Remove items indicated: clean, service and otherwise prepare them for reuse; store and protect against damage. Reinstall items in the same locations or in locations indicated.
4. Cover all countertops with double layered corrugated cardboard.
5. Clean and dust all casework upon completion.
6. Clean, prep and adjust all equipment immediately prior to Owner occupancy.
7. Patch all demolished areas and items affected by demolition to a condition ready to receive finishes and finish materials.
8. Furnish and install all joint sealants and fire stopping as indicated in specifications and drawings including but not limited to perimeter joints of doors and louvers at interior and exterior, perimeter joints between interior wall surfaces and frames of interior doors and all other joints indicated.
9. Provide all temporary enclosures as required, review demo drawings throughout the duration of construction.
10. Contractor shall furnish and install temporary insulated weather-tight closures of openings created as a result of the work in this scope in exterior surfaces to provide acceptable working conditions and protection for materials, to allow for temporary heating, and for building security. Provide doors with self-closing hardware and locks.
11. Provide all wood framing, plywood and nailers as shown and specified.

**Project Inclusions:**

1. Price all alternates
2. For Alternate 1 this Contractor is to remove and reinstall ceiling tiles and replace damaged ones with Owner stock.
3. Include an allowance of \$5,000 in your bid to be used at the direction of the Construction Manager.
4. Include all removals called out on the drawings with the exception of mechanical, electrical, and plumbing.
5. Remove existing access panels as noted.
6. Salvage all items noted on the drawings and turn them over to the owner.
7. Include floor tile power washing as noted in the drawings.
8. Patch exposed anchor holes in walls with epoxy at glazed CMU and grout at painted CMU.
9. Detach and reinstall restroom accessories as noted on the drawings.
10. Provide and install noted Restroom accessories, grab bars, mirrors, etc. and required blocking.
11. Install Owner provided accessories.
12. Provide and install new stainless-steel plate covers.
13. Provide and install new toilet compartments.
14. Provide and install new ceiling grid and tile.
15. When working with ceiling grid and tile this Contractor is responsible for working with any escutcheon rings for sprinkler heads.

**Bid Division:               060000 – General Trades**

**Excludes:**

1. All demolition of conduits, ducts, pipes, fixtures, etc. (demolition required for all mechanical, plumbing, and electrical work) is to be performed by the specific mechanical, plumbing and electrical contractors.

**Consideration for award:**

The ability to begin as soon as areas of work become available. To have proper equipment and responsible personnel to complete the above list of work. To repair any adjacent materials damaged in the execution of the above-listed work. Close cooperation with the Construction Manager and other bid divisions to provide input to develop a working schedule. An approved schedule of values will be required before approval is granted for the first payment request. Expediting communication and follow-up as required.

**END OF BID DIVISION 060000**



**Submittal Packages**

Spec Section	#	Rev.	Title	Type	Status	Responsible Contractor	Submit By	Received From	Received Date	Ball In Court	Approvers	Response	Sent Date	Returned Date	Final Due Date	Distributed Date
<b>#1 06 00 00 - General Trades</b>																
102800 - Toilet, Bath, and Laundry Accessories	102800-1	0	Toilet Bath Laundry Accessories - product data	Product Information	Draft											
102113 - Toilet Compartments	102113-3	0	Toilet Compartments - color samples	Sample	Draft											
102113 - Toilet Compartments	102113-2	0	Toilet Compartments - Shop Drawings	Shop Drawing	Draft											
102113 - Toilet Compartments	102113-1	0	Toilet Compartments - Product Data	Product Information	Draft											
095113 - Acoustical Panel Ceilings	095113-2	0	Acoustical Panel Ceilings - Samples	Sample	Draft											
095113 - Acoustical Panel Ceilings	095113-1	0	Acoustical Panel Ceilings - product data	Product Information	Draft											
083113 - Access Doors and Frames	083113-2	0	Access Doors and Frames - product schedule	Document	Draft											
083113 - Access Doors and Frames	083113-1	0	Access Doors and Frames - product data	Product Information	Draft											
079200 - Joint Sealants	079200-2	0	Joint Sealant - color samples	Sample	Draft											
079200 - Joint Sealants	079200-1	0	Joint Sealant - product data	Product Information	Draft											
061053 - Miscellaneous Rough Carpentry	061053-1	0	Misc Rough Carpentry - Product data for items listed	Document	Draft											
055000 - Metal Fabrications	055000-1	0	Metal Fab - shop drawings	Shop Drawing	Draft											
042000 - Unit Masonry	042000-4	0	Unit Masonry - Mix Design	Other	Draft											
042000 - Unit Masonry	042000-3	0	Unit Masonry - Samples	Sample	Draft											
042000 - Unit Masonry	042000-2	0	Unit Masonry - Shop Drawings	Shop Drawing	Draft											
042000 - Unit Masonry	042000-1	0	Unit Masonry - Product Data	Document	Draft											
<b>#2 06 00 00 - General Trades - Start Up</b>																
	10	0	Hazardous/AHERA Notifications		Draft											
	9	0	Sub/Supplier Form		Draft											
	8	0	Safety Data Sheets (SDS)		Draft											
	7	0	Safety Policy		Draft											
	6	0	On Site Employee List		Draft											
	5	0	Insurance/Letter of Compl		Draft											
	4	0	Payment/Performance Bonds		Draft											
	3	0	Contracts Signed/Returned		Draft											
	2	0	Schedule of Values		Draft											
	1	0	Post Bid Interview/Proposal Forms		Draft											
<b>#3 06 00 00 - General Trades - Close Out</b>																
102800 - Toilet, Bath, and Laundry Accessories	102800-3	0	Toilet Bath Laundry Accessories - maintenance	Closeouts	Draft											
102800 - Toilet, Bath, and Laundry Accessories	102800-2	0	Toilet Bath Laundry Accessories - Warranty	Closeouts	Draft											
102113 - Toilet Compartments	102113-5	0	Toilet Compartments - Warranty	Closeouts	Draft											
102113 - Toilet Compartments	102113-4	0	Toilet Compartments - Maintenance	Closeouts	Draft											
095113 - Acoustical Panel Ceilings	095113-3	0	Acoustical Panel Ceilings - Maintenance	Closeouts	Draft											
079200 - Joint Sealants	079200-3	0	Joint Sealant - Warranty	Closeouts	Draft											

Spec Section	#	Rev.	Title	Type	Status	Responsible Contractor	Submit By	Received From	Received Date	Ball In Court	Approvers	Response	Sent Date	Returned Date	Final Due Date	Distributed Date
	21	0	O&M Manuals		Draft											
	20	0	Warranties for Equipment Installed		Draft											
	19	0	Asbestos Materials Affidavits		Draft											
	18	0	Signed Hazardous Materials		Draft											
	17	0	Insurance Up-To-Date		Draft											
	16	0	All CO Signed/Returned		Draft											
	15	0	As Built Drawings		Draft											
	14	0	Completed Punch List		Draft											
	13	0	Substantial Completion		Draft											
	12	0	Consent of Surety		Draft											
	11	0	Contractor (2) Yr Guarantee		Draft											

**Bid Division: 099000 – Painting**

**Bid to Include:**

**Total Responsibility for Specification Sections:**

Section 099123 – Interior Painting

**Limited Responsibility for Specification Sections (as it relates to work in this Bid Division):**

Section 079200 – Joint Sealants (Interior Control Joints and all dissimilar products)

**Provide all labor, materials, tools, and equipment necessary to perform the work of the specified bid sections. The contractor must also furnish, deliver, unload, store, protect, erect and install all items required for the completion of the work of this bid division in compliance with all drawings and specifications for a complete operational system including but not limited to:**

**General Inclusions:**

1. There is no general contractor associated with this project; any and all reference to a “general contractor” related to the work of this bid division shall be understood to mean the contractor of this bid division.
2. The contractor for this bid division work is required to include but is not limited to all items, services, tasks, materials, personnel, equipment, etc. identified in this bid division description regardless of the presence of language in other bid division descriptions that is the same or is similar to that found in this contractor’s bid division description.
3. Coordination of the work of this bid division with any and all work of other bid division contractors for the scheduling and integration of the work of this contractor.
4. All contractors are responsible for the entire set of plans and specifications, including tables, schedules, and notes.
5. Provide continuous housekeeping and clean-up, and proper legal off-site disposal of any debris generated by this Bid Division’s work.
6. The contractor is responsible for their own dumpster(s) and all removal and disposal charges thereof. (Use of the Owner’s dumpsters is strictly prohibited.)
7. All Contractors are required to inspect the existing project components and are to include all work necessary to complete the work to deliver a fully operational system in compliance with all governing codes.
8. This Contractor shall be responsible for performing all work in full compliance with all health and safety standards including Asbestos Awareness and Notification, Lead Paint Abatement, and all MIOSHA Standards. This Contractor shall also be responsible for satisfying all safety violations and/or fines resulting from the actions or lack of action by this Contractor at the sole expense of this Contractor.
9. Any contractor who makes a mistake by installing their product on another Contractor’s obvious faulty work will assume responsibility for repair of said work.
10. This contractor shall repair and restore any damaged area to an original or better condition with no detectable evidence that the area has been repaired. Repairs must be done by personnel qualified in the execution of the work skilled and licensed in that trade. Whenever possible, repairs to the work shall be done by the original installer of the work.
11. Submittal of all insurance, unit pricing, schedule of values, required product data and shop drawings within (2) two weeks of Owner’s Notice to commence work.
12. Must provide all submittals within 20 working days of contract award or sooner, unless specifically clarified with the construction manager prior to contract award.
13. Provide all layout and measurements required to perform the work of this Bid Division.
14. The Owner reserves the right to salvage any materials removed from the site during the duration of the project.
15. Coordinate delivery of materials with Construction Manager (48 hours) in advance of the delivery and provide proper personnel and equipment to perform the unloading.

**Bid Division: 099000 – Painting**

16. Contractor shall submit to the field construction manager a complete written daily field report stating the work being done on site and the number of employees performing the work for each day the Contractor has representatives on site.
17. Contractor shall have a supervisor on site at all times when a crew is present on the job.
18. On Friday, or the last workday of each week, the Contractor must update the Master Copy of As-Built, as it applies to the work of their Bid Division.
19. **Wolgast uses Software for their CM Software. Please note: We will upload all drawings, and drawing revisions as they are approved, to the Drawings tool. However, it is each contractor's responsibility to verify that they are working from the most up to date, approved, drawings.**

**Division Inclusions:**

1. Follow room finish and door schedules.
2. Painting of all electrical and mechanical lines and equipment (as specified).
3. Paint all bulkheads.
4. All surfaces to be painted, including but not limited to drywall and masonry, are to be inspected and accepted by this contractor prior to application of paint. Surface imperfections not repaired prior to painting or submitted to the construction manager in writing as existing defects prior to painting will be repaired by the painting contractor at no additional cost.
5. The Painting Contractor is responsible for removing or protecting all cover plates, trim and other pre-finished surfaces necessary for the completion of this work scope. This Contractor is responsible for replacing anything removed upon completion of work.
6. Provide final cleaning of work prior to Owner occupancy.
7. Furnish and install all caulking required for the work of this Bid Division.
8. To repair any adjacent material damaged in the execution of the above-listed work.
9. All caulking of interior control joints
10. All caulking of interior joints between all dissimilar surfaces including door and window frames, CMU & Drywall.
11. Clean, dust and dirt off bar joist, deck and ductwork prior to painting.

**Project Inclusions:**

1. Price all alternates
2. Include an allowance of \$5,000 in your bid to be used at the direction of the Construction Manager.
3. Please note that additional preparation will be required before painting such as filling of holes, removing wall decals, and scaping paint.
4. Paint all walls, ceilings, and door frames as noted in the drawings.
5. Paint all wall or ceiling mounted mechanical equipment (diffusers, grilles, etc.) and electrical equipment (panels, etc.) the same color as the wall.
6. Paint exposed conduit or junction box.
7. Reapply sealant at joint between floor and wall. Reference Keynote 27.

**Consideration for award:**

The ability to begin as soon as areas of work become available. To have proper equipment and responsible personnel to complete the above list of work. To repair any adjacent materials damaged in the execution of the above-listed work. Close cooperation with the Construction Manager and other bid divisions to provide input to develop a working schedule. An approved schedule of values will be required before approval is granted for the first payment request. Expediting communication and follow-up as required.

END OF BID DIVISION 099000

**Wolgast Corporation – Construction Management**

**Submittal Packages**

Spec Section	#	Rev.	Title	Type	Status	Responsible Contractor	Submit By	Received From	Received Date	Ball In Court	Approvers	Response	Sent Date	Returned Date	Final Due Date	Distributed Date
<b>#4 09 90 00 - Painting</b>																
099123 - Interior Painting	099123-2	0	Interior Paint - color samples	Sample	Draft											
099123 - Interior Painting	099123-1	0	Interior Paint - product data	Product Information	Draft											
<b>#5 09 90 00 - Painting - Start Up</b>																
	10	0	Hazardous/AHERA Notifications		Draft											
	9	0	Sub/Supplier Form		Draft											
	8	0	Safety Data Sheets (SDS)		Draft											
	7	0	Safety Policy		Draft											
	6	0	On Site Employee List		Draft											
	5	0	Insurance/Letter of Compl		Draft											
	4	0	Payment/Performance Bonds		Draft											
	3	0	Contracts Signed/Returned		Draft											
	2	0	Schedule of Values		Draft											
	1	0	Post Bid Interview/Proposal Forms		Draft											
<b>#6 09 90 00 - Painting - Close Out</b>																
	21	0	O&M Manuals		Draft											
	20	0	Warranties for Equipment Installed		Draft											
	19	0	Asbestos Materials Affidavits		Draft											
	18	0	Signed Hazardous Materials		Draft											
	17	0	Insurance Up-To-Date		Draft											
	16	0	All CO Signed/Returned		Draft											
	15	0	As Built Drawings		Draft											
	14	0	Completed Punch List		Draft											
	13	0	Substantial Completion		Draft											
	12	0	Consent of Surety		Draft											
	11	0	Contractor (2) Yr Guarantee		Draft											

**Bid Division: 222300 – Plumbing & HVAC Systems**

**Bid to Include:**

**Total Responsibility for Specification Sections:**

Section 220500 – Plumbing Requirements  
Section 220510 – Plumbing Systems Testing, Cleaning, Water Treatment and Startup  
Section 220553 – Plumbing System Identifications  
Section 220600 – Plumbing Specialties  
Section 220700 – Plumbing Pipe Insulation  
Section 221000 – Plumbing Piping  
Section 230500 – HVAC Requirements  
Section 230553 – HVAC Identification  
Section 233000 – Air Distribution

**Provide all labor, materials, tools, and equipment necessary to perform the work of the specified bid sections. The contractor must also furnish, deliver, unload, store, protect, erect and install all items required for the completion of the work of this bid division in compliance with all drawings and specifications for a complete operational system including but not limited to:**

**General Inclusions:**

1. There is no general contractor associated with this project; any and all reference to a “general contractor” related to the work of this bid division shall be understood to mean the contractor of this bid division.
2. The contractor for this bid division work is required to include but is not limited to all items, services, tasks, materials, personnel, equipment, etc. identified in this bid division description regardless of the presence of language in other bid division descriptions that is the same or is similar to that found in this contractor’s bid division description.
3. Coordination of the work of this bid division with all work of other bid division contractors for the scheduling and integration of the work of this contractor.
4. All contractors are responsible for the entire set of plans and specifications, including tables, schedules, and notes.
5. Provide continuous housekeeping and clean-up, and proper legal off-site disposal of any debris generated by this Bid Division’s work.
6. The contractor is responsible for their own dumpster(s) and all removal and disposal charges thereof. (Use of the Owner’s dumpsters is strictly prohibited.)
7. All Contractors are required to inspect the existing project components and are to include all work necessary to complete the work to deliver a fully operational system in compliance with all governing codes.
8. This Contractor shall be responsible for performing all work in full compliance with all health and safety standards including Asbestos Awareness and Notification, Lead Paint Abatement, and all MIOSHA Standards. This Contractor shall also be responsible for satisfying all safety violations and/or fines resulting from the actions or lack of action by this Contractor at the sole expense of this Contractor.
9. Any contractor who makes a mistake by installing their product on another Contractor’s obvious faulty work will assume responsibility for repair of said work.
10. This contractor shall repair and restore any damaged area to an original or better condition with no detectable evidence that the area has been repaired. Repairs must be done by personnel qualified in the execution of the work skilled and licensed in that trade. Whenever possible, repairs to work shall be done by the original installer of the work.
11. Submittal of all insurance, unit pricing, schedule of values, required product data and shop drawings within (2) two weeks of Owner’s Notice to commence work.

**Bid Division: 222300 – Plumbing & HVAC Systems**

12. Must provide all submittals within 20 working days of contract award or sooner, unless specifically clarified with the construction manager prior to contract award.
13. Provide all layout and measurements required to perform the work of this Bid Division.
14. The Owner reserves the right to salvage any materials removed from the site during the duration of the project.
15. Coordinate delivery of materials with Construction Manager (48 hours) in advance of the delivery and provide proper personnel and equipment to perform the unloading.
16. Contractor shall submit to the field construction manager a complete written daily field report stating the work being done on site and the number of employees performing the work for each day the Contractor has representatives on site.
17. Contractor shall have a supervisor on site at all times when a crew is present on the job.
18. On Friday, or the last workday of each week, the Contractor must update the Master Copy of As-Built, as it applies to the work of their Bid Division.
19. **Wolgast uses Software for their CM Software. Please note: We will upload all drawings, and drawing revisions as they are approved, to the Drawings tool. However, it is each contractor's responsibility to verify that they are working from the most up to date, approved, drawings.**

**Division Inclusions:**

1. Provide all blocking required for plumbing fixture mounting.
2. Removal of all plumbing and heating fixtures.
3. Provide all final plumbing hook-ups to all plumbing related fixtures and equipment.
4. Maintain fire rating in all walls penetrated.
5. Provide all required layouts and verify that no conflict occurs with other trades.
6. Provide all permits required.
7. Provide temporary water distribution as required.
8. Furnish test and balance reports.
9. The contractor shall coordinate phased delivery of all pre-purchased equipment with the supplier.
10. Contractor shall maintain existing HVAC systems in fully functional order in occupied areas of the building throughout the duration of the project.
11. Remove, clean and reinstall all existing grids, vents, registers and diffusers including those mounted in metal ceiling grid systems.

**Project Inclusions:**

1. Price all alternates
2. Include an allowance of \$5,000 in your bid to be used at the direction of the Construction Manager.
3. Include all plumbing and mechanical removals noted per the drawings.
4. Supply and install new plumbing fixtures as noted.
5. Supply and install new HVAC as noted
6. All existing plumbing fixtures need to be tightened as needed.
7. Apply new sealant around all existing plumbing fixtures.
8. Provide and install new fixture parts as noted on the drawings.
9. Note that for new mechanical grilles / diffusers they need to be extended from existing ductwork.
10. The baseboard heater in room K114 needs to be rehung.

**Consideration for award:**

The ability to begin as soon as areas of work become available. To have proper equipment and responsible personnel to complete the above list of work. To repair any adjacent materials damaged in the execution of the above-listed work. Close cooperation with the Construction Manager and other bid divisions to provide input to develop a working schedule. An approved schedule of values will be required before approval is granted for the first payment request. Expediting communication and follow-up as required.

**Submittal Packages**

Spec Section	#	Rev.	Title	Type	Status	Responsible Contractor	Submit By	Received From	Received Date	Ball In Court	Approvers	Response	Sent Date	Returned Date	Final Due Date	Distributed Date
<b>#7 22 23 00 - Plumbing &amp; HVAC Systems</b>																
22 05 53 - Plumbing System Identification	22 05 53-3	0	Plumbing ID - product data	Other	Draft											
22 05 53 - Plumbing System Identification	22 05 53-2	0	Plumbing ID - valve chart and schedule	Other	Draft											
22 05 53 - Plumbing System Identification	22 05 53-1	0	Plumbing ID - list of wording	Other	Draft											
22 05 10 - Plumbing Testing, Cleaning, Water Treatment & Startup	22 05 10-1	0	Plumbing Testing - product data	Other	Draft											
<b>#8 22 23 00 - Plumbing &amp; HVAC Systems - Start Up</b>																
	11	0	Copy of Permits		Draft											
	10	0	Hazardous/AHERA Notifications		Draft											
	09	0	Sub/Supplier Form		Draft											
	08	0	Safety Data Sheets (SDS)		Draft											
	07	0	Safety Policy		Draft											
	06	0	On Site Employee List		Draft											
	05	0	Insurance/Letter of Compl		Draft											
	04	0	Payment/Performance Bonds		Draft											
	03	0	Contracts Signed/Returned		Draft											
	02	0	Schedule of Values		Draft											
	01	0	Post Bid Interview/Proposal Forms		Draft											
<b>#9 22 23 00 - Plumbing &amp; HVAC Systems - Close Out</b>																
22 05 53 - Plumbing System Identification	22 05 53-4	0	Plumbing ID - install instructions	Closeouts	Draft											
22 05 10 - Plumbing Testing, Cleaning, Water Treatment & Startup	22 05 10-3	0	Plumbing Cleaning - owner training	Closeouts	Draft											
22 05 10 - Plumbing Testing, Cleaning, Water Treatment & Startup	22 05 10-2	0	Plumbing Testing - maintenance	Closeouts	Draft											
	23	0	Copy of Final Inspections for Permits		Draft											
	22	0	O&M Manuals		Draft											
	21	0	Warranties for Equipment Installed		Draft											
	20	0	Asbestos Materials Affidavits		Draft											
	19	0	Signed Hazardous Materials		Draft											
	18	0	Insurance Up-To-Date		Draft											
	17	0	All CO Signed/Returned		Draft											
	16	0	As Built Drawings		Draft											
	15	0	Completed Punch List		Draft											
	14	0	Substantial Completion		Draft											
	13	0	Consent of Surety		Draft											
	12	0	Contractor (2) Yr Guarantee		Draft											



**Bid Division: 260000 – Electrical**

**Bid to Include:**

**Total Responsibility for Specification Sections:**

Section 260000 – Basic Electrical Requirements  
Section 260505 – Selective Demolition for Electrical  
Section 260519 – Low-Voltage Electrical Power Conductors and Cables  
Section 260526 – Grounding and Bonding for Electrical Systems  
Section 260529 – Handers and Supports for Electrical Systems  
Section 260533.13 – Conduit for Electrical Systems  
Section 260533.16 – Boxes for Electrical Systems  
Section 260583 – Wiring Connections  
Section 260923 – Lighting Control Devices  
Section 262726 – Wiring Devices  
Section 265100 – Interior Lighting  
Section 284613 – Fire Alarm System

**Provide all labor, materials, tools, and equipment necessary to perform the work of the specified bid sections. The contractor must also furnish, deliver, unload, store, protect, erect and install all items required for the completion of the work of this bid division in compliance with all drawings and specifications for a complete operational system including but not limited to:**

**General Inclusions:**

1. There is no general contractor associated with this project; any and all reference to a “general contractor” related to the work of this bid division shall be understood to mean the contractor of this bid division.
2. The contractor for this bid division work is required to include but is not limited to all items, services, tasks, materials, personnel, equipment, etc. identified in this bid division description regardless of the presence of language in other bid division descriptions that is the same or is similar to that found in this contractor’s bid division description.
3. Coordination of the work of this bid division with any and all work of other bid division contractors for the scheduling and integration of the work of this contractor.
4. All contractors are responsible for the entire set of plans and specifications, including tables, schedules, and notes.
5. Provide continuous housekeeping and clean-up, and proper legal off-site disposal of any debris generated by this Bid Division’s work.
6. The contractor is responsible for their own dumpster(s) and all removal and disposal charges thereof. (Use of the Owner’s dumpsters is strictly prohibited.)
7. All Contractors are required to inspect the existing project components and are to include all work necessary to complete the work to deliver a fully operational system in compliance with all governing codes.
8. This Contractor shall be responsible for performing all work in full compliance with all health and safety standards including Asbestos Awareness and Notification, Lead Paint Abatement, and all MIOSHA Standards. This Contractor shall also be responsible for satisfying all safety violations and/or fines resulting from the actions or lack of action by this Contractor at the sole expense of this Contractor.
9. Any contractor who makes a mistake by installing their product on another Contractor’s obvious faulty work will assume responsibility for repair of said work.
10. This contractor shall repair and restore any damaged area to an original or better condition with no detectable evidence that the area has been repaired. Repairs must be done by personnel qualified in the execution of the work skilled and licensed in that trade. Whenever possible, repairs to the work shall be done by the original installer of the work.
11. Submittal of all insurance, unit pricing, schedule of values, required product data and shop drawings within (2) two weeks of Owner’s Notice to commence work.

**Bid Division: 260000 – Electrical**

12. Must provide all submittals within 20 working days of contract award or sooner, unless specifically clarified with the construction manager prior to contract award.
13. Provide all layout and measurements required to perform the work of this Bid Division.
14. The Owner reserves the right to salvage any materials removed from the site during the duration of the project.
15. Coordinate delivery of materials with Construction Manager (48 hours) in advance of the delivery and provide proper personnel and equipment to perform the unloading.
16. Contractor shall submit to the field construction manager a complete written daily field report stating the work being done on site and the number of employees performing the work for each day the Contractor has representatives on site.
17. Contractor shall have a supervisor on site at all times when a crew is present on the job.
18. On Friday, or the last workday of each week, the Contractor must update the Master Copy of As-Built, as it applies to the work of their Bid Division.
19. **Wolgast uses Software for their CM Software. Please note: We will upload all drawings, and drawing revisions as they are approved, to the Drawings tool. However, it is each contractor's responsibility to verify that they are working from the most up to date, approved, drawings.**

**Division Inclusions:**

1. Contractor shall maintain existing electrical systems in fully functional order in all areas of the building during the duration of the project.
2. The contractor is responsible for disconnecting, removing and legal and proper off-site disposal of all indicated existing light fixtures including ballasts and bulbs. Ballasts shall be assumed to contain PCB's. Provide Owner with appropriate documentation of disposal.
3. Remove, clean and reinstall light fixtures where indicated.
4. Provide all permits required.
5. Maintain fire rating at all walls penetrated.
6. Provide temporary lighting and power distribution. A minimum of 100 watts of temporary lighting per 250 SF of floor area.
7. Final hook-up of all equipment for other disciplines of work.
8. Furnish and install all light and power fixtures in cabinetry.

**Project Inclusions:**

1. Price all alternates
2. Include an allowance of \$5,000 in your bid to be used at the direction of the Construction Manager.
3. Include all electrical removals called out on the drawings.
4. Include all electrical and electrical fixtures.
5. This Contractor is responsible for removing and reinstalling any fire alarm devices or speakers on the acoustic ceilings system.

**Consideration for award:**

The ability to begin as soon as areas of work become available. To have proper equipment and responsible personnel to complete the above list of work. To repair any adjacent materials damaged in the execution of the above-listed work. Close cooperation with the Construction Manager and other bid divisions to provide input to develop a working schedule. An approved schedule of values will be required before approval is granted for the first payment request. Expediting communication and follow-up as required.

**END OF BID DIVISION 260000**

**Submittal Packages**

Spec Section	#	Rev.	Title	Type	Status	Responsible Contractor	Submit By	Received From	Received Date	Ball In Court	Approvers	Response	Sent Date	Returned Date	Final Due Date	Distributed Date
<b>#10 26 00 00 - Electrical</b>																
28 46 13 - FIRE ALARM SYSTEM	28 46 13-2	0	Fire Alarm - Product data - see spec	Product Information	Draft											
28 46 13 - FIRE ALARM SYSTEM	28 46 13-1	0	Fire Alarm - Shop drawings	Shop Drawing	Draft											
26 51 00 - INTERIOR LIGHTING	26 51 00-2	0	Interior Lighting - Product Data	Product Information	Draft											
26 51 00 - INTERIOR LIGHTING	26 51 00-1	0	Interior Lighting - Shop Drawings	Shop Drawing	Draft											
26 09 23 - LIGHTING CONTROL DEVICES	26 09 23-1	0	Lighting Control Devices - shop drawings	Shop Drawing	Draft											
26 00 00 - BASIC ELECTRICAL REQUIREMENTS	26 00 00-1	0	Electrical product data	Product Information	Draft											
<b>#11 26 00 00 - Electrical - Start Up</b>																
	11	0	Copy of Permits		Draft											
	10	0	Hazardous/AHERA Notifications		Draft											
	09	0	Sub/Supplier Form		Draft											
	08	0	Safety Data Sheets (SDS)		Draft											
	07	0	Safety Policy		Draft											
	06	0	On Site Employee List		Draft											
	05	0	Insurance/Letter of Compl		Draft											
	04	0	Payment/Performance Bonds		Draft											
	03	0	Contracts Signed/Returned		Draft											
	02	0	Schedule of Values		Draft											
	01	0	Post Bid Interview/Proposal Forms		Draft											
<b>#12 26 00 00 - Electrical - Close Out</b>																
28 46 13 - FIRE ALARM SYSTEM	28 46 13-3	0	Fire Alarm - Manual	Closeouts	Draft											
	23	0	Final Inspections for Permits		Draft											
	22	0	O&M Manuals		Draft											
	21	0	Warranties for Equipment Installed		Draft											
	20	0	Asbestos Materials Affidavits		Draft											
	19	0	Signed Hazardous Materials		Draft											
	18	0	Insurance Up-To-Date		Draft											
	17	0	All CO Signed/Returned		Draft											
	16	0	As Built Drawings		Draft											
	15	0	Completed Punch List		Draft											
	14	0	Substantial Completion		Draft											
	13	0	Consent of Surety		Draft											
	12	0	Contractor (2) Yr Guarantee		Draft											

**PART 1 – GENERAL**

**1.01 DEFINITION**

- A. Clarification Request forms shall be used to document all questions regarding bidding documents and technical specifications. Please use **ONE** Clarification Form for each item.
- B. The Clarification Request form follows as page 2 of this Section.

**1.02 PREPARATION OF CLARIFICATION REQUEST FORM**

- A. The Contractor shall complete the following items on the Clarification Request form:
  - 1. Date
  - 2. Contractor Name
  - 3. Contractor contact person
  - 4. Contractor email, phone, and fax number
  - 5. Item(s) for clarification
- B. The Contractor shall forward the Clarification Request form, via fax or email, to the Construction Manager **no later than 5 days prior to bid due date**. Requests from bidders for clarification, or interpretation of the bidding documents must reach the Project Team five days before the bid date, or by the date addressed in the pre-bid agenda. Any bidder clarifications which reach the project team after such dates have passed will not be considered.

**1.03 RESPONSIBILITIES FOR COMPLETION OF CLARIFICATION REQUEST FORMS**

- A. The Construction Manager shall review and number Clarification Request forms as they are received.
- B. Clarification Requests regarding BIDDING INSTRUCTIONS OR PROCEDURES shall be answered by the Construction Manager.
- C. Clarification Requests regarding the DESIGN and/or TECHNICAL SPECIFICATIONS shall be answered by the Architect. The Construction Manager shall forward technical specification clarifications to the Architect, via fax or mail, as they are received.

**1.04 RESPONSE TO CLARIFICATION REQUEST FORMS**

- A. The Architect shall review each Clarification Request form received and return responses to the Construction Manager.
- B. As noted in Items 1.03.B and 1.03.C above, it is the responsibility of both the Construction Manager and the Architect to respond to Clarification Request forms.
- C. Responses shall be issued via the "Response" section of the Clarification Request form or Addenda.

**CLARIFICATION REQUEST FORM**

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

Wolgast Clarification Request  
#: \_\_\_\_\_

To: Wolgast Corporation  
[Dale Schwerin dschwerin@wolgast.com](mailto:dschwerin@wolgast.com) or [Lisa Donahue ldonahue@wolgast.com](mailto:ldonahue@wolgast.com)  
4835 Towne Centre Road, Suite 203  
Saginaw, MI 48604  
Phone (989) 790-9120, Fax (989) 790-9063

From: \_\_\_\_\_  
Contractor Name  
\_\_\_\_\_  
Contact Name  
\_\_\_\_\_  
Email Address  
\_\_\_\_\_  
Phone # \_\_\_\_\_ Fax # \_\_\_\_\_

Bid Division # and Name: \_\_\_\_\_

CSI Code (If Applicable): \_\_\_\_\_

Drawing #: \_\_\_\_\_ Detail or Item #: \_\_\_\_\_

Reason for Request:  More Detail Needed  Engineering Clarification  Alternate Proposal  Other

Project: [Bay City Public Schools](#)

Site Location: [2020 BD S3 PH 4 Western HS Bathroom Renovations](#)

**ITEM(S) FOR CLARIFICATION OF BID: (Please use one form for each item)**

Please review and respond to the following item(s) for clarification:

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

**RESPONSE:**  ITEM TO BE INCLUDED IN ADDENDUM

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

Construction Manager: \_\_\_\_\_  
Signature Date

Architect: \_\_\_\_\_  
Signature Date

**END OF SECTION 00310**

**PART 1 – GENERAL**

**1.01 BID SECURITY**

- A. Each Proposal shall be accompanied by Bid Security pledging that the Bidder will enter into a contract with the Owner on the terms stated in the Proposal, and will, if required, furnish bonds as described in Section 00600. Should the Bidder refuse to enter into such contract or fail to furnish such Bonds, the amount of the Bid Security shall be forfeited to the Owner as liquidated damages, not as a penalty.
- B. Bid Security shall be in the amount of five percent (5%) of the Base Bid(s).
- C. Bid Security for each Proposal containing Bids for multiple Bid Divisions shall be in the amount of five percent (5%) of the total Base Bids for the highest-priced combination of Bid Divisions included in the Proposal.
- D. Bid Security may take the form of a **Bid Bond, a Cashier's Check, or a Money Order made payable to the Owner.** When submitting a Cashier's Check or Money Order a separate check or money order must accompany each Bid Division.
- E. Bid Security that is in the form of a Cashier's Check or Money Order will be returned to Bidders within a reasonable period after construction contracts have been executed, returned, and approved by the Owner.

**END OF SECTION 00410**

**PART 1 – GENERAL**

**1.01 OWNER/CONTRACTOR AGREEMENT**

- A. The Agreement between the Owner and the Contractor will be written on the Owner's standard Owner/Contractor Agreement Form. A sample of this Form appears as Section 00510.
- B. The Owner/Contractor Agreement Form will be filled in by the Owner, as appropriate for each Contractor and will be sent to each Contractor.
- C. The executed Owner/Contractor Agreement, the General Conditions and the other Contract Documents will be the entire, integrated Contract between the Owner and each Contractor.
- D. Upon receipt of an Owner/Contractor Agreement, each successful Bidder shall review it for completeness and accuracy, execute it and return it to the Owner's Representative for delivery to the Owner.
- E. Each successful Bidder shall submit all required post-bid documents, including Labor and Material Payment Bond and Performance Bond (Section 00600) unless waived by the Owner, Certificates of Insurance (Section 00650), Schedule of Values (Section 00670), Subcontractor and Supplier Listing (Section 00680), and Employee Listing (Section 00690) as a prerequisite to execution of the Owner/Contractor Agreement
- F. The Owner will execute each Owner/Contractor Agreement after it has been properly executed by the Bidder and after all required post-bid documents have been submitted.

**1.02 NOTICE TO PROCEED**

- A. The Owner may elect to issue Notices to Proceed prior to the execution of Owner/Contractor Agreements.
- B. Upon receipt of Notice to Proceed, each Contractor shall commence work in accord with the conditions contained in the Notice to Proceed
- C. Regardless of the provisions of any Notice to Proceed or of this Section, no Contractor shall commence work until all required insurance is in force and Certificates of Insurance (Section 00650) have been submitted to the Owner's Representative for delivery to the Owner.
- D. Prior to commencement of work, Contractors shall submit evidence satisfactory to the Owner that required bonds will be furnished and shall deliver the Bonds by the date the Contractor executes the Owner/Contractor Agreement.
- E. The Owner may include Notice to Proceed in Purchase Orders.

**1.03 COMMENCEMENT OF WORK**

- A. Each Contractor shall commence work immediately upon receipt of Notice to Proceed under the conditions contained in the Notice to Proceed or upon execution of an Owner/Contractor Agreement, whichever is earlier.

**END OF SECTION 00500**

**SAMPLE  
OWNER-CONTRACTOR  
CONTRACT ON  
FOLLOWING PAGE**

END OF SECTION 00510





# Document A132™ - 2019

## **Standard Form of Agreement between Owner and Contractor, Construction Manager as Adviser Edition**

**AGREEMENT** made as of the «Day» of «Month» in the year «Year»  
(in words, indicate day, month and year)

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

«Owner Name»  
«Owner Address»  
«Owner CSZ»

Telephone:  
Facsimile:

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

«Contractor»  
«Address»  
«CSZ»

Telephone:  
Facsimile:

for the following Project:  
(Name, legal status, address and other information)

«Project Description»  
«Project Name»  
«Project Address»  
«Project CSZ»

«Bid Division» - «Description»

The Construction Manager is:  
(Name, legal status, address and other information)

Wolgast Corporation  
4835 Towne Centre Road, Suite 203  
Saginaw, MI 48604  
Telephone: (989) 790-9120  
Facsimile: (989) 790-9120

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

«Architect Name»  
«Architect Address»  
«Architect CSZ»

Telephone:  
Facsimile:

The Owner and Contractor agree as set forth below.

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

This document is intended to be used in conjunction with AIA Documents A232™-2019, General Conditions of the Contract for Construction. Construction Manager as Adviser Edition: B132™-2019, Standard Form of Agreement Between Owner and Architect, Construction Manager as Adviser Edition; and C132™-2019, Standard Form of Agreement Between Owner and Construction Manager as Adviser.

AIA Document A232™-2019 is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

## TABLE OF ARTICLES

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

### ARTICLE 1 THE CONTRACT DOCUMENTS

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

### ARTICLE 2 THE WORK OF THIS CONTRACT

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

**§ 2.1** Provide all work described by but not limited to Bidding Requirements, Contract Forms and Conditions of the Contract, Additional Conditions of the Contract, General Conditions of the Contract for Construction, Division 1 General Requirements and:

**BID DIVISION:** \_\_\_\_\_ «Bid Division» - «Description»

Provide all labor, materials, tools and equipment necessary to perform the work of the specified bid sections. The Contractor must also furnish, deliver, unload, store, protect erect and install all items required for the satisfactory completion of the work of this bid division (as indicated on drawings and associated specifications.) Including but not limited to:

«Written Description» \_\_\_\_\_

**INCLUDING SECTIONS:** «Including Sections1» \_\_\_\_\_

**Limited Responsibility:** «Limited Responsibility» \_\_\_\_\_

**§ 2.2** Pre-Bid Meeting Agenda and Meeting Minutes dated: \_\_\_\_\_ «Pre Bid Date»

**§ 2.3** Post-Bid Interview dated: \_\_\_\_\_ «Post Bid Interview Date»

**§ 2.4** Pre-Construction Meeting Agenda and Meeting Minutes dated: \_\_\_\_\_ «Pre Con Date»

**§ 2.5** Performance Bond and Labor and Material Payment Bond required: \_\_\_\_\_ «Bond Required»

**§ 2.6** Project Start Date: \_\_\_\_\_ «Project Start Date»

**§ 2.7** Completion Date: \_\_\_\_\_ «Completion Date»

- § 2.8 All submittals and shop drawings required by the specifications must be submitted by: «Submittals Due By»
- § 2.9 Provide all clean-up and legal off-site disposal of all debris generated by any work performed by this Contract including general housekeeping of employee generated trash and garbage (i.e. drink cups, food wrappers, bag, etc.).
- § 2.10 The Bid Division Description(s) identify the scope of work, areas of responsibility and specific work to be included in the Contract Amount. If any conflict is found between the architect/engineer specifications and the Bid Division Descriptions regarding the scope of work to be performed, the Bid Division Description(s) shall govern. Further, if a conflict occurs between the Bidding Requirements, the General Requirements, the Specifications, the Bid Division Description(s), the Drawings, or the Addenda(s), the most stringent requirement shall apply.
- § 2.11 Other Special provisions: Article 8.6
- § 2.12 Compliance with EPA AHERA for Asbestos: The Contractor must adhere to all EPA AHERA and Michigan State Asbestos Regulations for Asbestos and other hazardous materials.
- § 2.13 Compliance with Lead-Containing Materials: ALL Contractors, Subcontractors and Sub-Subcontractors shall adhere to the Environmental Protection Agency (EPA) lead-based paint regulation titled the “Renovation, Repair and Paint (RRP) Rule”. Included under this law are “Child Occupied Facilities” (COFs). COFs encompass locations of pre-1978 constructed buildings where children under age six (6) regularly visit, such as kindergarten rooms, 1<sup>st</sup> grade classrooms, applicable restrooms, pre-school and day care centers. Therefore portions of each pre-1978 constructed school building falls under the RRP Rule. Any contractor working on this project who disturbs painted surfaces in COF spaces shall ensure that they adhere to all aspects of the RRP Rule. This included but is not limited to meeting the requirements for being a Certified Firm, having a Certified Lead Renovator involved and following applicable lead safe work practices. Furthermore, all Contractors shall be responsible to comply with all applicable Federal and Michigan State lead regulations including, but not limited to, 29CFR Part 1926.62 of the OSHA Lead Construction Standards, (Part 603 of the Michigan State Standards). All costs associated with regulatory compliance shall be borne by the Contractor.
- § 2.14 This Contractor is responsible for all safety issues for all work that he has effected until his project is complete.

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

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

- The date of this Agreement.
- A date set forth in a notice to proceed issued by the Owner.
- Established as follows:  
(Insert a date or a means to determine the date of commencement of the Work.)

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

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

#### § 3.3 Substantial Completion of the Project or Portions Thereof

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the date of Substantial Completion of the Work of all of the Contractors for the Project will be : See Milestone Schedule for details  
(Insert the date of Substantial Completion of the Work of all Contractors for the Project.)

«Substantial Completion Date»

§ 3.3.2 The Contractor agrees that time is of the essence and to start work when directed by the Construction Manager and to furnish sufficient materials and a sufficient number of properly skilled works, so as not to delay the work of any other Contractor or completion of the project.

### ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor’s performance of the Contract. The Contract Sum shall be one of the following:

(Check the appropriate box.)

- Stipulated Sum, in accordance with Section 4.2 below:
- Cost of the work plus the Contractor’s Fee without a Guaranteed Maximum Price, in accordance with Section 4.3 below:
- Cost of the Work plus the Contractor’s Fee with a Guaranteed Maximum Price, in accordance with Section 4.4 below

(Based on the selection above, complete Section 4.2, 4.3 or 4.4 below.)

§ 4.2 Stipulated Sum

§ 4.2.1 The Stipulated Sum shall be «Contract Amount» Dollars (\$«Contract Amount »), subject to additions and deductions as provided in the Contract Documents.

Contract amount includes: Base Bid \$«Base Bid», PLM Bond Amount \$«Bond Amount», Alternates \$«Alternate» totaling \$«Contract Amount ».

§ 4.2.2 Alternates

§ 4.2.2.1 Alternates, if any, included the Contract Sum:

Item	Price
<u>«Alternate Description»</u>	

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

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

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

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

§ 4.2.4 Unit Prices, if any:

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

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

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 The Construction Manager will provide a Contractor Invoice Form to the Contractor for submitting the Contractor’s request for payment each month. All reference to “Application for Payment” or “Progress Payment Request” shall mean “Contractor Invoice Form”. Based upon Applications for Payment submitted to the Construction Manager by the Contractor and upon certification of the Application for Payment by the Construction Manager and Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor, as provided below and elsewhere in the Contract Documents.

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

See Contractor Invoice Form Due Date on Attachment “A”

**§ 5.1.3** Provided an Application for Payment is received by the Construction Manager not later than the “Contractor Invoice Form Due Date” found on Attachment “A”, the Owner shall make payment of the amount certified in the Application for Payment to the Contractor for all undisputed amounts not later than forty-five (45) days after the “Owner Approves Invoice” date found on Attachment “A”. If an Application for Payment is received by the Construction Manager after the application date fixed above, payment for all undisputed amounts shall be made by the Owner after the Construction Manager receives the Application for Payment and at the payment date for the Applications for Payment of the following month.

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

**§ 5.1.4 Progress Payments Where the Contract Sum is Based on a Stipulated Sum**

**§ 5.1.4.1** Each Contractor Invoicing Form and CM prepared Progress Payment Request Form shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Construction Manager and Architect may require. This approved schedule of values, unless objected to by the Construction Manager, shall be used as a basis for reviewing the Contractor’s Invoicing Form and CM prepared Progress Payment Form.

**§ 5.1.4.2** The Contractor Invoicing Form shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

**§ 5.1.4.3** In accordance with AIA Document A232™-2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

**§ 5.1.4.3.1** The amount of each progress payment shall first include:

- .1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the total Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of ten percent (10%). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute may be included as provided in Section 7.3.9 of the General Conditions; and
- .2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing, less retainage of ten percent (10%); and
- .3 That portion of Construction Change Directives that the Architect determines, in the Architect’s professional judgment, to be reasonably justified; and
- .4 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to ninety percent (90%) of the Contract Sum, less such amounts as the Construction Manager and Owner recommends and the Architect determines for incomplete Work and unsettled claims; and
- .5 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 9.10.3 of the General Conditions.

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

- .1 The aggregate of any amounts previously paid by the Owner.
- .2 The amount, if any, for Work that remains uncorrected and for which the Construction Manager or Architect has previously withheld or nullified a Certificate for Payment as provided in Article 9 of AIA Document A232-2019.
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay.
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A232-2019; and

**.5 Retainage withheld pursuant to Section 5.1.7.**

**§ 5.1.4.4** The Contractor shall submit to the Construction Manager an itemized progress payment request by the date required in Section 01045 of the Project Manual. The progress payment request is referred to as the Contractor Invoice Form. After the schedule of values is submitted to and approved by the Construction Manager, the Construction Manager will prepare a Contractor Invoice Form master template in accordance with the approved schedule of values and provide it to the Contractor for use to prepare all progress payment requests. The Contractor shall submit a signed and notarized original Contractor Invoice Form for each monthly progress payment request. It shall be accompanied by such supporting data and documents the Owner, Construction Manager and Architect may require substantiating the Contractor's right to payment.

1. Contractor Invoice Form as defined as: See Section 1045 (Contractors Application for Payment)
2. Cost Control Manual as defined as: See Section 1045 (Contractors Application for Payment)
3. Progress Payment Request as defined as: See Section 1045 (Contractors Application for Payment)

**§ 5.1.7 Retainage**

**§ 5.1.7.1** For each progress payment made prior to when the Work of this Contract is substantially complete, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

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

Ten percent (10%) retainage

**§ 5.1.7.2** Reduction or limitation of retainage, if any, shall be as follows:

*(If the retainage established in Section 5.1.7.1 is to be modified prior to when the entire Work of this Contract is substantially complete, including modifications for completion of portions of the Work as provided in Section 3.4.2, insert provisions for such modifications.)*

Ten percent (10%) retainage shall be held back until the project is complete.

**§ 5.2 Final Payment**

**§ 5.2.1 Final Payment Where the Contract Sum is Based on a Stipulated Sum**

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

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A232-2019, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment or Project Certificate for Payment has been issued by the Architect.

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

**§ 5.2.2** The following must be submitted to the Construction Manager before the acceptance and submission of final payment in addition to requirements of other sections:

- .1 All required closeout documents including warranties, guarantees, operation and maintenance documents, and training;
- .2 As-Builts Drawings;
- .3 Itemized lists of all surplus and extra materials required per specifications at which time the Construction Manager will schedule the delivery of such materials to the owner by the Contractor;
- .4 Consent of Surety for Final Payment;
- .5 Submit Releases and Final Unconditional Waivers of Lien from all suppliers and subcontractors;
- .6 Submit certification stating that no materials containing asbestos were incorporated into the Work;
- .7 Submit certification that all punch list items have been completed.

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

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

Five Percent (5%) per annum % See MCL 438.31

## ARTICLE 6 DISPUTE RESOLUTION

### § 6.1 Initial Decision Maker

The Architect will serve as Initial Decision Maker pursuant to Section 15 of AIA Document A232-2019, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker.

*(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)*

N/A

### § 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Section 15 of AIA Document A232-2019, the method of binding dispute resolution shall be as follows:

*(Check the appropriate box.)*

- Arbitration pursuant to Section 15 of AIA Document A232-2019
- Litigation in a court of competent jurisdiction
- Other: *(Specify)*

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

§ 6.2.1 In an effort to resolve any conflicts that arise during the construction of the Project or following the completion of the project, the Owner and the Contractor agree that all disputes between them arising out of or relating to this Agreement shall be submitted to non-binding mediation, unless the parties mutually agree otherwise. All parties shall endeavor to settle disputes by mediation in accordance with the Construction Industry Mediation Rules of the American Arbitration Association currently in effect. Demand for mediation shall be filed in writing with the other party of this Agreement and with the American Arbitration Association. A demand for mediation shall be made within a reasonable time after the claim, dispute, or other matter in writing to the other party. In the event non-binding mediation fails to resolve any or all of the disputes or claims, the parties may pursue relief through any other legal and/or equitable means.

§ 6.2.2 The Owner reserves the right in its discretion to require consolidation or joinder of any mediation relating to this Agreement with another mediation involving an independent contractor or consultant engaged by the Owner in connection with the Project. Agreement in the event the Owner believes such consolidation or joinder is necessary in order to resolve a dispute or avoid duplication of time, expense, or effort.

§ 6.2.3 In the event the Owner is involved in a dispute which is not subject to mediation involving a person or entity not a party to this Agreement, the mediation provision of this Article shall be deemed to be void and nonexistent in the event the Owner, in its discretion, determines the Contractor should become a part to that dispute by joinder or otherwise.

§ 6.2.4 The Owner reserves the right to require any mediation to be held near the Owner's principal place of business.

## ARTICLE 7 TERMINATION OR SUSPENSION

### § 7.1 Where the Contract Sum is a Stipulated Sum

AIA Document A132™ - 2019. Copyright © 1975, 1980, 1992, 2019 and 2019 by The American Institute of Architects. All rights reserved. This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. To report copyright violations, e-mail The American Institute of Architects' legal counsel, copyright@aia.org.

§ 7.1.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A232-2019.

§ 7.1.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A232-2019.

## ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A232-2019 or another Contract Document, the reference refers to that provision as amended or supplemented therein, or as amended or supplemented by other provisions of the Contract Documents.

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

«Owner Name»  
«Owner Address»  
«Owner CSZ»

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

«Contractor»  
«Address»  
«CSZ»

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

### § 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A132™-2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition, and elsewhere in the Contract Documents.

Type of Insurance	Limit of Liability (\$0.00) Per Specifications
-------------------	---

§ 8.5.2 The Contractor shall provide bonds as set forth in Article 11 of AIA Document A132™-2019, and elsewhere in the Contract.

§ 8.6 Other provisions:

§ 8.6.1 Project Team is comprised of the Owner, Construction Manager, Owner's Representative and Architect.

§ 8.6.2 The Bid Division Description(s) outline the work items that the Contractor is responsible to provide for the Project regardless of any customary practices or agreements of that trade.

§ 8.6.3 If a Project Team member has reasonable objection to the actions of or the manner by which work is performed by a person directly employed by the Contractor or by any subcontractor of the Contractor, the Contractor shall propose another to whom the Project Team has no reasonable objection. Any cost associated with the removal and replacement of such a person shall be at the expense of the Contractor.

§ 8.6.4 All Change Orders and Change Directives will be initiated by a Change Event. (Reference Sections 01051, and 01053 of the Project Manual). The Change Event will be the instrument by which the Contractor will submit a detailed and itemized cost proposal for a proposed change for review by the Construction Manager, Owner's Representative and Architect, and the approval by the Owner, before the contract change is issued.



§ 8.6.5 A Change Event shall not alter the Contractor’s obligation to comply with the process of filing claims in accordance with other provisions of this agreement.

§ 8.6.6 All Contractors must conform to the provisions of the Michigan Right-To-Know Law, 1986 PA 80.

§ 8.6.7 All Contractors must have available on site a copy of all Safety Data Sheets and in addition provide a copy to the Construction Manager. The Construction Manager will return the copy of the Contractor’s Safety Data Sheets at the completion of the project.

§ 8.6.8 The Contractor shall include similar dispute resolution provisions in all agreements with subcontractors, sub-consultants, suppliers, or fabricators so retained, thereby providing for a consistent method of dispute resolution among the parties to those agreements.

§ 8.6.9 In the event of any inconsistency between this agreement and the General Conditions of the Contract for Construction (the “General Conditions”), the terms of this agreement shall govern.

§ 8.6.10 Claims by the Owner arising under this Agreement shall be subject to the limitations provisions defined in Michigan law, except that in no event shall a claim by the Owner be deemed untimely if filed within six (6) years of the final project completion. This provision is acknowledged to apply notwithstanding any other and shorter time frames contractually applicable to claims of the Contractor.

§ 8.6.11 The provisions of the General Conditions related to any waiver of subrogation are hereby deleted from the document and shall be deemed to have no effect. Further, any provision interpreted as the Owner waiving consequential or other indirect damages shall be ineffective and void.

§ 8.6.12 The modifications made to AIA Document A232-2019 Edition by the Owner are hereby incorporated into this Agreement.

§ 8.6.13 All specified insurance certificates and/or insurance policies must be received by the Construction Manager prior to the Contractor commencing work. The Contractor agrees to furnish a performance bond, and labor and materials payment bond for the full amount of this contract, including change orders.

## ARTICLE 9 ENUMERATIONS OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A132™-2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition
- .2
- .3 AIA Document A232™-2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition
- .4
- .5 The Drawings are as follows, and are dated [«Drawings Dates»](#) unless a different date is show below: See Attachment “C”

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

- .6 The Specifications are those contained in the Project Manual dated [«Manual Dated»](#) unless a different date is shown below: See Attachment “B”

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

- .7 The Addenda, if any:

Number	Date	Pages
<a href="#">«Addendum 1 »</a>	<a href="#">«Adm Date»</a>	

«Addendum 2» «Adm 2 Date»  
«Addendum 3» «Adm 3 Date»

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

**.8 Other Exhibits:**

Supplementary and other Conditions of the Contract: Those contained in the Project Manual dated «Manual Dated» unless a different date is shown below: See Attachment “B”

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

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

*(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A232-2019 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor’s bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)*

Pre Bid Meeting and Agenda, Post Bid Interview Form, and Pre Construction Meeting and Agenda

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

OWNER  
«Owner Name»

CONTRACTOR  
«Contractor»

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Signature)

«Owner and Title»  
(Printed name and title)

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

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Date)

**PART 1 – GENERAL**

**1.01 BID BONDS**

- A. Bid Security must be in the form of a Bid Bond or a certified check made payable to the Owner.
- B. When a Bid Bond is submitted, the Owner shall be listed as obligee.
- C. When a Bid Bond is submitted, the attorney-in-fact that executes the bond on behalf of the Surety shall attach to the Bond a certified, current copy of their Power of Attorney.
- D. **THE BID BOND AND ALL OTHER BONDS MUST BE ISSUED BY A SURETY COMPANY LICENSED AS SUCH TO DO BUSINESS IN THE STATE OF MICHIGAN.**

**1.02 LABOR & MATERIAL PAYMENT BONDS AND PERFORMANCE BONDS**

- A. The Owner reserves the right to require any successful Bidder to furnish both a Labor and Material Payment Bond, and a Performance Bond, each in the amount of one hundred percent (100%) of their contract amount.
- B. **THE LABOR & MATERIAL PAYMENT BOND AND THE PERFORMANCE BOND MUST BE ISSUED BY A SURETY COMPANY LICENSED AS SUCH TO DO BUSINESS IN THE STATE OF MICHIGAN.**
- C. When required, Labor and Material Payment Bonds and Performance Bonds must be separate. The combined form will not be accepted. Labor & Material Payment Bonds and Performance Bonds must be submitted on AIA Document A312, 2010 edition, without modifications.
- D. When submitted, Labor and Material Payment Bonds and Performance Bonds shall include:
  - 1. Full name and address of Contractor Surety and Owner.
  - 2. The proper Contract Date.
  - 3. The exact amount of the Contract.
  - 4. A description of the contract work / project.
  - 5. The Owner's name and address.
  - 6. An incorporation by reference of the contract terms.
  - 7. Language obligating the Surety, jointly and severally, with the Contract to the Owner
  - 8. The condition for discharge to the Surety.
  - 9. Signature.
  - 10. Corporate Seal, if applicable.
  - 11. Notarization.
  - 12. Power of Attorney.

**1.03 SUPPLY BONDS**

- A. The Owner reserves the right to require any direct supplier to furnish a Supply Bond in the amount of one hundred percent (100%) of their contract amount.
- B. Supply Bonds shall include all information required above (reference 1.02C above) for Labor and Material Payment Bonds and Performance Bonds.
- C. **ALL SUPPLY BONDS SHALL BE LEGAL AND ENFORCEABLE IN THE STATE OF MICHIGAN.**

**1.04 BOND COSTS IN BIDS**

- A. Do not include costs for Labor and Material Payment Bond(s), Performance Bond(s), or Supply Bond(s) in Base bid. State the cost of such Bond(s) separately, in the space(s) provided on the Proposal Form (Section 00300).

**1.05 SUBMISSION OF BONDS**

- A. Bonds shall be submitted to the Construction Manager for delivery to the Owner within fifteen (15) days following the date of issue of the Contract.
- B. Bonds must be submitted prior to contract execution and accepted by the Owner before work may begin on-site.
- C. If the work is commenced prior to contract execution in response to a Notice to Proceed (reference Section 00500), the Contractor shall, prior to commencement of the work, submit evidence satisfactory to the Owner that required bonds will be furnished, and shall deliver the Bonds by the date the Bidder executes the Owner/Contractor Agreement (reference Section 00510).

**END OF SECTION 00600**

**PART 1 – GENERAL**

**1.01 INSURANCE CERTIFICATES**

- A. Each Contractor shall provide, prior to the beginning of Work, a certificate of insurance for delivery to the Owner indicating that all required insurance coverage is in force.
- B. Use standard Insurance Certificate Form. The Accord Form 25 (2016/03) are preferable forms. These forms should be obtained from your Insurance agent.
- C. Issue all certificates to: **Bay City Public Schools**  
**601 Blend Street**  
**Bay City MI 48706**
- D. Certificates must show as ‘additional insured’ the Owner, **Bay City Public Schools**, the Architect, **WTA Architects**, and the Construction Manager, **WOLGAST CORPORATION**.
- E. A “Letter of Compliance” must be completed and submitted along with the certificate of insurance. The “Letter of Compliance” form is Page 3 of this section.
- F. **Insurance certificates must be completed as follows: (please refer to corresponding numerals on the sample certificate (following instructions) and also reference the “Section 00700 - General Conditions of the Contract for Construction.”**
1. This blank is to be dated the date the certificate of insurance is issued.
  2. This blank is to provide the complete name and address of the insurance agency issuing the certificate.
  3. This blank is to provide the full name and address of the “prime contractor.”
  4. These blanks are to provide the name (or names) of the insurance company (ies) providing coverage for the specific coverage issued on the certificate.
  5. General Liability
    - a. General Liability – All blanks must be checked in this section and policies must be on an “occurrence” basis.
    - b. Policy Number – A policy number must be listed here.
    - c. Policy “effective” and “expiration” dates must be listed in these two blanks.
    - d. This section must be filled in with dollar amounts (listed in thousands). Please refer to the example on the following page.
  6. Automobile liability
    - a. These blanks must be filled in with either:  
Option 1: Any Auto, Hired, and Non-Owned automobiles OR  
Option 2: All Owned Autos (Priv. Pass.), All Owned Autos (Other than Priv. Pass.), Hired Autos, and Non-Owned Autos.
    - b. Policy Number – A policy number must be listed here.
    - c. Policy Effective and Expiration dates must be listed in these two blanks.
    - d. This Section must be filled in with dollar amounts (in thousands).
  7. Excess Liability (Provide \$2 million Excess Liability Umbrella policy):
    - a. This blank must be checked with the “Umbrella Form.”
    - b. Policy Number – A policy number must be listed here.
    - c. Policy Effective and Expiration dates must be listed in these blanks.
    - d. If this section is required (see Item 7 above), both of these blanks must be filled in with a minimum of \$2,000,000 and \$2,000,000.

8. Worker's Compensation
  - a. Nothing needs to be checked here.
  - b. Policy Number – A policy number must be listed here.
  - c. Policy Effective and Expiration dates must be listed in these blanks.
  - d. These blanks must be filled in with minimum limits as follows:
    - \$500,000 (each accident)
    - \$500,000 (disease policy limits)
    - \$500,000 (disease each employee)
9. This section need not be completed unless some unique coverage is required for a certain type of job.
10. This section should contain the listing of the additional insured as in 1.01D. The names of the Owner, Architect, and Construction Manager must be listed here.
11. The Owner should be listed here, as this is the actual Certificate Holder. List the Owner as follows:

**Bay City Public Schools**

12. This blank must show the number thirty (30), indicating that the Owner and all additional insured parties will receive at least thirty (30) days' notice of cancellation of any of the policies listed on the certificate.
13. The certificate must be signed by a licensed insurance agent or representative of the insurance company in order to be valid.

***NOTE: Sample Certificate of Liability and Letter of Compliance follows.***

**Letter of Compliance**

Owner: \_\_\_\_\_

Contractor: \_\_\_\_\_

Project: \_\_\_\_\_

This letter is to acknowledge that I/We am/are the Insurance Agent(s) for the above-named Contractor and furthermore, that we have reviewed the insurance coverage required under this Contract with the Owner:

**Bay City Public Schools**

We hereby certify that said Contractor is in compliance with all insurance coverage required under this Contract with the Owner referenced above.

We hereby certify that said Contractor is in compliance with all insurance requirements, whether or not so evidenced on the attached certificate of insurance.

**Signed:** \_\_\_\_\_

Agency: \_\_\_\_\_

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

Agent: \_\_\_\_\_

Witness: \_\_\_\_\_

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

Notary: \_\_\_\_\_

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

**For:** \_\_\_\_\_

Contractor: \_\_\_\_\_

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

Bid Division: \_\_\_\_\_



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) (1)

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER (2) CONTACT NAME: PHONE (A/C, No, Ext): FAX (A/C, No): E-MAIL ADDRESS: INSURER(S) AFFORDING COVERAGE NAIC # INSURER A: (4) INSURER B: INSURER C: INSURER D: INSURER E: INSURER F:

COVERAGES CERTIFICATE NUMBER: REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

Table with columns: INSR LTR, TYPE OF INSURANCE, ADDL/SUBR INSD WVD, POLICY NUMBER, POLICY EFF (MM/DD/YYYY), POLICY EXP (MM/DD/YYYY), LIMITS. Rows include Commercial General Liability (5A), Automobile Liability (6A), Umbrella Liab (7A), and Workers Compensation and Employers' Liability (8A).

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

(10) LIST THE OWNER, ARCHITECT AND CONSTRUCTION MANAGER AS ADDITIONAL INSURED

CERTIFICATE HOLDER (11) INSERT THE OWNER'S NAME HERE NOTE: PLEASE HAVE YOUR INSURANCE COMPANY MAIL THIS DOCUMENT TO THE CONSTRUCTION MANAGER CANCELLATION (12) SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE (13)

© 1988-2015 ACORD CORPORATION. All rights reserved.

ACORD 25 (2016/03)

The ACORD name and logo are registered marks of ACORD



POLICY NUMBER:

COMMERCIAL GENERAL LIABILITY

**THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**

**ADDITIONAL INSURED - OWNERS, LESSEES OR  
CONTRACTORS - SCHEDULED PERSON OR ORGANIZATION**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

**SCHEDULE**

Name Of Additional Insured Person(s) Or Organization(s)	Location(s) Of Covered Operations
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

**A. Section II - Who Is An Insured** is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above.

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

**B.** With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to "bodily injury" or "property damage" occurring after:

1. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
2. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

**C.** With respect to the insurance afforded to these additional insureds, the following is added to **Section III - Limits Of Insurance**:

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or
2. Available under the applicable Limits of Insurance shown in the Declarations;

whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

**THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**

**ADDITIONAL INSURED - OWNERS, LESSEES OR  
CONTRACTORS - AUTOMATIC STATUS WHEN  
REQUIRED IN CONSTRUCTION AGREEMENT WITH YOU**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

**A. Section II - Who Is An Insured** is amended to include as an additional insured any person or organization for whom you are performing operations when you and such person or organization have agreed in writing in a contract or agreement that such person or organization be added as an additional insured on your policy. Such person or organization is an additional insured only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured.

However, the insurance afforded to such additional insured:

1. Only applies to the extent permitted by law; and
2. Will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

A person's or organization's status as an additional insured under this endorsement ends when your operations for that additional insured are completed.

**B.** With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to:

1. "Bodily injury", "property damage" or "personal and advertising injury" arising out of the rendering of, or the failure to render, any professional architectural, engineering or surveying services, including:

- a. The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; or
- b. Supervisory, inspection, architectural or engineering activities.

This exclusion applies even if the claims against any insured allege negligence or other wrongdoing in the supervision, hiring, employment, training or monitoring of others by that insured, if the "occurrence" which caused the "bodily injury" or "property damage", or the offense which caused the "personal and advertising injury", involved the rendering of or the failure to render any professional architectural, engineering or surveying services.

2. "Bodily injury" or "property damage" occurring after:

- a. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
- b. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as part of the same project.

**C.** With respect to the insurance afforded to these additional insureds, the following is added to **Section III - Limits Of Insurance**:

The most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement you have entered into with the additional insured; or
2. Available under the applicable Limits of Insurance shown in the Declarations;

whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

**THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**

**ADDITIONAL INSURED - OWNERS, LESSEES OR  
CONTRACTORS - COMPLETED OPERATIONS**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART  
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

**SCHEDULE**

Name Of Additional Insured Person(s) Or Organization(s)	Location(s) And Description Of Covered Operations
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

**A. Section II - Who Is An Insured** is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury" or "property damage" caused, in whole or in part, by "your work" at the location designated and described in the schedule of this endorsement performed for that additional insured and included in the "products-completed operations hazard".

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the

contract or agreement to provide for such additional insured.

**B. With respect to the insurance** afforded to these additional insureds, the following is added to **Section III - Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or
2. Available under the applicable Limits of Insurance shown in the Declarations;

whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

**PART 1 – GENERAL**

**1.01 DESCRIPTION**

- A. Within fifteen (15) days following the date of the issue of the Notice to Proceed (Section 00500), each Contractor shall submit to the Construction Manager for delivery to the Owner, a Schedule of Values showing accurate costs for the elements of their Work.
- B. The Schedule of Values shall be typed or printed on the Contractor's letterhead, identify the project and work division, and must be dated and signed.
- C. The Schedule of Values shall divide the Work into a sufficient number of individual cost elements to serve as an accurate basis for Contractor's Application for Payment.
- D. Each work element shall be listed identifying labor and material as separate line items. Each work element shall include its prorated share of profit, overhead, and retainage.

**1.02 SPECIAL ITEMS**

- A. As a part of the schedule of values the Contractor shall designate specific line items and associated values identified as:
  - 1. Performance Bond and Labor & Material Payment Bond (when required by Owner).  
Value: Actual Cost of Bonds
  - 2. Daily housekeeping and clean-up inclusive of any special cleaning and preparation required by the specification for delivering the building for the Owners occupancy.  
Value: Two percent (2%) of the total Contract Amount
  - 3. Retainage / Punch List  
Value: Ten percent (10%) of the total Contract Amount
- B. A request for payment of any special item amount contained in the Contractor's approved Schedule of Values or a portion thereof may be submitted for payment once the work for that item has been completed to the satisfaction of the Owner, Architect and Construction Manager
- C. Upon the completion of the Contractor's work exclusive of any punch list work, a Contractor may submit a separate Application for Payment requesting the Retention / Punch List line item be reduced to (5%). **This** request must be submitted to the Construction Manager along with a Partial Consent of Surety. Once received, the Construction Manager will forward it to the Owner for approval and notify the contractor when fully executed. The Owner shall reserve the right to accept or reject all requests for Retention / Punch List reduction.
- D. The Schedule of Values shall be submitted and approved prior to Contract execution and receipt of any payment.
- E. **Absolutely NO CHANGES may be made to an approved Schedule of Values.**
- F. Increases or decreases in the Contract Amount shall be through change orders.
- G. Each Change Order shall be listed as a new line item on the Contractor Invoicing Form.

**END OF SECTION 00670**

**PART 1 – GENERAL**

**1.01 DESCRIPTION**

- A. Within fifteen (15) days following the date of the issue of the Contract, each Contractor shall submit to the Construction Manager for delivery to the Owner, a list of all subcontractors that they intend to utilize in their performance of the Work, and all suppliers who will be providing materials and/or equipment to be incorporated into the Work.
- B. All SUBCONTRACTORS' names, addresses, telephone numbers, and types of Work shall be included on the list.
- C. All SUPPLIERS' names, addresses, telephone number, and items provided shall be included on the list.
- D. All items of material and equipment included in the Work shall be listed. Each item shall be listed with its manufacturer, supplier, and installing subcontractor, if applicable.
- E. Subcontractor / Supplier / Material / Equipment listings shall be submitted prior to contract execution.
- F. Prior to awarding a contract, the Construction Manager will notify the contractor if the Owner has a reasonable and substantial objection to any person, organization, material and/or equipment listed by the Contractor. If the Owner has a reasonable and substantial objection, the Contractor shall amend their Proposal by providing an acceptable substitute. The Owner may, at their discretion, accept such a substitute or they may disqualify the Proposal.
- G. **Suppliers, Subcontractors, Material, and Equipment proposed by the Contractor and accepted by the Owner shall be used in the Work for which they are proposed and accepted and shall not be changed except with prior written approval by the Construction Manager and Owner.**

**END OF SECTION 00680**

**PART 1 – GENERAL**

**1.01 DESCRIPTION**

- A. Within fifteen (15) days following the date of issue of a Contract, each Contractor shall submit to the Construction Manager, for delivery to the Owner, a list of all supervisory employees whom the Contractor proposes to employ to accomplish the Work.
- B. This list shall include supervisory employees' names, titles, and duties.
- C. Employee listings shall be submitted prior to contract execution.

**1.02 OWNER'S APPROVAL**

- A. Contractors are required to establish, to the satisfaction of the Owner, the reliability and responsibility of proposed employees.
- B. Prior to the award of a contract, the Construction Manager will notify the Contractor if the Owner has a reasonable and substantial objection to any person listed by the Contractor. If the Owner has reasonable and substantial objection, the Contractor may amend their Proposal by providing an acceptable substitute. The Owner may, at their discretion, accept such a substitute or they may disqualify the Proposal.
- C. Employees proposed by the Contractor and accepted by the Owner shall be employed on the Work for which they are proposed and accepted and shall not be changed except with written approval of the Owner.

**END OF SECTION 00690**

**PROJECT  
GENERAL CONDITIONS  
OF THE CONTRACT FOR  
CONSTRUCTION ON  
FOLLOWING PAGE(S)**

END OF SECTION 00700



 **AIA** Document A232™ – 2019**General Conditions of the Contract for Construction, Construction Manager as Adviser Edition****for the following PROJECT:**

*(Name, and location or address)*

Bay City Public Schools, construction improvements in accordance with the relevant application for preliminary qualification of bonds, the relevant ballot election language, Owner-approved plans and specifications, all applicable laws, the Owner's fixed budget, and as otherwise approved by the Owner.

**THE CONSTRUCTION MANAGER:**

*(Name, legal status, and address)*

Wolgast Corporation  
4835 Towne Centre Road, Suite 203  
Saginaw, Michigan 48604  
Telephone: (989) 790-9120  
Facsimile: (989) 790-9063

**THE OWNER:**

*(Name, legal status, and address)*

Bay City Public Schools  
910 N. Walnut Street  
Bay City, Michigan 48706  
Telephone: (989) 686-9700  
Facsimile: (989) 266-8218

**THE ARCHITECT:**

*(Name, legal status, and address)*

WTA Architects, Inc.  
100 South Jefferson Avenue, Suite 601  
Saginaw, Michigan 48607  
Telephone: (989) 752-8107  
Facsimile: (989) 752-3125

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

This document is intended to be used in conjunction with AIA Documents A132™–2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition; B132™–2019, Standard Form of Agreement Between Owner and Architect, Construction Manager as Adviser Edition; and C132™–2019, Standard Form of Agreement Between Owner and Construction Manager as Adviser.

Init.

AIA Document A232™ – 2019. Copyright © 1992, 2009, and 2019 by The American Institute of Architects. All rights reserved. The "American Institute of Architects," "AIA," the AIA Logo, and "AIA Contract Documents" are registered trademarks and may not be used without permission. This document was produced by AIA software at 08:29:08 ET on 03/09/2021 under Order No.5978577855 which expires on 01/02/2022, is not for resale, is licensed for one-time use only, and may only be used in accordance with the AIA Contract Documents® Terms of Service. To report copyright violations, e-mail [copyright@aia.org](mailto:copyright@aia.org).

User Notes:

(1514229317)

## TABLE OF ARTICLES

- 1 GENERAL PROVISIONS
- 2 OWNER
- 3 CONTRACTOR
- 4 ARCHITECT AND CONSTRUCTION MANAGER
- 5 SUBCONTRACTORS
- 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
- 7 CHANGES IN THE WORK
- 8 TIME
- 9 PAYMENTS AND COMPLETION
- 10 PROTECTION OF PERSONS AND PROPERTY
- 11 INSURANCE AND BONDS
- 12 UNCOVERING AND CORRECTION OF WORK
- 13 MISCELLANEOUS PROVISIONS
- 14 TERMINATION OR SUSPENSION OF THE CONTRACT
- 15 CLAIMS AND DISPUTES

Init.

/

## ARTICLE 1 GENERAL PROVISIONS

### § 1.1 Basic Definitions

**§ 1.1.1 The Contract Documents.** The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, ~~as to contractors, the Contract Documents do not also~~ include the advertisement or invitation to bid, Instructions to Bidders, ~~sample forms,~~ other information furnished by the Owner in anticipation of receiving bids or proposals, ~~Owner-accepted portions of the Contractor's bid or proposal, or and portions of addenda relating to bidding or proposal requirements.~~ requirements but do not include sample forms. The Architect's execution of the Owner/Architect Agreement and the Construction Manager's execution of the Owner/Construction Manager Agreement shall constitute their acceptance of all terms herein related to the respective parties.

**§ 1.1.2 The Contract.** The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and the Construction Manager or the Construction Manager's consultants, (3) between the Owner and the Architect or the Architect's consultants, (4) between the Contractor and the Construction Manager or the Construction Manager's consultants, (5) between the Owner and a Subcontractor or Sub-subcontractor (6) between the Construction Manager and the Architect, or (7) between any persons or entities other than the Owner and Contractor. The Construction Manager and Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of their duties.

**§ 1.1.3 The Work.** The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project. The Contractor acknowledges and agrees that the Contract Documents are sufficient to provide for the completion of the Work and that the Contract Documents include work (whether or not shown or described) which reasonably may be inferred to be required or useful for the completion of the Work in accordance with applicable laws, codes, and customary standards of the construction industry.

**§ 1.1.4 The Project.** The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by other Contractors, and by the Owner's own forces and Separate Contractors.

**§ 1.1.5 Contractors.** Contractors are persons or entities, other than the Contractor or Separate Contractors, who perform Work under contracts with the Owner that are administered by the Architect and Construction Manager.

**§ 1.1.6 Separate Contractors.** Separate Contractors are persons or entities who perform construction under separate contracts with the Owner not administered by the Architect and Construction Manager.

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

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

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

Init.

**§ 1.1.10 Initial Decision Maker.** The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not ~~show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith, faith and without negligence.~~

**§ 1.1.11 Products.** The term "Product(s)" as used in the Contract Documents refers to the materials, systems, and equipment provided by the Contractor for use in the Work of the Project.

**§ 1.1.12 Warranty.** The terms "Warranty" and "Guarantee" as used in the Contract Documents shall have the same meaning and shall be defined as "legally enforceable assurance of satisfactory performance or quality of a product or Work."

**§ 1.1.13 Materials.** Where materials, systems, and equipment items are referred to in the singular, such reference shall not serve to limit the quantity required. The Contractor shall furnish quantities as required by the Contract Documents to complete the Work. Unless specifically limited in the Contract Documents, the words "furnish," "install," and "provide," or any combination thereof mean to furnish and incorporate into the Work, including all necessary labor, materials, and equipment and other items required to perform the Work indicated.

**§ 1.1.14 Project Manual.** The Project Manual is a volume assembled for the Work which may include the bidding requirements, sample forms, Conditions of the Contract, and Specifications.

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

**§ 1.2.1** The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

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

**§ 1.2.2** Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade. Where responsibility for particular Work is required of the Contractor, the Contractor shall not be released from that responsibility by reason of the specification or drawing which establishes the responsibility. Thus, the Contractor shall be responsible for all Work required of it, even though that responsibility may be shown only in that portion of the documents typically pertaining to another contractor or trade.

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

**§ 1.2.4** If there should be a conflict between two or more of the Contract Documents then the following order of interpretation shall apply:

- .1 Where requirements specifically set forth in the applicable Agreement are in conflict with other Contract Documents, including but not limited to these General Conditions, the Agreement shall govern.
- .2 In all other instances, the conflict shall be resolved by complying with the provision that is most favorable to the Owner (as determined by the Owner in the Owner's sole discretion).
- .3 When a duplicate of material or equipment occurs in the Drawings, the Specifications or other Contract Documents, each Contractor shall be deemed to have bid on the basis of each furnishing such material or equipment. The Owner, with the assistance of the Architect and Construction Manager, will decide which Subcontractor(s) shall furnish the same.

Init.

### § 1.3 Capitalization

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

### § 1.4 Interpretation

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

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

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

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

### § 1.6 Notice

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

Wherever the Contract Documents require the Contractor to give "Notice" or "Timely Notice" to the Architect, Public Authority, and/or others, it shall be the Contractor's responsibility to furnish all such notices sufficiently in advance to allow the party receiving the notice reasonable time to react to such notice, including travel time on the job site as necessary, when such notices require the on-site presence of the Architect, Public Authority, their authorized representatives, or others for field observation of inspections, testing or approvals. Reasonable time shall be defined as no less than 24 hours plus normal travel time from the home office of the party being notified to the job site and must also accommodate known, standard, or reasonable processing periods.

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

### § 1.7 Digital Data Use and Transmission

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

### ~~§ 1.8 Building Information Models Use and Reliance~~

~~Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document~~

Init.

~~G202™ 2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.~~

## ARTICLE 2 OWNER

### § 2.1 General

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

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

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

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

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

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

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

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

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, ~~including including, but not limited to,~~ those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities. Unless otherwise provided under the Contract Documents, the Owner, assisted by the Construction Manager, shall secure and pay for the building permit.

Init.

**§ 2.3.2** ~~The Owner shall retain an architect.~~ Architect is the person lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project ~~is located.~~ is located, if licensed architecture is required by law for the Project. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Architect," "Architect/Engineer," "Engineer," or "Design Professional" as used herein means the Architect or the Architect's authorized representative.

**§ 2.3.3** ~~The Owner shall retain a construction manager adviser~~ is lawfully practicing construction management in the jurisdiction where the Project is located. That person or entity is identified as the Construction Manager in the Agreement and is referred to throughout the Contract Documents as if singular in number.

**§ 2.3.4** If the employment of the Construction Manager or Architect terminates, the Owner shall employ a successor construction manager or architect ~~to whom the Contractor has no reasonable objection and~~ whose status under the Contract Documents shall be that of the Construction Manager or Architect, respectively.

**§ 2.3.5** The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. ~~The Taking into account the Contractor's experience and expertise, and exercise of professional caution, the~~ Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work. The Contractor shall not be entitled to additional compensation resulting from its failure to confirm the location of the site utilities or existing structures prior to bid opening.

**§ 2.3.6** ~~The Upon specific written request of the Contractor, the~~ Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services. Contracts with other Contractors alone shall not constitute sufficient Owner control for purposes of this section.

**§ 2.3.7** Unless otherwise provided in the Contract Documents, ~~the Owner shall furnish to the Contractor~~ Contractor will receive at least one copy of the Contract Documents in pdf format (or another format reasonably approved by the Owner) for purposes of making reproductions pursuant to Section 1.5.2.

**§ 2.3.8** The Owner shall endeavor to forward all communications to the Contractor through the Construction Manager. Other communication shall be made as set forth in Section 4.2.6.

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

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

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

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ~~ten-day~~ three-day period after receipt of notice from the Owner or the Owner's designee (or immediately in the case of a threat to the safety of persons or property) to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, ~~correct such default or neglect.~~ Such action by the Owner and amounts charged to the Contractor are both subject to review by the Construction Manager and prior approval of the Architect, and the Construction Manager or Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the including any claim against the Contractor's Performance Bond, correct such default or neglect. In such case, the Owner may deduct from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses, including any and all legal expenses incurred to effectuate and enforce this provision and compensation for the Construction Manager's and Architect's and their respective consultants' additional services made necessary by such default, neglect, or failure. If current and future

Init.

payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

If the Architect, Construction Manager, Owner, or other contractors or consultants are required to provide additional services due to defects or deficiencies in the Contractor's work or by failure of the Contractor to perform under its agreement, the Contractor shall be responsible for all such costs and fees (including attorney fees), which shall promptly be paid to the Owner. The Owner, Contractor, Architect, and Construction Manager acknowledge that the Owner's receipt of such payment from the Contractor is a condition precedent to the Owner's obligation to make payment to those adversely affected.

This Section 2.5 allows the Owner to withhold payments from a non-performing Contractor irrespective of the termination procedure identified in Section 14.2, and the Owner may pursue either remedy, or both.

### **ARTICLE 3 CONTRACTOR**

#### **§ 3.1 General**

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

**§ 3.1.1.1** Possession, sale, or consumption of alcoholic beverages on the construction site is strictly prohibited. The unlawful manufacture, distribution, dispensation, possession or use of drugs is prohibited on the construction site.

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

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

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

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

**§ 3.2.2** Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.5, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Construction Manager and Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information submitted to the Construction Manager in such form as the Construction Manager and Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

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

**§ 3.2.4** If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of

Init.



Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.2.5 Prior to submitting its bid, the Contractor shall have studied and compared the Contract Documents and shall have reported to the Architect any error, inconsistency, or omission in the Contract Documents related to its work. It will be presumed that the Contractor's bid and the Contract Sum include the cost of correcting any error, inconsistency, or omission, which could have been discovered by the exercise of reasonable diligence. Unless the Contractor establishes that such error, inconsistency, or omission could not have been discovered by the exercise of reasonable diligence, the Contractor will make such corrections without additional compensation so that the Work is fully functional.

### § 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner, the Construction Manager, and the Architect, and shall propose alternative means, methods, techniques, sequences, or ~~procedures~~ procedures, specifically including any delays that could impact timely coordination and completion of the Work. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. The Construction Manager shall review the proposed alternative for sequencing, constructability, and coordination impacts on the other Contractors. Unless the Architect or the Construction Manager objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

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

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

### § 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work. Such provision of labor and materials shall occur in sufficient time to satisfy the existing Project schedule. The Contractor bears the risk of any failure to timely provide such labor and materials for any reason. The Contractor agrees to execute the appropriate UCC forms to effectuate the Owner's ownership of the material and equipment furnished pursuant to this Agreement.

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

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

§ 3.4.4 The Contractor, Construction Manager, and Architect each respectively agree that neither they nor their subcontractors will discriminate against any employee or applicant for employment, to be employed in the performance of this contract, with respect to hire, tenure, conditions or privilege of employment, or any matter directly or indirectly related to employment, because of race, age, sex, color, religion, national origin, ancestry or physical disability. Breach of this covenant may be regarded as a material breach of this contract.

#### § 3.4.5 Asbestos-Free Product Installation

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

§ 3.4.5.2 The Contractor shall also be required to furnish certified statements from the manufacturers of supplied materials used during construction verifying their products to be asbestos-free in accordance with the requirements of Section 3.4.5.1.

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

#### § 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner, Construction Manager, and Architect that materials and equipment furnished under the Contract in addition to any other warranties, guarantees or obligations set forth in the Contract Documents or applicable as a matter of a law and not in limitation of the terms of the Contract Documents, the Contractor warrants and guarantees that:

1. The Owner will have good title to the Work and all materials and equipment incorporated into the Work and, unless otherwise expressly provided in the Contract Documents, will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. new;
2. The Work and all materials and equipment incorporated into the Work will be free from all defects, including any defects in workmanship or materials;
3. The Work and all equipment incorporated into the Work will be fit for the purpose for which they are intended;
4. The Work and all materials and equipment incorporated into the Work will be merchantable; and
5. The Work and all materials and equipment incorporated into the Work will conform in all respects to the Contract Documents.

If required by the Construction Manager or Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Construction Manager or Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

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

The Contractor shall, at the time of final completion of the Work and as a condition precedent to final payment to the Contractor, assign to the Owner all manufacturers' warranties related to the materials and labor used in the Work. The Contractor further agrees to perform the Work in such manner as to preserve any and all such manufacturers'

warranties and deliver to the Owner the warranties, project manuals, operating procedures, and other materials related to each of the building systems and materials included in the Contractor's Work and as required by the Specifications.

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

### § 3.6 Taxes

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

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

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

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

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

§ 3.7.4 **Concealed or Unknown Conditions.** If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide written and dated notice to the Owner, Construction Manager, and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect and Construction Manager will promptly investigate such conditions and, ~~if the Owner and the Architect, in consultation with the Construction Manager, determines~~ determine that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, they will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. ~~If the Owner and the Architect, in consultation with the Construction Manager, determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner, Construction Manager, and Contractor, stating the reasons. If the Owner or Contractor disputes the Architect's determination or recommendation, either party may~~ the Contractor shall submit a Claim as provided in Article 15. The requirements of Section 2 of 1998 PA 57 (MCL 125.1592), as amended, are hereby incorporated into this document. The Contractor shall be alert to any indication or evidence of existing underground or concealed utilities or structures not shown on the Contract Documents and shall immediately notify the Owner of discovery of such evidence. If the Contractor encounters such utilities or structures, it shall cease operations immediately to minimize damage and shall notify the Owner and Architect. The Contractor shall bear the cost of damage resulting from its failure to exercise reasonable care in its construction activity or from continuing operations without notifying the Owner.

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

Init.

### § 3.8 Allowances

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

§ 3.8.2 Unless otherwise provided in the Contract Documents:

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

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

### § 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor. The superintendent and any other personnel shall be satisfactory to the Owner in all respects, and the Owner shall have the right to require the Contractor to remove any superintendent or any other personnel from the Project whose performance is not satisfactory to the Owner and to replace such superintendent or other personnel with another who is satisfactory to the Owner.

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

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

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

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information, and the Construction Manager's use in developing the Project schedule, a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. In no event shall the Contractor's Construction Schedule be extended due to action or inaction of the Contractor, except with prior written approval of the Owner within the Owner's sole discretion. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project. The Contractor shall cooperate with the Construction Manager in scheduling and performing the Contractor's Work to avoid conflict with, and as to cause no delay in, the work or activities of other Contractors, or the construction or operations of the Owner's own forces or Separate Contractors.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the ~~Owner's, Construction Manager's and Architect's approval. The Architect and Construction Manager's approval, which approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Construction Manager and Architect reasonable time to review submittals, submittals, and (3) provide for~~ expeditious and practical execution of the Work. If the Contractor fails to submit a submittal schedule, or fails to

Init.

provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall participate with other Contractors, the Construction Manager, and the Owner in reviewing and coordinating all schedules for incorporation into the Project schedule that is prepared by the Construction Manager. The Contractor shall make revisions to the construction schedule and submittal schedule as deemed necessary by the Construction Manager to conform to the Project schedule.

§ 3.10.4 The Contractor shall perform the Work in ~~general accordance with the most recent schedules submitted to the Owner, Construction Manager, and Architect, and incorporated into the approved Project schedule.~~accordance with the most recent approved project schedule and the most recent work schedule.

§ 3.10.5 The Contractor shall cooperate with the Construction Manager in scheduling and performing its Work to avoid conflict or interference with the Work of others, and the Contractor shall be responsible for any conflict or interferences that it causes. The Construction Manager and the Contractor acknowledge and understand that the work schedule will be modified from time-to-time with the Owner's approval to coordinate with the work of others and that such schedule changes do not give rise to a claim for damages or additional compensation by the Contractor for delay or otherwise. The Contractor shall be required to conform to the most recent Owner-approved schedule and acknowledges that fact was taken into account when it agreed to the Contract Sum and entered into this Contract.

§ 3.10.6 The Contractor shall cooperate with the Construction Manager in working out and following the proper sequence of operations between the Work of the Contractor and that of other trades on the site.

§ 3.10.7 The Contractor shall prosecute the Work undertaken in a prompt and diligent manner whenever the Work (or a part thereof) becomes available, or at such other time as the Owner and/or Construction Manager may direct so as to promote the general progress of the entire construction. The Contractor shall not, by delay or otherwise, interfere with or hinder the Work of the Construction Manager or any other Contractor. Any materials that are to be furnished by the Contractor shall be furnished in sufficient time to enable the Contractor to perform and complete its Work within the time or times provided in the schedule. If the Contractor shall, through its action or inactions, including the actions or inactions of its' subcontractors or suppliers, fall behind in furnishing necessary labor and/or materials to meet the construction needs in accordance with the established schedule, then it shall increase its forces or work such overtime as may be required, at its own expense, to bring its part of the work up to the proper schedule. In the event that the Contractor does not take such action necessary to bring its part of the work up to schedule, as determined by the Construction Manager, then the Owner may supplement the Contractor's forces or take other action permitted under Section 2.4 or Section 2.5. The Contractor shall be responsible for any and all costs of performing or completing the Work, and the Owner may deduct such costs from any payment then or thereafter due Contractor to cover the cost of performing, completing, or correcting such Work. If the amount withheld from payments then or thereafter due Contractor are insufficient to cover such costs, the Owner may bill those costs to the Contractor, and the Contractor shall pay any such sums within ten (10) days of an invoice. Exercise of such rights shall in no way limit or jeopardize the Owner's right to any other remedy, including but not limited to a claim against the Performance Bond of the Contractor.

### § 3.11 Documents and Samples at the Site

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

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

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

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor for submittal to and review by the Architect to illustrate materials or

Init.

equipment for some portion of the Work. All Work shall be furnished and installed in accordance with the Drawings, Specifications and as additionally required by the manufacturer's printed instructions. The Contractor shall review the manufacturer's instructions, and where conflict occurs between the Drawings or Specifications and the manufacturer's instructions, the Contractor shall request clarification from the Architect prior to commencing the Work.

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

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect and Construction Manager is subject to the limitations of Sections 4.2.10 through 4.2.12. Informational submittals upon which the Construction Manager and Architect are not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Construction Manager or Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Construction Manager, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the Project submittal schedule approved by the Construction Manager and Architect or, in the absence of an approved Project submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of other Contractors, Separate Contractors, or the Owner's own forces. The Contractor shall cooperate with the Construction Manager in the coordination of the Contractor's Shop Drawings, Product Data, Samples, and similar submittals with related documents submitted by other Contractors.

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

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

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

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

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

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to reasonably rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract

~~Documents~~ Documents, subject to its experience and expertise. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner, the Architect, and the Owner shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals. The Architect and Construction Manager shall be entitled to reasonably rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy, subject to their professional judgment, experience, and expertise. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Construction Manager shall review submittals for sequencing, constructability, and coordination impacts on other Contractors.

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

### § 3.13 Use of Site

§ 3.13.1 The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, permits, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment. Only materials and equipment which are to be used for the Project or to carry out the Work shall be stored at the Project site(s). Protection of such materials and equipment shall be the sole responsibility of the Contractor.

§ 3.13.2 The Contractor shall coordinate the Contractor's operations with, and secure the approval of, the Construction Manager before using any portion of the site.

### § 3.14 Cutting and Patching

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

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

### § 3.15 Cleaning Up

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

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner, or Construction Manager with the Owner's approval, may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.15.3 Any areas and/or concurrently occupied space both occupied by the Owner and used in the progress of the Work, whether within the limits of the construction site or the adjacent areas leading to it, shall be maintained in a clean and safe condition and open to travel. Failure by the Contractor to maintain said areas will result in the Owner's cleaning of same, at the expense of the Contractor.

### § 3.16 Access to Work

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

### § 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall indemnify and hold harmless the Owner, Construction Manager, and Architect ~~harmless from~~ from any and all cost, damage, and loss on account thereof, including, but not limited to actual attorneys' fees, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner, Architect, or Construction Manager. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect through the Construction Manager. The review by the Owner of any method of construction, invention, appliance, process, article, device or materials of any kind shall be for its adequacy as integrated into the Work and shall not be an approval for the use thereof by the Contractor in violation of any patent or other rights of any third person.

### § 3.18 Indemnification

**§ 3.18.1** To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Construction Manager, Architect, Construction Manager's and Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or ~~resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent in any way related to performance of the Work, or the duties or obligations of this Agreement or the failure of the Contractor or the Work to conform with the Contract Documents, caused in whole or in part by any acts or omissions of the Contractor, a Subcontractor, or anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder, them or anyone for whose acts of any of them may be liable.~~ The Contractor shall not be obligated to indemnify a party for that party's sole negligence but shall remain liable to the fullest extent of its fault or the fault of a person for whom the Contractor is responsible (e.g., a Subcontractor). The Contractor shall be responsible to the Owner, Construction Manager, Architect, Architect's consultants and agents and employees of any of them from and against all amounts such parties may be required to pay in attorney fees in order to pursue enforcement of this provision against the Contractor or otherwise obtain indemnification from the Contractor provided under the terms of this Section 3.18 or any other applicable Contract Document. Such obligation shall not be construed to negate, abridge, or reduce any other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18, which would otherwise exist as to any party or person set forth in this section. To the fullest extent permitted by law, the Contractor shall indemnify the Owner and save the Owner harmless against all loss by fines, penalties or corrective measures resulting from negligent or wrongful acts or omissions by the Contractor, its Subcontractors, agents, employees or assigns, with respect to the violation of safety requirements of this Contract, including reasonable attorney fees.

**§ 3.18.2** ~~In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.~~ addition to and not in limitation of the Contractor's other indemnity obligations, the Contractor hereby accepts and assumes exclusive liability for and shall indemnify and save harmless the Owner, Construction Manager and Architect from and against the payment of the following:

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

All sales, use, personal property and other taxes (including interest and penalties thereon) required by any federal, state, county, municipal or other law to be paid or collected by the Contractor or any of its Subcontractors or vendors or any other person or persons acting for, through or under it or any of them, by reason of the performance of the Work

Init.



or the acquisition, ownership, furnishing, or use of any materials, equipment, supplies, labor, services or other items for or in connection with the Work;

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

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

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

#### **ARTICLE 4 ARCHITECT AND CONSTRUCTION MANAGER**

##### **§ 4.1 General**

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement. The term "Architect," "Architect/Engineer," "Engineer," or "Design Professional" as used herein means the Architect or the Architect's authorized representative.

§ 4.1.2 The Construction Manager is the person or entity retained by the Owner pursuant to Section 2.3.3 and identified as such in the Agreement.

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

##### **§ 4.2 Administration of the Contract**

§ 4.2.1 The Construction Manager and Architect will provide administration of the Contract as described in the Contract Documents and will be the Owner's representatives during construction until the date the Architect issues the final Certificate for ~~Payment.~~ Payment and with the Owner's written concurrence during the correction period. The Construction Manager and Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or more frequently, as ~~otherwise agreed with the Owner,~~ Owner or as required by law, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. ~~However, Subject to the Owner/Architect Agreement, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. On the basis of the site visits, the Architect will keep the Owner and the Construction Manager reasonably informed about the progress and quality of the portion of the Work completed, will guard the Owner against defects and deficiencies in the work, and promptly report to the Owner and Construction Manager known deviations from the Contract Documents.~~ Documents, the Project schedule, and defects and deficiencies observed in the Work.

§ 4.2.3 The Construction Manager shall provide one or more representatives who shall be in attendance at the Project site whenever the Work is being performed. The Construction Manager will determine in general if the Work observed is being performed in accordance with the Contract Documents, will keep the Owner and Architect reasonably informed of the progress of the Work, and will promptly report to the Owner and Architect known deviations from the Contract Documents and the most recent Project schedule, and defects and deficiencies observed in the Work.

§ 4.2.4 The Construction Manager will schedule and coordinate the activities of the Contractor and other Contractors in accordance with the latest approved Project ~~schedule~~-schedule and shall supervise construction as required by 1937 PA 306 (MCL 388.851 et seq.).

§ 4.2.5 ~~The Construction Manager, Manager and Architect, except to the extent required by Section 4.2.4, and Architect 4.2.4 or by 1937 PA 306 and/or 1980 PA 299, as applicable, will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the Contractor's safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, and Documents. Except as required by their respective agreements with the Owner, neither will be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. Neither the Construction Manager nor the Architect Documents and neither will have control over or charge of, or be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or of any other persons or entities performing portions of the Work. The Construction Manager will schedule and coordinate the work of all Contractors on the Project, including the Contractors' use of the site. The Construction Manager will keep the Contractors informed of the Project Construction Schedule to enable the Contractors to plan and perform the Work in a timely manner.~~

§ 4.2.6 **Communications.** The Owner shall endeavor to communicate with the Contractor and the Construction Manager's consultants through the Construction Manager about matters arising out of or relating to the Contract Documents. The Owner and Construction Manager shall endeavor to include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall endeavor to promptly notify the Architect of the substance of any direct communications between the Owner and the Construction Manager otherwise relating to the Project. Communications by and with the Architect's consultants ~~shall~~may be through the Architect. Communications by and with Subcontractors and suppliers ~~shall~~may be through the Contractor. Communications by and with other Contractors shall be through the Construction Manager. Communications by and with the Owner's own forces and Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.7 The Construction Manager and Architect will review and certify all Applications for Payment by the Contractor, in accordance with the provisions of Article 9.

§ 4.2.8 The Architect and Construction Manager have authority to reject Work that does not conform to the Contract Documents, and will notify each other about the rejection. Whenever the Construction Manager considers it necessary or advisable, the Construction Manager will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, upon written authorization of the Owner, whether or not the Work is fabricated, installed or completed. The foregoing authority of the Construction Manager will be subject to the provisions of Sections 4.2.18 through 4.2.20 inclusive, with respect to interpretations and decisions of the Architect. However, neither the Architect's nor the Construction Manager's authority to act under this Section 4.2.8 nor a decision made by either of them in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect or the Construction Manager to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons performing any of the Work.

§ 4.2.9 Utilizing the submittal schedule provided by the Contractor, the Construction Manager shall prepare, and revise as necessary, a Project submittal schedule incorporating information from other Contractors, the Owner, Owner's consultants, Owner's Separate Contractors and vendors, governmental agencies, and participants in the Project under the management of the Construction Manager. The Project submittal schedule and any revisions shall be submitted to the Architect for approval.

§ 4.2.10 The Construction Manager will receive and promptly review for conformance with the submittal requirements of the Contract Documents, all submittals from the Contractor such as Shop Drawings, Product Data, and Samples. Where there are other Contractors, the Construction Manager will also check and coordinate the information contained within each submittal received from the Contractor and other Contractors, and transmit to the Architect those recommended for approval. By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Construction Manager represents to the Owner and Architect that the Construction Manager has reviewed and recommended them for approval. The Construction Manager's actions will be taken in accordance with the Project submittal schedule approved by the Architect or, in the absence of an approved Project submittal schedule, with reasonable promptness while allowing sufficient time to permit adequate review by the Architect.

Init.

§ 4.2.11 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Upon the Architect's completed review, the Architect shall transmit its submittal review to the Construction Manager.

§ 4.2.12 Review of the Contractor's submittals by the Construction Manager and Architect is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Construction Manager and Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Construction Manager and Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component. However, should the Construction Manager or Architect discover during the course of such review any inaccuracies, incompleteness, or other irregularities, they shall immediately notify the Owner of the same to determine an appropriate corrective course of action or notify the Contractor of the same to correct the irregularities.

§ 4.2.13 The Construction Manager will prepare Change Orders and Construction Change Directives.

§ 4.2.14 The Construction Manager and the Architect will take appropriate action on Change Orders or Construction Change Directives in accordance with Article 7, and the Architect will have authority to order minor changes in the Work as provided in Section 7.4. The Architect, in consultation with the Construction Manager, will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.15 ~~Utilizing the documents provided by the Contractor, the~~ The Construction Manager will maintain at the site for the Owner one copy of all Contract Documents, approved Shop Drawings, Product Data, Samples, and similar required submittals, in good order and marked currently to record all changes and selections made during construction. These will be available to the Architect and the Contractor, and will be delivered to the Owner in good condition and reasonably organized upon completion of the Project.

§ 4.2.16 The Construction Manager will assist the Architect in conducting inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion in conjunction with the Architect pursuant to Section 9.8; and receive and forward to the Owner written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10. The Construction Manager will forward to the Architect a final Application and Certificate for Payment or final Project Application and Project Certificate for Payment upon the Contractor's compliance with the requirements of the Contract Documents.

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

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

§ 4.2.19 Interpretations ~~and decisions~~ of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such ~~interpretations and decisions,~~ interpretations, the Architect will endeavor to secure faithful performance by ~~both Owner and Contractor, will not show partiality to either,~~ and will not be liable for results of interpretations ~~or decisions~~ so rendered in good ~~faith.~~ faith and without negligence.

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

§ 4.2.21 The Construction Manager will receive and review requests for information from the Contractor, and forward each request for information to the Architect, with the Construction Manager's recommendation. The Architect will review and respond in writing, through the Construction Manager, to requests for information about the Contract Documents. The Construction Manager's recommendation and the Architect's response to each request will be made in writing within any time limits agreed upon or otherwise with reasonable ~~promptness~~. promptness given the particular circumstances. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

## ARTICLE 5 SUBCONTRACTORS

### § 5.1 Definitions

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

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

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

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

The Contractor shall remain, in all instances, jointly and severally liable to the Owner for all acts or omissions of its Subcontractor. All contractual agreements with additional persons or entities serving as a subcontractor shall incorporate the Contract Documents, expressly identify the Owner as a third-party beneficiary, give the Owner all rights against the Subcontractor that it would have against the Contractor, and state that the Owner shall enjoy all third-party beneficiary rights not prohibited by law.

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

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

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner, Construction Manager or Architect makes reasonable objection to such substitution. The Contractor shall notify the Owner, the Architect, and the Construction Manager of any proposed subcontractor substitution a minimum of 10 days prior to such proposed change.

### § 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume

Init.

toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, that the Contractor, by these Contract Documents, assumes toward the Owner, Construction Manager and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner, Construction Manager and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

#### § 5.4 Contingent Assignment of Subcontracts

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

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

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

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

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

#### § 6.1 Owner's Right to Perform Construction with Own Forces and to Award Other Contracts

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to ~~insurance and waiver of subrogation.~~ insurance. The Construction Manager and Contractor shall be responsible for coordinating the Work with the work of other Contractors, including the Owner's own forces or Separate Contractors so as to complete the Work in accordance with the Project schedule.

§ 6.1.2 When the Owner performs construction or operations with the Owner's own forces or Separate Contractors, the Owner shall provide for coordination of such forces and Separate Contractors with the Work of the Contractor, who shall cooperate with them.

~~§ 6.1.3 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.~~

#### § 6.2 Mutual Responsibility

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

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner's own forces, Separate Contractors or other Contractors, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Construction Manager and Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor or other Contractors that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Construction Manager and the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's or other Contractors' completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractors or other Contractors that are not apparent.

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

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction, or to property of the Owner, Construction Manager, Separate Contractors, or other Contractors as provided in Section 10.2.5. Should a claim be made that the Contractor wrongfully delayed or caused damage to the Work or property of another contractor (including the Owner's own forces, other Contractors, or Separate Contractors), the Contractor shall promptly settle the dispute with such other contractor. If such other contractor sues the Owner on account of any delay or damage alleged to have been caused by the Contractor, the Construction Manager will notify the Contractor who shall defend such proceedings at the Contractor's sole expense. If any judgment or award against the Owner arises therefrom, the Contractor shall pay or satisfy it and shall reimburse the Owner for all costs, including attorneys' fees and court costs, which the Owner may have incurred.

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

### § 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, other Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up ~~and the Construction Manager, with notice to the Architect, will allocate the cost among those responsible. The Owner's right to clean up shall in no event be deemed a duty, and should the Owner choose not to pursue this remedy, the Contractor necessitating such action shall remain fully responsible for the same.~~

## ARTICLE 7 CHANGES IN THE WORK

### § 7.1 General

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

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

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

§ 7.1.4 Where a change in the Work requires overtime labor, and the Owner approves in advance such overtime labor in writing, the cost to the Owner of overtime labor shall be determined by the actual premium wages paid for such overtime labor, over and above the cost of straight time wages, plus payroll charges applicable thereto, plus the cost of

Init.

direct additional expenses relating to the overtime work, plus a percentage for the Contractor's overhead cost as stipulated in the Contract. No Contractor profit shall be included in such cost. Overtime labor caused by Contractor's failure to timely and/or properly perform shall be at no additional cost to the Owner.

## § 7.2 Change Orders

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

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

§ 7.2.3 The Contractor's agreement on any Change Order shall constitute its final settlement of all matters relating to the direct and indirect costs associated with such change and any and all related adjustments to the Contract Sum and the Contract Time.

## § 7.3 Construction Change Directives

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

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

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

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

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

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

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

Init.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Construction Manager of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time. Contractor agreements to a Construction Change Directive shall require a follow-up writing or signature as contemplated in Section 7.3.7.

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

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

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

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

#### § 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Owner and Construction Manager and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Owner and Construction Manager that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

### ARTICLE 8 TIME

#### § 8.1 Definitions

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

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

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

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

#### § 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for obtaining all supplies, materials, tools and equipment necessary to perform the Work and for properly performing the Work.

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

Init.



§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time. All work shall be completed in sufficient time to allow for clean-up and preparation for Owner move-in prior to the date of Substantial Completion.

### § 8.3 Delays and Extensions of Time

§ 8.3.1 ~~If~~ Provided the Contractor submits a written request for an extension not more than fourteen days after the occurrence that gives rise to the delay, if the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner, Architect, Construction Manager, or an employee of any of them, or of the Owner's own forces, Separate Contractors, or other Contractors; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, fire, government-declared emergencies, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; litigation, mediation, or arbitration, as applicable; or (5) by other causes that the Contractor asserts and the Architect, based on the recommendation of the Construction Manager, determines justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine. may be extended by Change Order. Failure of the Contractor to submit a timely request for an extension shall irrevocably waive the Contractor's right to such an extension of time. If the contract time is subject to extension pursuant to this subparagraph, such extension shall be the exclusive remedy of the Contractor and the Contractor shall not be entitled to recover damages from the Owner. Further, minor modifications in Contract time resulting from adjustments in the Project construction schedule shall not be deemed a sufficient cause for an extension of time under this Section.

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

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

### § 8.4 Delay Damage Claims

§ 8.4.1 If the Contractor fails to complete its Work on time resulting in loss or damage to the Owner, the Owner shall be entitled to recover any damages caused by the Contractor's breach, including overhead, profit, extended general conditions, actual attorney fees, etc.

§ 8.4.2 In the event the Contractor is delayed or hindered in the commencement or progress of the Work, including but not limited to those delays caused by the Work or lack of Work of another contractor or subcontractor on the Project, and the Contractor claims monetary damages as a direct and proximate consequence thereof (including, but not limited to, extended general conditions, overhead, profit, overtime, interest, supervision or other costs or profits whatsoever), then the Contractor shall not assert such claims against the Architect, Construction Manager or Owner and, as to the Architect, Construction Manager and Owner, the Contractor's claims of such delay damages are hereby waived. The Contractor's sole and exclusive remedy regarding claims for monetary delay damages shall be to pursue such claims directly against any contractor(s) and/or subcontractors on the job which may have caused the delay, and with regard to such claims asserted against the Contractor by any other contractor(s) and/or subcontractors, the Contractor hereby waives the defense of absence of contractual privity and hereby assumes liability to other contractor(s) and/or subcontractors arising out of the Contractor's actions or inactions resulting in such delay and claim.

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

## ARTICLE 9 PAYMENTS AND COMPLETION

### § 9.1 Contract Sum

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

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial

Init.

inequity to the Owner or Contractor, the applicable unit prices shall be equitably ~~adjusted~~adjusted, unless the Contractor provided such unit prices as a part of a competitive bid.

### § 9.2 Schedule of Values

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

### § 9.3 Applications for Payment

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

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Construction Manager and Architect, but not yet included in Change Orders. A Contractor's request for payment of sums related to work regarding Construction Change Directives shall, unless qualified in writing at the time of request, constitute full and complete consent to the Construction Change Directive(s) and to the issuance of a Change Order.

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

§ 9.3.1.3 The Contractor shall submit with each monthly Application for Payment (1) an Affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the previous application was submitted and the Owner might in any way be responsible have been paid or otherwise satisfied, and (2) a release or waiver of liens arising out of the Contract from each Contractor and/or Subcontractor, materialman, supplier and laborer or the Contractor addressing all previous Applications for Payment submitted for the Project.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site. Payment to Contractor for materials stored off site is discouraged. When circumstances indicate that the Owner's best interest is served by off-site storage, the Contractor shall make written request to the Owner and Construction Manager for approval to include such material costs in its next progress payment. The Contractor's request shall include the following information:

- .1 A list of the fabricated materials consigned to the Project (which shall be clearly identified, giving the place of storage, together with copies of invoices and reasons why materials cannot be delivered to the site.
- .2 Certification that items have been tagged for delivery to the Project and that they will not be used for another purpose.
- .3 A letter from the Contractor's Surety indicating agreement to the arrangements and that payment to the Contractor shall not relieve either party of their responsibility to complete the Work.

Init.

- .4 Evidence of adequate insurance covering the material in storage, which shall name the Owner as additionally insured.
- .5 Costs incurred by the Owner, Construction Manager and Architect to inspect material in off-site storage shall be paid by the Contractor.
- .6 Subsequent pay requests shall itemize the materials and their cost which were approved on previous pay requests and remain in off-site storage.
- .7 When a partial payment is allowed on account of material delivered on the site of the Work or in the vicinity thereof or under possession and control of the Contractor, but not yet incorporated therein, such material shall become the property of the Owner, but if such material is stolen, destroyed or damaged by casualty before being used, the Contractor will be required to replace it at its own expense.

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

#### § 9.4 Certificates for Payment

§ 9.4.1 Where there is only one Contractor, the Construction Manager will, within seven days after the Construction Manager's receipt of the Contractor's Application for Payment, review the Application, certify the amount the Construction Manager determines is due the Contractor, and forward the Contractor's Application and Certificate for Payment to the Architect. Within seven days after the Architect receives the Contractor's Application for Payment from the Construction Manager, the Architect will either (1) issue to the Owner a Certificate for Payment, in the full amount of the Application for Payment, with a copy to the Construction Manager; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Construction Manager and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Construction Manager and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1. The Construction Manager will promptly forward to the Contractor the Architect's notice of withholding certification.

§ 9.4.2 Where there is more than one Contractor performing portions of the Project, the Construction Manager will, within seven days after the Construction Manager receives all of the Contractors' Applications for Payment: (1) review the Applications and certify the amount the Construction Manager determines is due each of the Contractors; (2) prepare a Summary of Contractors' Applications for Payment by combining information from each Contractor's application with information from similar applications for progress payments from the other Contractors; (3) prepare a Project Application and Certificate for Payment; (4) certify the amount the Construction Manager determines is due all Contractors; and (5) forward the Summary of Contractors' Applications for Payment and Project Application and Certificate for Payment to the Architect.

§ 9.4.2.1 Within seven days after the Architect receives the Project Application and Project Certificate for Payment and the Summary of Contractors' Applications for Payment from the Construction Manager, the Architect will either (1) issue to the Owner a Project Certificate for Payment, with a copy to the Construction Manager; or (2) issue to the Owner a Project Certificate for Payment for such amount as the Architect determines is properly due, and notify the Construction Manager and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Project Application for Payment, and notify the Construction Manager and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1. The Construction Manager will promptly forward the Architect's notice of withholding certification to the Contractors. As between the Owner and the Contractor, the failure of the Architect or Construction Manager to notify the Contractor or the Owner of a withheld certification does not render such withholding ineffective, and the Owner shall have no obligation to pay a Contractor for uncertified amounts or amounts for which no Certificate for Payment has been issued. If the Contractor does not receive notice of a withheld certification, it shall proceed as provided in Section 9.7.

§ 9.4.3 The Construction Manager's certification of an Application for Payment or, in the case of more than one Contractor, a Project Application and Certificate for Payment, shall be based upon the Construction Manager's evaluation of the Work and the data in the Application or Applications for Payment. The Construction Manager's certification will constitute a representation that, to the best of the Construction Manager's knowledge, information,

Init.

and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is, or Contractors are, entitled to payment in the amount certified.

§ 9.4.4 The Architect's issuance of a Certificate for Payment or, in the case of more than one Contractor, Project Application and Certificate for Payment, shall be based upon the Architect's evaluation of the Work, the recommendation of the Construction Manager, and data in the Application for Payment or Project Application for Payment. The Architect's certification will constitute a representation that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is, or Contractors are, entitled to payment in the amount certified.

§ 9.4.5 The representations made pursuant to Sections 9.4.3 and 9.4.4 are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Construction Manager or ~~Architect~~Architect, in writing, together with the Certification which the qualification pertains.

§ 9.4.6 The issuance of a Certificate for Payment or a Project Certificate for Payment will not be a representation that the Construction Manager or Architect ~~has~~has, unless otherwise required by contract or law, (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

#### § 9.5 Decisions to Withhold Certification

§ 9.5.1 The Construction Manager or Architect may withhold a Certificate for Payment or Project Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Construction Manager's or Architect's opinion the representations to the Owner required by Section 9.4.3 and 9.4.4 cannot be made. If the Construction Manager or Architect is unable to certify payment in the amount of the Application, the Construction Manager will notify the Contractor and Owner as provided in Section 9.4.1 and 9.4.2. If the Contractor, Construction Manager and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment or a Project Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Construction Manager or Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment or Project Certificate for Payment previously issued, to such extent as may be necessary in the Construction Manager's or Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from the acts and omissions described in Section 3.3.2 because of

- ~~.1 defective Work not remedied;~~remedied, or the Contractor is in breach of the Agreement;
- ~~.2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;~~
- ~~.3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;~~
- ~~.4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;~~
- ~~.5 damage to the Owner or a Separate Contractor or other Contractor;~~
- ~~.6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;~~or
- ~~.7 repeated failure to carry out the Work in accordance with the Contract Documents;~~Documents;
- ~~.8 the Work not having progressed to the extent set forth in the Application for payment; or~~
- ~~.9 representations of the Contractor are untrue.~~

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

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

Init.

§ 9.5.4 If the Architect or Construction Manager withholds certification for payment under Section 9.5.1, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Construction Manager, and both will reflect such payment on the next Certificate for Payment.

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

#### § 9.6 Progress Payments

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

§ 9.6.1.1 The Owner may, in its sole discretion, choose to make payments to Contractors through the Construction Manager. More particularly, the Owner may distribute funds to the Construction Manager for the Construction Manager to then provide payment to each respective and applicable Contractor. The Owner may discontinue this practice at any time in its sole discretion.

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

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

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

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4. Owner may, in its sole discretion, after providing Contractor with ten (10) days prior written notice, make direct payments to the Contractor's Subcontractors, material men, laborers or claimants relating to labor or material provided to the Contractor in the event the Subcontractors, material men, laborers or claimants threaten to or actually cease providing labor and/or materials for the Project due to nonpayment such that, in the Owner's determination, progress of the Project and the Project's schedule are jeopardized. All payments made pursuant to this section shall be considered the same as if paid directly to the Contractor and shall constitute partial payment of the Contract Sum. In the event the Contractor disagrees with the amount proposed to be paid to one or more Subcontractors, material men, laborers or claimants, the Contractor shall provide a bond in the amount the Contractor believes the Owner will overpay, within ten (10) days of receipt of notice, or be barred from making any claim that the amount of the direct payment was incorrect. Payment under this provision shall not jeopardize any other remedy available to the Owner.

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

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary

Init.

liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

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

§ 9.6.9 Subject to applicable law, if a petition in bankruptcy or any other arrangement or proceeding regarding insolvency, assignment for the benefit of creditors, trust, chattel mortgage, or similar state or federal proceeding, whether voluntary or involuntary, shall be filed with respect to the Contractor, the Owner may withhold the final balance, or any other payments, whether or not an application for progress payment has been properly filed, until expiration of the period of any guarantees or warranties required for the Contractor, and the Owner may pay out such funds the amount necessary to satisfy any claims or costs that otherwise would have been covered by such guarantees or warranties.

### § 9.7 Failure of Payment

If the Construction Manager and Architect do not issue a Certificate for Payment or a Project Certificate for Payment, through no fault of the Contractor, ~~Contractor and without justifiable basis under the Contract Documents,~~ within fourteen days after the Construction Manager's receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Construction Manager and Architect or awarded by binding dispute resolution, ~~then the Contractor may, upon seven-~~ unless the Owner, in good faith, disputes the amount certified, ~~then the Contractor may, upon twenty-one additional days' notice to the Owner, Construction Manager and Architect, stop the Work until payment of the amount owing has been received.~~ (1) the Contractor receives payment of the amount owing, or (2) the Contractor receives notice from the Architect, Construction Manager, or Owner of a full or partial withheld certification as provided herein. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents. The Owner shall have no obligation to pay the Contractor unless it receives a Certificate for Payment for the amount certified. The Owner may withhold payment from a non-performing Contractor irrespective of the issuance of a Certificate for Payment.

### § 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents and when all required occupancy permits, if any, have been issued, so the Owner can occupy or utilize the Work for its intended use.

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

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

§ 9.8.4 When the Architect, assisted by the Construction Manager, determines that the Work of all of the Contractors, or designated portion thereof, is substantially complete, the Construction Manager will prepare, and the Construction Manager and Architect shall execute, a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat,

Init.

utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

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

**§ 9.8.6** Notwithstanding Sections 9.8.1 and 9.8.2, as a condition precedent to establishing the date of Substantial Completion, the Contractor shall prepare and submit to the Architect and Construction Manager a comprehensive list of items to be completed or correct (a "punch list"). The Contractor shall respond immediately to correct Work deficiencies and/or punch list items. Should the Contractor fail to make corrections in a timely fashion, but not later than thirty (30) calendar days from the date of Substantial Completion or notification of the required corrections, whichever is earlier, such Work may be corrected by the Owner at the Contractor's sole expense, and the Contract Sum may be adjusted accordingly.

### **§ 9.9 Partial Occupancy or Use**

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

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

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

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

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

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect through the Construction Manager (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final ~~payment~~ ~~(5)-payment~~, (5) an affidavit that states the Work is fully completed and performed in accordance with the Contract Documents and is satisfactory to the Architect and the Owner, (6) in the event of Contractor bankruptcy, at the Owner's option, an order entered by the court having jurisdiction of the Contractor's insolvency proceeding authorizing such payment, (7) a general release executed by the Contractor on a form provided by the Construction Manager, (8) all close-out documents and warranties have been provided in a reasonable and acceptable manner, (9) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and ~~(6), (10)~~, if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and ~~reasonable~~ actual attorneys' fees.

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

§ 9.10.4 The making of final payment shall ~~constitute a waiver of Claims by the Owner except those arising from~~  
~~.1 — liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;~~  
~~.2 — failure of the Work to comply with the requirements of the Contract Documents;~~  
~~.3 — terms of special warranties required by the Contract Documents; or~~  
~~.4 — audits performed by the Owner, if permitted by the Contract Documents, after final payment.~~ not constitute a waiver of any Claims by the Owner.

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

## ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

### § 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall submit the Contractor's safety program to the Construction Manager for review and coordination with the safety programs of other Contractors. The Construction Manager's responsibilities for review and coordination of safety programs shall not extend to direct control over or charge of the acts or omissions of the Contractors, Subcontractors, agents or employees of the Contractors or Subcontractors, or any other persons performing portions of the Work and not directly employed by the Construction Manager.

### § 10.2 Safety of Persons and Property

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

- .1 employees on the Work and other persons who may be affected thereby;

Init.



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

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss. The Contractor shall take all reasonable safety precautions with respect to its Work and the work of others, shall comply with all standard industry safety measures and shall comply with all applicable laws, ordinances, rules, regulations and orders of any public authority and all other requirements of the Contract Documents, including those applicable to the safety of persons or property. The Contractor shall be responsible for the safety of all of the Contractor's employees and the safety of all of the Contractor's Subcontractors, suppliers, and their employees. The Contractor shall report in writing to the Construction Manager any injury to any of Contractor's or its Subcontractors' employees at the site within one (1) day after the occurrence of such injury. The Contractor acknowledges receiving, or having access to an opportunity to review, health and safety information about the Project site(s), including any applicable asbestos management plan and any other environmental information it deems necessary to perform the work.

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

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel. The Contractor shall be solely and fully responsible for any and all damage claims and for defense of all actions against the Owner relating to such explosives, hazardous materials and/or unusual methods.

§ 10.2.5 The Contractor shall promptly remedy damage and loss ~~(other than damage or loss insured under property insurance required by the Contract Documents)~~ to property referred to in Sections 10.2.1.2, 10.2.1.3 and 10.2.1.4 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2, 10.2.1.3 and 10.2.1.4. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner, Construction Manager or Architect or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

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

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

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

~~If either party~~ the Contractor suffers injury or damage to person or property because of an act or omission of the ~~other party, Owner,~~ or of others for whose acts ~~such party~~ the Owner is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the ~~other party~~ Owner within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the ~~other party~~ Owner to investigate the matter. ~~Owner to investigate the matter.~~ The Contractor's failure to do so shall be an irrevocable waiver of any claim against the Owner arising out of such injury or damage. Injury or damage to persons or property suffered by the Owner because of an act or omission of the Contractor or others for whose acts the Contractor is legally responsible shall be subject to the limitations provisions established by Michigan law.

Init.

§ 10.2.8.1 The Contractor causing damage to the Work of another Contractor shall be responsible for the repair and replacement of such damaged Work. Back charges may be made against the Contract sum of the damaging Contractor when corrections are not made promptly.

§ 10.2.8.2 The Owner reserves the right to pay the Contractor suffering damage from monies due the Contractor who is responsible for the Work required by same and shall deduct it from the Contract amount due the said responsible Contractor.

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

§ 10.2.10 The Contractor acknowledges that the safety of the Owner's students, employees and guests is of the utmost importance. The Contractor will take no action which would jeopardize the safety of the Owner's students, employees and guests and, without the Owner's written approval, shall take no action which would interfere with the Owner's activities. Without limiting the foregoing provisions, the Contractor shall comply with all laws applicable to students and/or school safety.

### **§ 10.3 Hazardous Materials**

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

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

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

**§ 10.3.4** The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site ~~unless such materials or substances are required by the Contract Documents. The Owner~~

Init.

/

shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances-site. To the extent the Contract requires the removal, transport and disposal of hazardous materials, the Contractor agrees that it assumes responsibility for said tasks as a part of the Agreement.

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

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

#### **§ 10.4 Emergencies**

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's reasonable discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7. Nothing in this section will be construed as relieving Contractor from the cost and responsibilities for emergencies covered hereby.

#### **§ 10.5 Notification of Utility Companies**

**§ 10.5.1** At least five (5) working days prior to the start of work in areas which may involve existing utility lines, the Contractor shall notify the MISS DIG notification system of the planned work.

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

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

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

### **ARTICLE 11 INSURANCE AND BONDS**

#### **§ 11.1 Contractor's Insurance and Bonds**

**§ 11.1.1** The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the ~~Agreement or elsewhere in the Contract Documents.~~ Agreement, as described elsewhere in the Contract Documents, as required by law, or as reasonably required by the Owner in light of the nature of services performed and insurance obligations of its other contractors and consultants. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. ~~The Owner, Construction Manager and Construction Manager's consultants, and the Architect and Architect's consultants, shall be named as additional insureds.~~ Owner shall be named as additional insured under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents. On all insurance contracts under which the Contractor is obligated to have its insurance company name the Owner as additional insured, the Contractor shall require such insurance company to add to the policy the following clause: "The insurance afforded to the Additional Insured is primary insurance. If the Additional Insureds have other insurance which is applicable to the loss on an excess or contingent basis, the amount of the insurance company's liability under this policy shall not be reduced by the existence of such other insurance." Certificates of insurance acceptable to the Owner shall be submitted by Contractor to the Owner and Construction Manager prior to commencement of Work and thereafter upon renewal or replacement of each required policy of insurance.

**§ 11.1.2** The Contractor shall provide bonds covering faithful performance of 100% of the Contract and payment of 100% of the obligations arising thereunder as stipulated in bidding requirements or specifically required by the Contract Documents or by law on the date of the Contract. The Contractor shall provide such additional surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents.

Init.

The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is ~~located~~ located and that are reasonably acceptable to the Owner. The Construction Manager shall obtain copies of the Performance Bond and Payment Bond required by the Agreement from the Contractor prior to Contractor beginning performance pursuant to the Agreement. The Contractor's obligation to provide such bonds shall not be waived in any fashion, including any failure to secure such bonds prior to Contractor beginning performance pursuant to the Agreement.

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

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

#### § 11.2 Owner's Insurance

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

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

§ 11.2.2.1 The Contractor shall at the Contractor's own expense provide insurance coverage for materials stored off the site after written approval of the Owner at the value established in the approval, and also for portions of the Work in transit until such materials are permanently attached to the work.

§ 11.2.2.2 The insurance required by Section 11.2 is not intended to cover machinery, tools or equipment owned or rented by the Contractor that are utilized in the performance of the Work, but not incorporated into permanent improvements. The Contractor shall, at the Contractor's own expense, provide insurance for owned or rented machinery, tools or equipment.

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

Init.

insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

### § 11.3 Waivers of Subrogation

~~§ 11.3.1~~ The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Construction Manager and Construction Manager's consultants; (3) the Architect and Architect's consultants; (4) other Contractors and any of their subcontractors, sub-subcontractors, agents, and employees; and (5) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Construction Manager, Construction Manager's consultants, Architect, Architect's consultants, other Contractors, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this Section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property. is not waiving any rights its insurer(s) may have to subrogation. To the extent any terms in the General Conditions or any other Contract Documents are contrary to the aforementioned, such terms shall be deemed void and unenforceable.

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

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

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

### § 11.5 Adjustment and Settlement of Insured Loss

~~§ 11.5.1~~ A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Construction Manager, Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Construction Manager, Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner. insureds. The Owner shall use its best efforts, with consultation of the Construction Manager, to reach a quick and fair settlement for all interested parties, with the insurance companies after a loss.

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

## ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

### § 12.1 Uncovering of Work

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

§ 12.1.2 If a portion of the Work has been covered that the Construction Manager or Architect has not specifically requested to examine prior to its being covered, the Construction Manager or Architect may ~~request~~request, with the Owner's consent, to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the ~~Contractor shall be entitled to an equitable adjustment to Owner shall reasonably adjust~~ the Contract Sum and Contract Time as ~~may be appropriate~~appropriate. At the time Owner's consent is sought as described herein, the Architect and/or Construction Manager shall notify the Owner that additional costs may apply if the Work is in accordance with the Contract Documents. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

### § 12.2 Correction of Work

#### § 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Construction Manager or Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion, and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Construction Manager's and Architect's services and expenses made necessary thereby, shall be at the Contractor's expense. If any portion of the Work is determined by the Owner, Construction Manager or Architect, either during performance of the Work or during any applicable warranty period, to be defective or not in compliance with the contract requirements, the Construction Manager or Owner shall notify the Contractor in writing that such Work is rejected. Thereupon, the Contractor shall immediately replace and/or correct such Work by making the same comply strictly with all the requirements therefor. The Contractor shall bear all costs of correcting such rejected Work, including work of other Subcontractors and including compensation for the Architect's and Construction Manager's additional services and any delay or related damage to the Owner made necessary thereby. The Construction Manager shall have the right to charge the Contractor for any compensation payable for the Architect's or Construction Manager's additional services required by the Contractor's rejected Work and deduct the payment from the next payment due the Contractor.

#### § 12.2.2 After Substantial Completion

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

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

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

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

Init.

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

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

§ 12.2.6 The Contractor shall respond immediately to correct Work deficiencies and/or punch list items. Failure to correct Work deficiencies and/or punch list items in a timely fashion shall be a substantial breach, and the Owner may terminate the Contract immediately without following the procedure identified in Section 14.2. As used in this Section 12.2.6, "timely" means the Contractor shall begin correction within three days of receiving the punch list or notice of work deficiency, and correction will be completed in a commercially reasonable time in accordance with the direction of the Construction Manager. Whether or not the Contract is terminated, if the Contractor fails to make corrections in a timely fashion, such Work may be corrected by the Owner, in its sole discretion, at the Contractor's expense and the Contract Sum may be adjusted by backcharge accordingly. The Contractor shall promptly notify the Construction Manager, in writing, when the Work deficiencies and/or punch list items are completed. Upon the review of the Work by the Construction Manager after such notification by the Contractor, if Work deficiencies and/or punch list items shall continue to exist, the Contractor shall reimburse any cost incurred by the Owner, including the Construction Manager's and Architect's fees for reinspections of the Work. Failure to pay such costs within ten (10) days of receipt of a demand regarding the same shall permit the Owner to withhold such amounts from the unpaid portion of the Contractor's contract.

### § 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made. The acceptance of nonconforming Work by the Owner shall be by written Change Order, specifically referencing that it addresses nonconforming work, acceptable to the Owner's authorized representative, and signed by all parties. Acceptance of nonconforming Work may only occur pursuant to such written Change Order.

## ARTICLE 13 MISCELLANEOUS PROVISIONS

### § 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4, State of Michigan in all respects, except that claims and causes of action brought by the Owner shall not be deemed untimely if filed within six (6) years of substantial completion of the entire (and all) Project(s).

### § 13.2 Successors and Assigns

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

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

### § 13.3 Rights and Remedies

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

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

### § 13.4 Tests and Inspections

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

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

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

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

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

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

### § 13.5 Interest

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

§ 13.6 The Contractor agrees that time is of the essence and to start work when directed by the Construction Manager and to furnish sufficient materials and a sufficient number of properly skilled workers, so as not to delay the work of any other Contractor or completion of the Project.

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

Init.



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

## ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

### § 14.1 Termination by the Contractor

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

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 Because the Construction Manager has not certified or the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents, subject to justifiable withholding of payment as described herein or in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

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

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

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days-days, for reasons within the Owner's control and through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees, or any other persons performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner, Construction Manager and Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3. The Contractor may not terminate the Contract unless it has submitted claims for the delays and sought an extension of time for each delay.

### § 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

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

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

Init.

three days' notice, terminate the Contractor's right to proceed with the Work, or such part of the Work as to which such defaults have occurred, and may take any one or more of the following actions::

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

The notice required by this Section 14.2.2 shall not give the Contractor a right to cure defective Work or to cure other grounds for termination under Section 14.2.1. Further, the Owner's failure to strictly comply with the formal requirements of termination (e.g., by providing less than three days' notice of termination) shall not be a substantial breach by the Owner. The Owner may terminate the Contractor immediately if a Contractor endangers persons or property or has breached Project safety requirements.

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

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

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Construction Manager's and Architect's services and expenses made necessary thereby, and other damages incurred by the Owner in pursuing termination and completion of the Work, including actual attorney and legal fees and costs, and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall, upon application, be certified by the Initial Decision Maker after consultation with the Construction Manager, and this obligation for payment shall survive termination of the Contract.

### § 14.3 Suspension by the Owner for Convenience

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

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

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

### § 14.4 Termination by the Owner for Convenience

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

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

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

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

Init.

## ARTICLE 15 CLAIMS AND DISPUTES

### § 15.1 Claims

**§ 15.1.1 Definition.** A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the ~~Contract~~ Contract, including but not limited to additional sums, additional time for performance, or damages for delay. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents. The Contractor shall not knowingly (as "knowingly" is defined in the Federal False Claims Act, 31 USC 3729, et seq.) present or cause to be presented a false or fraudulent Claim. As a condition precedent to making a Claim by the Contractor, the Claim shall be accompanied by an affidavit sworn to before a notary public or other person authorized to administer oaths in the State of Michigan and executed by an authorized representative of the Contractor, which states that: "The Claim which is submitted herewith complies with subparagraph 15.1.1 of the General Conditions, as amended, which provides that the Contractor shall not knowingly present or cause to be presented a false or fraudulent claim." Claims of the Owner shall be governed by the relevant Michigan statutory limitations period.

### § 15.1.2 Time Limits on Claims

~~The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2 in accordance with Section 13.1 and Section 15.1.2.1, regardless of any other time frames identified in this Agreement. The Contractor shall commence all claims and causes of action in accordance with Section 15.1 and, if shorter, any other provisions of this Agreement and Michigan law..~~

§ 15.1.2.1 Regardless of any provisions to the contrary, the statute of limitations with respect to any defective or nonconforming Work which is not discovered by the Owner shall not commence until the discovery of such defective or nonconforming Work by the Owner. See also Section 13.1.

### § 15.1.3 Notice of Claims

**§ 15.1.3.1** Claims by ~~either the Owner or Contractor~~, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by written notice to the other party Owner and to the Initial Decision Maker with a copy sent to the Construction Manager and Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party the Contractor under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant Contractor first recognizes the condition giving rise to the Claim, whichever is later. Failure to timely and properly initiate a claim shall be an irrevocable waiver of such claim. Claims by the Owner shall be governed by the applicable statute of limitations period, except as such time frame may be longer in accordance with Section 13.1 and Section 15.1.2.1.

**§ 15.1.3.2** Claims by ~~either the Owner or Contractor~~, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by written notice to the other party. In such event, no decision by the Initial Decision Maker is required. Claims by the Contractor under this Section 15.1.3.2 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the Contractor first recognizes the condition giving rise to the Claim, whichever is later. Failure to timely and properly initiate a claim shall be an irrevocable waiver of such claim. Claims by the Owner shall be governed by the applicable statute of limitations period, except as such time frame may be longer in accordance with Section 13.1 and Section 15.1.2.1.

### § 15.1.4 Continuing Contract Performance

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

Init.

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

§ 15.1.5 Claims for Additional Cost. If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Failure to provide such notice shall serve as an absolute bar against a claim for such an increase in the Contract Sum. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4. A Project delay shall not be a basis for a Claim for additional cost. Delay claims against the Owner may be remedied only through an extension of time per Section 8.4.2 and Section 8.4.3.

§ 15.1.6 Claims for Additional Time

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

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

§ 15.1.7 Waiver of Claims for Consequential Damages. The Contractor and Owner ~~waive Claims against each other waives Claims against the Owner~~ for consequential damages arising out of or relating to this Contract. This ~~mutual~~ waiver includes

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

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

§ 15.2 Initial Decision

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

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to ~~resolve the Claim.~~ interpret the Claim. Within ten (10) days of a written request, the Contractor shall make available to the Owner or its representative all of its books, records, or other documents in its possession or to which it has access relating to a Claim and shall require its subcontractors, regardless of tier, and materialmen to do the same.

Init.

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

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

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

§ 15.2.6 ~~Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1. Regardless of any other time frames identified herein, claims and causes of action brought by the Owner shall be governed in accordance with the statute of limitations periods under Michigan law, except for such longer periods of time as may be permitted in Section 13.1 and Section 15.1.2.1.~~

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

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

**NOTICE AND PRIOR APPROVAL**

Except where otherwise expressly required by the terms of the Agreement, the Contract Documents or the General Conditions, exercise by the Owner of any contractual or legal right or remedy without prior notice to or approval by the Contractor's surety shall in no way bar or prohibit the Owner's ability to pursue such right or remedy. Further, pursuit of such a right or remedy without prior notice to or approval of surety shall in no way compromise, limit or bar any claim by the Owner against a surety bond of the Contractor. The Owner's claims against a Contractor's surety bond shall be governed by Section 13.1 with respect to any limitations periods.

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

§ 15.3 Mediation

§ 15.3.1 ~~Claims~~, Except as otherwise agreed in writing by the parties, claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of commencement of the parties' agreed upon binding dispute

Init.

resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. ~~If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.~~

~~§ 15.3.3~~ Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

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

#### ~~§ 15.4 Arbitration~~

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

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

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

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

#### ~~§ 15.4.4 Consolidation or Joinder~~

~~§ 15.4.4.1~~ Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration. The Owner, at its sole discretion, may consolidate a mediation conducted under this Agreement with any other arbitration-mediation to which it is a party provided that (1) the arbitration-mediation agreement governing the other arbitration-mediation permits consolidation, (2) the arbitrations-mediations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations-mediations employ materially similar procedural rules and methods for selecting arbitrator(s)-mediator(s).

~~§ 15.4.4.2~~ Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party The Owner, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration-mediation, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration-mediation involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

~~§ 15.4.4.3~~ The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement. Contractor further agrees to include similar dispute resolution provisions in all

agreements with the independent contractors and consultants retained for the Project and to require all independent contractors and consultants also to include similar dispute resolution provisions in all agreements with subcontractors, all subconsultants, suppliers or fabricators so retained, thereby providing for a consistent method of dispute resolution between the parties to those agreements. Subject to the other limitations periods identified in these General Conditions which are understood to govern over this sentence, no demand for mediation shall be made after the date when the applicable statutes of limitation would bar legal or equitable proceedings. During the pendency of any mediation, all applicable limitations period shall be tolled until the conclusion of that process.

The Owner reserves the right in its discretion to require consolidation or joinder of any mediation arising out of or relating to this Agreement with another mediation involving a person or entity not a party to this Agreement in any event the Owner believes such consolidation or joinder is necessary in order to resolve a dispute or avoid duplication of time, expense or effort. In the event the Owner is involved in a dispute which is not subject to mediation involving a person or entity not a party to this Agreement, the mediation provisions applicable to the parties shall be deemed to be void and nonexistent in the event Owner, in its discretion, determines the Contractor should become a party to that dispute by joinder or otherwise. Any mediation hearing shall be held in the general location where the Project is located, unless another location is mutually agreed upon.

Modified: 10/20/20; 11:30am

**PART 1 – GENERAL**

**1.01 DESCRIPTION**

- A. Addenda are written or graphic instruments issued prior to execution of construction contracts which add to, delete from, clarify, or correct the Bidding Documents and/or the Contract Documents.
- B. Addenda may be included in the Bidding Documents and may be included in the Contract Documents.
- C. Addenda may be issued by either the Architect or the Construction Manager as deemed necessary to facilitate the building and construction of the Project.

**1.01 BIDDERS' AND CONTRACTORS' RESPONSIBILITIES**

- A. Each Bidder shall be responsible for taking the provisions of all Addenda issued prior to the Bid Date into account during the presentation of his Proposal.
- B. Each Bidder shall be responsible for obtaining all Addenda, and for ascertaining that all Addenda issued prior to the Bid Date have been considered in preparing his Proposal.
- C. Each Contractor shall perform his work in accordance with all Addendums issued.

**END OF SECTION 00900**



**MILESTONE  
SCHEDULE  
ON  
FOLLOWING  
PAGE(S)**

END OF SECTION 00999

# WESTERN HIGH SCHOOL Toilet Room Renovations Milestone Schedule



ID	% Complete	Task Name	Duration	Start	Finish	December	January	February	March	April	May	June	July	August					
1	0%	<b>Milestone Schedule</b>	<b>170 days</b>	<b>Mon 12/9/24</b>	<b>Fri 8/1/25</b>	←-----→													
2	0%	Award Contracts	1 day	Mon 12/9/24	Mon 12/9/24														
3	0%	Contracts	20 days	Tue 12/10/24	Mon 1/6/25														
4	0%	Shop Drawings / Submittals	30 days	Tue 1/7/25	Mon 2/17/25														
5	0%	Procurement	80 days	Tue 2/18/25	Mon 6/9/25														
6	0%	Demo Bathroom Partitions / Accessorie	6 days	Mon 6/9/25	Mon 6/16/25														
7	0%	Ceiling Demo	7 days	Wed 6/11/25	Thu 6/19/25														
8	0%	M.E.P. Demo	10 days	Mon 6/16/25	Fri 6/27/25														
9	0%	Power Wash Floors	5 days	Wed 6/18/25	Tue 6/24/25														
10	0%	Paint	7 days	Mon 6/23/25	Tue 7/1/25														
11	0%	M.E.P. Install	10 days	Mon 6/30/25	Fri 7/11/25														
12	0%	Ceiling Install	10 days	Tue 7/1/25	Mon 7/14/25														
13	0%	Partitions and Accessories Install	10 days	Wed 7/16/25	Tue 7/29/25														
14	0%	Turn Over Project	1 day	Fri 8/1/25	Fri 8/1/25														

Task		External Tasks		Inactive Summary		Start-only		Deadline	
Split		External Milestone		Manual Task		Finish-only			
Milestone		Inactive Task		Duration-only		External Tasks			
Summary		Inactive Milestone		Manual Summary Rollup		External Milestone			
Project Summary		Inactive Milestone		Manual Summary		Progress			

**PART 1 – GENERAL**

**1.01 PROJECT DESCRIPTION**

**A. Bay City Public Schools – 2020 Bond Series 3 - Phase 4 Western HS Bathrooms**

**1.02 CONTRACTORS USE OF PREMISES**

- A. Contractors shall limit their use of the Project site for Work and for storage, to allow for:
1. Work by other Contractors.
- B. Contractors shall coordinate their use of the Project site under the direction of the Construction Manager.
- C. Contractors shall assume full responsibility for the protection and safekeeping of materials and equipment stored on the site. No security will be employed.
- D. Each Contractor shall move any stored material or equipment under their control if it interferes with the operations of the Owner or other Contractors, as directed by the Construction Manager.
- E. Contractors shall obtain and pay for additional storage or work areas needed for operations not allowed on the site.

**1.03 OWNER OCCUPANCY**

- A. The owner intends to occupy the Project by **Refer to Milestone Schedule**. All contractors must comply with this requirement.

**1.04 OWNER FURNISHED PRODUCTS**

- A. Products furnished and paid for by the Owner are described in the Specifications and in the Bid Division List (Section 00309).
- B. Owner's Responsibilities Regarding Owner-Furnished Products:
1. Arrange for and deliver necessary shop drawings, product data and samples to the installing contractor,
  2. Arrange and pay for product delivery to the site, in concert with the Short-Term Construction Activities Plan,
  3. Arrange for the suppliers to submit bills of materials to Contractors,
  4. Inspect deliveries jointly with Contractors,
  5. Submit claims for transportation damage,
  6. Arrange for replacement of damaged, defective, or missing items,
  7. Arrange for manufacturer's warranties, bonds, service, and inspections, as required.

- C. Contractor's Responsibilities Regarding Owner-Furnished Products:
1. Designate needed delivery dates for each product in the Short-Term Construction Activities Plan,
  2. Review shop drawings, product data and samples,
  3. Review and return Owner-Furnished shop drawings, data, and samples with notification of any discrepancies or problems anticipated in use of the product, within 2 weeks,
  4. Promptly inspect products jointly with the Owner, and record shortages, damaged items, and defective items,
  5. Handle products at the site, including uncrating and storage,
  6. Protect products from exposure to elements, and other forms of damage,
  7. Assemble, install, connect, adjust, and finish products as stipulated in the Specification,
  8. Repair or replace items damaged by Contractor,
  9. Dispose of all crating, wrapping, and trash related to the material.

**END OF SECTION 01010**

**PART 1 – GENERAL**

**1.01 NORMAL WORK HOURS**

A. 7 a.m. to 5 p.m., Monday through Friday.

**1.02 EXCEPTIONS**

- A. Necessary variations of normal work hours shall only occur with the express approval of the Construction Manager on the Owner's behalf.
- B. As a condition to the contract, the Contractor agrees that no premium-time, over-time or other special rate shall be charged for the scheduled completion of the project for any reason or cause.
- C. It will be the responsibility of each Contractor to provide an adequate work force to assure the timely completion of all Work.
- D. The Contractor will work whatever hours required (overtime, weekends, holidays) to complete their work and allow for the completion of all other work to achieve final completion in the time frames required by the Owner.

**END OF SECTION 01030**

**PART 1 – GENERAL**

**1.01 CONSTRUCTION MANAGEMENT**

- A. This is a Construction Management project. There is no General Contractor. All Contractors on this Project are Prime Contractors. The Owner will award contracts for all Bid Divisions involved in the Project. The Project will be controlled and administered by a Construction Manager.

**1.02 WORK ASSIGNMENTS**

- A. Nothing contained on the Contract Documents, and especially in the work scope of any Bid Division, shall be construed as a Work assignment to any construction trade industry. Each Contractor is responsible for their own decisions on Work assignments and shall make them in accord with the prevailing practice in the areas of the Project, and in such a way that neither their progress nor the progress of others will be adversely affected.
- B. Disputes that may arise over improper assignments or over assignments claimed by more than one Contractor shall be settled immediately by the Contractors and shall in no case result in a slowdown or stoppage of Work of any Contractor.

**1.03 RETAINAGE ON OWNER PURCHASED ITEMS**

- A. The Owner may retain an amount of Five Thousand (\$5,000.00) or ten percent (10%); whichever is the larger amount, on material and/or equipment purchased from suppliers for inclusion in the Work, until such time as it is satisfactorily installed. The purpose of this provision is to ensure proper conformance to the Contract Documents.

**1.04 PERFORMANCE OF WORK**

- A. All Contractors shall provide weekly input to aid in the preparation of the Look Ahead Schedule by which the Project will be built. Consequently, it is the responsibility and obligation of each Contractor to utilize their manpower and resources according to the commitments made under the Look Ahead Schedule.

**1.05 PROMPTNESS OF EXECUTION**

- A. It is the intention of the Owner to complete the Project in the fastest practical time frame. Whereas varying conditions inherent in the construction process will affect the progress of the Work, it is the intent of each construction contract that the Contractor maintain the progress pace set forth in the CAP schedule.

**1.06 PROGRESS PAYMENTS**

- A. It is the intention of the Owner to recognize timely performance prescribed in the CAP. Contractors who maintain specified progress will be eligible for 100% Progress Payments.
- B. Contractors who fail to maintain specified progress may be subject to retainage up to 100% of Progress Payments, at such times as those Contractors are judged by the Construction Manager, and/or the Project Architect, to be behind schedule.

**1.07 PAYMENT FOR STORED MATERIALS**

- A. As a means of eliminating cost escalation on available items of material and equipment, and in the interest of obtaining competitive Bids, the Owner will provide payment for contract items purchased early and stored on site, and in specific pre-approved instances, off the Project site as well. To qualify for such payment, the material or equipment must be safely stored, protected, and insured against loss or damage, inspected and dedicated to this Project only. Any extra cost of off-site storage is to be included as part of the Bid Proposal.

- B. Materials stored on the site shall be in the area designated by the Construction Manager. Materials or equipment lost through theft, or mishandling, shall be replaced by the Contractor, without cost to the Owner. The Contractor receiving materials shall provide and maintain protection of stored materials at no additional cost to the Owner. The contractor shall retain responsibility for any loss, damage, or replacement costs of any and all stored materials.
- C. Requests for payment for materials delivered and stored at the site must have acceptable itemized bills attached and available at the time of delivery.

**1.08 SCHEDULE OF VALUES**

- A. The Schedule of Values (Section 00670) shall include the following mandatory items for any Contractor who provides on-site labor as a part of their Contract:

- 1. Labor for each portion of the work to be performed.
- 2. Materials for each portion of the work to be performed.
- 3. Performance Bond and Labor & Material Payment Bond (when required by Owner).  
Value: Actual Cost of Bonds
- 4. Daily housekeeping and clean-up inclusive of any special cleaning and preparation required by the specifications for delivering the building for the Owners occupancy.  
Value: Two percent (2%) of the total Contract Amount
- 5. Retainage / Punch List  
Value: Ten percent (10%) of the total Contract Amount

- B. Monthly allocations shall be made to each item as appropriate and as directed by the Construction Manager.
- C. The value of the Housekeeping/Final Clean-Up item shall be two percent (2%) of the Contract value, or as described by the Construction Manager.

**1.09 MATERIAL AND EQUIPMENT EXPEDITING**

- A. The Construction Manager will initiate and coordinate an expediting program on the Owner's behalf in cooperation with each Contractor, incorporating all critical items of material and/or equipment provided under the various Bid Division contracts.
- B. Each Contractor shall provide the Construction Manager with a completed Material and Equipment Purchase/Delivery list and as a part of the Bid Division Descriptions. The Contractor's purchase order issue date, supplier name and phone number and the delivery date for each material and equipment item required for the project must be provided.
- C. Each Contractor shall further cooperate by keeping the Construction Manager informed of all changes in the commitments previously indicated in the Material and Equipment Purchase/Delivery list and when deemed necessary by the Construction Manager, provide source contacts for direct expediting by the Construction Manager.
- D. The Contractor must require all suppliers to notify the Contractor's office a minimum of twenty-four (24) hours prior to the delivery of any materials or equipment so the Contractor is present to receive and unload the delivery.
- E. If a Contractor is not present on the job site to receive and unload the Contractor's material or equipment the Construction Manager may have the owner authorize others to perform the work. All costs associated with such actions will be deducted from the payments due the Contractor.

**1.10 PROTECTION OF THE WORK OF OTHERS**

- A. Contractors shall consider protection of finished Work of prime importance. Care shall be taken by Contractors not to damage completed Work of other Contractors, and to provide adequate protection to their own completed Work. Contractors who damage the work of others or existing finishes shall be back charged all costs associated with repairing or replacing the damaged work.
- B. When moving laborers and/or materials across floors, grades, roofs, other vulnerable surfaces, or through occupied areas, the Contractor shall provide adequate surface protection to prevent damage to surfaces.

**1.11 MANDATORY ATTENDANCE AT MEETINGS**

- A. Each Contractor shall provide a representative of the Contractor authorized and empowered to enact decisions regarding schedule compliance, manpower commitments and cost changes at all Project and Progress Meetings.

**1.12 PRE-ON-SITE ACTIVITY MEETING**

- A. Each Contractor is required to meet on the site with the Field Construction Manager prior to beginning their Work. The purpose of this meeting is to review the intent of the Contract Documents as they pertain to the Contractor's Work, and to integrate the Contractor's schedule into the Short-Term Construction Activities Plan for the Project.

**1.13 RETURN ACTIVITIES**

- A. Each Contractor is required to report to the Field Construction Manager prior to resuming Work on the Project after an absence from the site of one or more working days. The purpose of reporting is to make the Field Construction Manager aware of the Contractor's re-involvement with the Project, and to provide an update regarding any conditions that could affect the continuing Work of the Contractor.

**1.14 CUTTING AND PATCHING**

- A. Each Contractor shall make arrangements with the Construction Manager for fitting their Work into the Project and shall coordinate all fitting with other Contractors. Whenever any contractor has been given sufficient information as to required openings prior to beginning their Work, they shall pay the cost for cutting and/or restoring if they fail to provide proper required openings.
- B. Each Contractor shall be responsible for any cutting, fitting, and patching that may be required to complete their Work if they have failed to properly notify the Construction Manager and preceding Contractors of any openings required. Contractors shall not endanger the Work of any other Contractor by cutting, excavating, or otherwise altering any Work, and shall not cut or alter the Work of any other contractor except with the consent of the Construction Manager. Any costs caused by defective or ill-timed Work shall be borne by the party responsible for such Work.
- C. Cutting or restoring performed by any Contractor, for work that is rejected by the Architect shall be corrected under the direction of the Construction Manager, as instructed by the Architect. The Contractor responsible for the defective restoration shall incur the cost of such Work.
- D. Openings over six inches in diameter must be formed by the concrete contractor(s).
- E. Cutting and patching of concrete floors and decks shall be performed in a neat and workman like manner, using a coring machine. After coring, each Contractor shall pack and grout openings around sleeves or other Work penetrating floors and decks.



- F. No Contractor shall do any cutting that may impair the strength of any building or its components. No holes, except for small screws or bolts, may be drilled in beams or other structural members for the purpose of supporting or attaching Mechanical Work, without prior approval from the Architect.
- G. Each Contractor shall be responsible for the cutting and patching of holes and openings through existing walls, partitions, floors, ceilings, and roofs necessary for the installation of their work. If the location for a hole or opening is through an existing joist, beam, or column, the Contractor shall notify the Construction Manager who, after consultation with the Architect, will instruct the Contractor how to proceed.
- H. Each Contractor shall be responsible for the closing and patching of holes and openings through existing walls, partitions, floors, ceilings, and roofs created by demolition work they are shown to complete unless noted otherwise.
- I. Temporary removal and replacement of all ceilings not scheduled to be replaced shall be the responsibility of the Contractor requiring access.
- J. The Contractor responsible for patching shall provide both the rough (substrate) and finish surfaces. They shall employ only qualified tradesmen to assure that all work is done in a neat and workmanlike manner. All patching shall match adjacent surfaces.

**1.15 BLOCKING, BACKING AND GROUNDS**

- A. Each Contractor shall be responsible for providing the blocking, backing and grounds necessary for the installation of their work unless specifically noted on the drawings in which case said blocking, backing, and grounds shall be provided by the Bid Division supplying shown backing material.

**1.16 ACCESS PANELS**

- A. Each Contractor shall be responsible for furnishing the necessary access panels for items of work installed under their contract.
- B. Installation of all access panels shall be the responsibility of the contractor erecting the wall or ceiling system.
- C. If not specified, these access panels shall be approved by the Architect prior to installation.

**END OF SECTION 01040**

**PART 1 – GENERAL**

**1.01 DESCRIPTION**

- A. All Applications for Payment must be submitted on a “Contractor Invoice Form.”
- B. Contractor Invoice Form(s) will be sent to contractors each month by the Construction Manager. The Contractor Invoice Form must be returned to the Construction Manager by the due date (located in the upper left-hand corner of the form) in order to be included in the current month Cost Control Manual to be submitted to the Owner. The due date can also be found on “**Attachment A**” of the Owner-Contractor contract.
- C. Any completed Contractors Invoice Form received by the Construction Manager **later** than the contract established due date **will not** be accepted and **will need to be re-billed the following month.**

**1.02 SWORN STATEMENTS AND WAIVERS**

- A. All Applications for Payment must be accompanied by a Sworn Statement and applicable waivers.
- B. For complete instructions on preparing Sworn Statements and Waivers, please reference Section 01050 – Sworn Statements and Lien Waivers.
- C. Final Sworn Statement and Full Unconditional Lien Waivers must be provided prior to the release of the final payment or exchanged for final payment by presenting them in person.

**1.03 SCHEDULE OF VALUES**

- A. All billings are processed based on approved Schedules of Values. Absolutely NO CHANGES may be made to approved Schedule of Values.

**1.04 CHANGE ORDERS**

- A. Increases or decreases in the Contract Amount shall be through change orders.
- B. Each Change Order shall be listed as a new line item on the Contractor Invoice Form. This is the only way a change order will be processed for payment.

**1.05 APPROVAL OR REJECTION OF APPLICATION FOR PAYMENT**

- A. Approved Applications for Payment will be included in the current month Cost Control Manual submitted to the Owner for their approval and payment. Following approval, the Owner will process payments and forward them to the Construction Manager for accompaniment of appropriate waiver(s), and payment will be sent on to Contractor.
- B. Contractors with Applications for Payment that were adjusted or rejected will be contacted by Wolgast for an explanation.
- C. No payment will be issued through the Owner for any progress payment when the substantiating sworn statement and lien waiver(s) from the previous payment have not been received by the Construction Manager.

**END OF SECTION 01045**

**PART 1 – GENERAL**

**1.01 DESCRIPTION**

- A. Sworn Statement shall be included with each Application for Payment.
- B. A sample Sworn Statement follows as Pages 2 and 3 of this Section.
- C. Page 1 of the Sworn Statement shall contain all necessary Project information, including
  - 1. Date of Sworn Statement.
  - 2. County in which the deponent is at the time of the completion of the Sworn Statement.
  - 3. Deponent name.
  - 4. Contractor name on whose behalf the deponent is making statement.
  - 5. County in which the Project is situated.
  - 6. Project name and site location.
  - 7. Deponent signature and typewritten name.
  - 8. Notary name, signature, and commission expiration date.
- D. Page 2 of the Sworn Statement shall contain all necessary Project information, including:
  - 1. Project name and site location.
  - 2. Subcontractor/Supplier listings as submitted for approval at the beginning of the Project.
  - 3. Description of work to be completed by each subcontractor/supplier.
  - 4. Total contract amount for each subcontractor/supplier.
  - 5. Listings of amounts paid, amounts owing, retentions held, and balances to complete.

**1.02 WAIVERS**

- A. All Applications for Payment must be accompanied by a Sworn Statement and applicable waivers.
- B. Sample “partial” and “full” waivers follow as Pages 4 and 5 of this Section.

**1.03 APPLICATION AND CERTIFICATE FOR PAYMENT**

- A. No payment will be issued through the Owner for any progress payment when the substantiating sworn statement and lien waiver(s) from the previous payment have not been received by the Construction Manager.
- B. For additional information and instructions on the Application and Certificate for Payment, please reference Section 01045.

**Sample Sworn Statement**

STATE OF MICHIGAN  
COUNTY OF \_\_\_\_\_

\_\_\_\_\_ Being duly sworn, deposes and says that  
\_\_\_\_\_ Is the Contractor for an improvement to the following described real property situated in  
\_\_\_\_\_ COUNTY, MICHIGAN, known as \_\_\_\_\_. That the following is a statement of each subcontractor and  
supplier and laborer, for which laborer the payment of wages for fringe benefits and withholdings is due but unpaid, with whom the contractor has  
subcontracted for performance under the contract with the owner or lessee thereof, and that the amounts due to the persons as of the date hereof  
are correctly and fully set forth opposite their names, as follows on Page 2.

That the contractor has not procured materials from, or subcontracted with, any other person other than those set forth and owes no money for the  
improvement other than the sums set forth.

Deponent further says that he or she makes the foregoing statement as the contractor for the purpose of representing to the owner or lessee of the  
above described premises and his or her agents that the above described property is free from claims of construction liens, or the possibility of  
construction liens, except as specifically set forth and except for claims of Construction Lien Act, Act No. 497 of the Public Acts of 1980, as amended,  
being Section 570.1109 of the Michigan Compiled Laws.

\_\_\_\_\_  
Deponent Signature

\_\_\_\_\_  
Deponent Name – Typewritten

\_\_\_\_\_  
Subscribed and sworn before me this \_\_\_\_\_ day of \_\_\_\_\_, 19 \_\_\_\_\_.

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

\_\_\_\_\_  
Notary Public Name – Typewritten

My commission expires: \_\_\_\_\_

Warning to the owner; an owner or lessee of the above described property may not rely on this sworn statement to avoid the claim of a  
subcontractor, supplier, or laborer who has provided a notice of furnishing or a laborer who may provide a notice of furnishing pursuant to Section  
109 of the Construction Lien Act to the designee or the owner of lessee if the designee is not named or has died.

Warning to the deponent; a person, who with intent to defraud, gives a false sworn statement is subject to criminal penalties as provided in Section  
110 of the Construction Lien Act, Act No. 497 of the Public Acts of 1980, as amended, being Section 50.1110 of the Michigan Compiled Laws.



**PARTIAL UNCONDITIONAL WAIVER OF LIEN  
Subcontractor/Supplier**

Check No. \_\_\_\_\_

Amount: \$ \_\_\_\_\_

Invoice#: \_\_\_\_\_

I/we have a contract with **Bay City Public Schools – 2020 Bond Series 3 - Phase 4 Western HS Bathrooms** to provide

\_\_\_\_\_ For the improvement of the property described as **Bay City Public Schools**, and hereby waive my/our construction lien to the amount of \$\_\_\_\_\_ for labor/materials provided through \_\_\_\_\_.

This waiver, together with all previous waivers, if any, (circle one) DOES / DOES NOT cover all amounts due to me/us for contract improvement through the date shown above.

\_\_\_\_\_  
(Name of Lien Claimant)

By: \_\_\_\_\_ Signed on: \_\_\_\_\_  
(Signature of lien claimant or authorized officer or agent of lien claimant) (Date)

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

Telephone: \_\_\_\_\_

**FULL UNCONDITIONAL WAIVER OF LIEN  
Subcontractor/Supplier**

Check No. \_\_\_\_\_

Amount: \$ \_\_\_\_\_

Invoice#: \_\_\_\_\_

My/our contract with **Bay City Public Schools – 2020 Bond Series 3 - Phase 4 Western HS Bathrooms** to provide

\_\_\_\_\_ For the improvement of the property described as **Bay City Public Schools**, having been fully paid and satisfied, all my/our construction lien rights against such property and hereby waived and released.

\_\_\_\_\_  
(Name of Lien Claimant)

By: \_\_\_\_\_ Signed on: \_\_\_\_\_  
(Signature of lien claimant or authorized officer or agent of lien claimant) (Date)

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

Telephone: \_\_\_\_\_

**END OF SECTION 01050**

**PART 1 – GENERAL**

**1.01 DESCRIPTION**

- A. The Change Event Form will be used to document any request for a change in the scope of the Work throughout the construction process, and establish owner and architect approval prior to preparing a change order or having work performed.
- B. The Change Event Form will only be used when it IS NOT NECESSARY for work to be performed immediately.

**1.02 PROCESSING OF CHANGE EVENT FORMS**

- A. The Owner, Architect, Engineer, Construction Manager or Contractor may initiate a request for change during the Project in the form of a bulletin/proposal request, construction change directive, request for information, or value engineering proposal. Requests for changes shall be submitted to the Construction Manager for preparation and distribution of the Change Event Form.
- B. The Change Event will be accompanied by a copy of all related sketches, drawings, specifications, instructions, etc.
- C. The Construction Manager will forward the Change Event to the Contractor for the purposes of obtaining an itemized quote (including labor, material, equipment, units, rates, and subtotals) for the changes requested.
- D. The Contractor will complete and return the Change Event Form within five (5) days, or less, to the Construction Manager.
- E. The Construction Manager will review all Change Events and itemized detail for accuracy and validity within 48 hours of receiving said information.
- F. If the Construction Manager approves the costs or deductions submitted by the Contractor in the Change Event, the Construction Manager will:
  - 1. Forward one (1) copy of the Change Event with itemized detail to the Architect for review and endorsement, stipulating the date by the endorsed Change Event is to be returned.
  - 2. Discuss the Change Event and costs or deductions with the Architect to secure their endorsement.
  - 3. Forward one (1) copy of the Change Event with itemized detail to the Owner for approval and signature.
- G. After receiving the endorsed Change Event(s) timely from the Architect and Owner, the Construction Manager will prepare a Change Order for Contractor signature. The Contractor will sign the Change Order, acknowledging notice to proceed with change, and return a copy back to the Construction Manager.
- H. Only Change Events with the Architect's and Owner's signature of approval and acceptance will be processed into Change Orders.

**1.03 PRICING GUIDELINES FOR CHANGE EVENTS**

- A. Pricing Guidelines for Change Events that will be considered for Change Orders shall be fully detailed and itemized showing each of the following:
  - 1. Labor: All field labor indicating worker name, date, and hours worked and hourly rate; hourly rate shall be based on straight time only and shall include the labor classification.



2. Fringes: All established payroll taxes, assessments and fringe benefits on the labor in 7.3.2.1; this may include, but is not limited to, FICA, Federal and State unemployment, Health and Welfare and Workers Compensation; each of the fringes is to be a separate line item.
3. Material: All material purchased by the Contractor and incorporated into the changed Work, showing quantities, unit costs and costs of each item as appropriate; material costs will only be allowed at the Contractor's actual cost including any and all discounts, rebates or related credits. Only one third (33 percent) of the cost of reusable materials for each use, such as formwork lumber, shoring or temporary enclosures will be allowed.
4. Equipment: Rental Equipment – charges for certain non-owned, heavy or specialized equipment up to 100 percent of the documented rental costs; no rental charges will be allowed for hand tools, minor equipment, simple scaffolds, etc.; downtime due to Contractor caused delays, repairs, maintenance, late fees and weather will not be allowed. Owned Equipment – charges for certain owned, heavy or specialized equipment up to 100 percent of the cost listed by the Associated Equipment Dealers Blue Book; no charges will be allowed for hand tools, minor equipment, simple scaffolds, etc.; only the actual time the equipment is necessary to be in use to perform the work will be allowed; downtime due to Contractor caused delays, repairs, maintenance and weather will not be allowed.
5. A total amount of ten (10) percent of the total of all labor, materials and equipment performed by the Contractor's own forces shall be allowed for the Contractor's combined overhead and profit.
6. A total amount of ten (10) percent of the total of all extra work performed by the Contractor's Subcontractor(s) shall be allowed for the Contractor's combined overhead and profit.
7. For work deleted, that would have been completed by the Contractor or the Contractor's Subcontractor(s) an amount equaling the cost of the Work plus an amount equaling five (5) percent of the work shall be credited to the owner.

**1.04 TIME LIMIT**

- A. Contractor must return the Change Event and respective price quotations within five (5) working days, unless noted otherwise on the Construction Management issued Change Event.
- B. Failure to return the completed Change Event within the predefined time period will indicate the contractor shall have no charge for the associated work within their bid division per the Change Event at no additional cost to the Owner, Construction Manager and Architect.

**END OF SECTION 01051**

**PART 1 – GENERAL**

**1.01 DESCRIPTION**

- A. The Change Order Document is the legal instrument used to modify the Contract Documents.
- B. Change Orders will be prepared, as necessary, following the acceptance of the Change Event amount by the Owner (Section 01051).
- C. A sample Change Order follows as page 2 of this Section.

**1.02 PROCESSING OF CHANGE ORDERS**

- A. All changes and potential changes to the Project shall be documented by using the Change Event Form (Section 01051).
- B. Complete and approved Change Events will be converted into Change Orders as necessary.
- C. One (1) original Change Order shall be prepared by the Construction Manager and forwarded to the Contractor for signature. Signatory parties shall include: the Contractor only on Change Order.

**1.02 PRICING GUIDELINES**

- A. Pricing Guidelines for Change Events that will be considered for Change Orders shall be fully detailed and itemized showing each of the following:
  - 1. Labor: All field labor indicating worker name, date, and hours worked and hourly rate; hourly rate shall be based on straight time only and shall include the labor classification.
  - 2. Fringes: All established payroll taxes, assessments, and fringe benefits on the labor in 7.3.2.1; this may include, but is not limited to, FICA, Federal and State unemployment, Health and Welfare and Workers Compensation; each of the fringes is to be a separate line item.
  - 3. Material: All material purchased by the Contractor and incorporated into the changed Work, showing quantities, unit costs and costs of each item as appropriate; material costs will only be allowed at the Contractor's actual cost including any and all discounts, rebates or related credits. Only one third (33 percent) of the cost of reusable materials for each use, such as formwork lumber, shoring or temporary enclosures will be allowed.
  - 4. Equipment: Rental Equipment – charges for certain non-owned, heavy, or specialized equipment up to 100 percent of the documented rental costs; no rental charges will be allowed for hand tools, minor equipment, simple scaffolds, etc.; downtime due to Contractor caused delays, repairs, maintenance, late fees and weather will not be allowed. Owned Equipment – charges for certain owned, heavy or specialized equipment up to 100 percent of the cost listed by the Associated Equipment Dealers Blue Book; no charges will be allowed for hand tools, minor equipment, simple scaffolds, etc.; only the actual time the equipment is necessary to be in use to perform the work will be allowed; downtime due to Contractor caused delays, repairs, maintenance and weather will not be allowed.
  - 5. A total amount of ten (10) percent of the total of all labor, materials and equipment performed by the Contractor's own forces shall be allowed for the Contractor's combined overhead and profit.

6. A total amount of ten (10) percent of the total of all extra work performed by the Contractor's Subcontractor(s) shall be allowed for the Contractor's combined overhead and profit.
7. For work deleted, that would have been completed by the Contractor or the Contractor's Subcontractor(s) an amount equaling the cost of the Work plus an amount equaling five (5) percent of the work shall be credited to the owner.



**PART 1 – GENERAL**

**1.01 LAYOUT AND MEASUREMENTS**

- A. The responsibility for accurate layout and measurement of the Work of each Contractor is their own. In addition, each Contractor shall verify the dimensional accuracy of the Work upon which their own Work relies before they begin their Work. They shall report all inaccuracies to the Construction Manager and shall not proceed until all corrections are made. If a Contractor proceeds with their Work on dimensionally inaccurate Work of another Contractor, they shall be liable for the cost of corrections to their own Work when the error is corrected and shall cooperate in the correction as directed by the Construction Manager.
- B. The Owner, through the Construction Manager, will provide a bench mark and baseline for all Contractors' reference.
- C. If the Construction Manager performs layout work or must arrange for others to perform layout work that is the responsibility of the Contractor, those costs will be charged to the Contractor. The costs will be submitted to the Owner and the Owner will deduct those costs from the Contractor's contract payment.

**END OF SECTION 01055**

**PART 1 – GENERAL**

**1.01 PREVAILING WAGE**

- A. This project shall be subject to the prevailing wage laws of the State of Michigan.
- B. The Owner has requested the prevailing wage rates applicable for this project and project location. The applicable prevailing wage rates provided by the Owner are enclosed on the following pages.
- C. The Owner and Construction Manager expressly rely upon the contractor to satisfy the pay requirements of the prevailing wage laws of the State of Michigan.
- D. Each proposal shall include the Prevailing Wage for Bay County as of the latest published issue by the State of Michigan.

See Addendum 1

**END OF SECTION 01060**

**PART 1 – GENERAL**

**1.01 DESCRIPTION**

A. Work included:

1. Throughout the Contract Documents, reference is made to codes and standards which establish qualities and type of workmanship and materials, and which establish methods for testing and reporting on the pertinent characteristics.
2. Where materials or workmanship are required by these Contract Documents to meet or exceed the specifically named code or standard, it is the Contractor's responsibility to provide materials and workmanship that meet or exceed the specifically names code or standard.
3. It is also the Contractor's responsibility, when so required by the Contract Documents or by written request from the Owner, to deliver to the Owner all required proof that the materials or workmanship, or both, meet or exceed the requirements of the specifically named code or standard. Such proof shall be in the form requested in writing by the Owner, and generally will be required to be copies of a certified report of tests conducted by a testing agency approved for that purpose by the Owner.

B. Related Work Described Elsewhere:

1. Specific naming of codes or standards occurs on the Drawings and other Sections of these specifications.

**1.02 QUALITY ASSURANCE**

A. Familiarity with Pertinent Codes and Standards.

1. In procuring all items used in this Work, it is the Contractor's responsibility to verify the detailed requirements of the specifically named codes and standards and to verify that the items procured for use in this Work meet or exceed the specified requirements.

B. Rejection of Non-Complying Items.

1. The Owner reserves the right to reject items incorporated into the Work which fail to meet the specified minimum requirements.
2. The Owner further reserves the right and without prejudice to other recourse the Owner may take, to accept non-complying items subject to an adjustment in the Contract Amount as approved by the Owner.

C. Applicable standards listed in these Specifications include, but are not necessarily limited to, standards promulgated by the following agencies and organizations:

1. AASHTO – American Association of State Highway and Transportation Officials, 341 National Press Building, Washington, D.C. 20004.

ACI – American Concrete Institute, Box 19150, Redford Station, Detroit, Michigan 48219

AISC – American Institute of Steel Construction, Inc., 1221 Avenue of the Americans, New York, New York, 10020.

ANSI – American National Standards Institute (successor to USASI and ASAO), 1430 Broadway, New York, New York 10018.

ASTM – American Society for Testing Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103.

AWS – American Welding Society, Inc., 2501 N.W. 7<sup>th</sup> Street, Miami, Florida 33125.

AWWA – American Water Works Association, Inc., 6666 West Quincy Avenue, Denver, Colorado 80235.

BOCA – Building Officials Code Administrators International, Inc. 17926 South Halsted Street, Homewood, Illinois 60460.

CRSI – Concrete Reinforcing Steel Institute, 228 North LaSalle Street, Chicago, Illinois 60610.

CS – Commercial Standard of NBS, U.S. Department of Commerce, Government Printing Office, Washington, D.C. 20402.

FGMA – Flat Glass Marketing Association, 3310 Harrison, Topeka, Kansas 66611.

State of Michigan Fire Marshall Bulletin 412.0.

NAAMM – The National Association of Architectural Metal Manufacturers, 1033 South Boulevard, Oak Park, Illinois 60302.

NEC – National Electric Code (see NFPA).

NEMA – National Electrical Manufacturer’s Association, 155 East 44<sup>th</sup> Street, New York, New York 10017.

NFPA – National Fire Protection Association, 470 Atlantic Avenue, Boston, Massachusetts 02210.

SDI – Steel Deck Institute, 135 Addison Avenue, Elmhurst, Illinois 60125.

SSPC – Steel Structures Painting Council, 4400 Fifty Avenue, Pittsburgh, Pennsylvania 15213.

TCA – Tile Council of America, Inc., P.O. Box 326, Princeton, New Jersey 08540.

UL – Underwriters’ Laboratories, Inc., 207 East Ohio Street, Chicago, Illinois 60611.

Fed. Specs, and Fed. Standards: Specifications Sales (3FRI), Building 197, Washington Navy Yard, General Service Administration, Washington, D.C. 20407.

UBC – Uniform Building Code, International Conference of Building Officials, 5360 South Workman Mill Road, Whittier, California 90601.

**END OF SECTION 01085**



**PART 1 – GENERAL**

**1.01 ALTERNATES**

- A. This section identifies each alternate by number and describes the basic changes to be incorporated into the work, only when that alternate is made a part of the Work by specific provisions in the Owner-Contractor Agreement.
- B. Related Requirements in other parts of the Project Manual:
  - 1. Method of quotation of the cost of each alternate, and the basis of the Owner’s acceptance of alternates: Bidding Documents
  - 2. Incorporation of alternates into the Work: Owner-Contractor Agreement.
- C. Related Requirements Specified in Other Sections:
  - 1. Part 1.01: Description of Work
  - 2. Sections of the Specifications as listed under the respective Alternates.
- D. Referenced sections of specifications stipulate pertinent requirements for products and methods to achieve the work stipulated under each Alternate.
- E. Coordinate pertinent related work and modify surrounding work as required to properly integrate the work under each Alternate and to provide the complete construction required by the Contract Documents.
- F. The Owner reserves the right to accept the proposed amount for any alternate at any time during the active construction of the project. If the Owner elects to accept an alternate after the Owner-Contractor contract has been issued, the work shall be added to the contract by change order.

**1.02 DESCRIPTION OF ALTERNATES**

*See Proposal Form*

**END OF SECTION 01100**

**PART 1 – GENERAL**

**1.01 PRE-CONSTRUCTION MEETINGS**

- A. Prior to the initiation of on-site activity, a meeting will be held with all Bid Division Contractors for the purpose of planning, scheduling, and coordinating an orderly initiation of on-site construction activity. Attendance at this meeting is required of all Contractors. The Construction Manager will advise all Contractors of the time and location of this meeting.
- B. A representative of the contractor authorized to enact decisions regarding schedule, manpower commitments and costs must attend the pre-construction meeting.

**1.02 PRE-CONSTRUCTION CONFERENCES**

- A. Each Contractor is required to meet on the site with the Construction Manager prior to beginning their Work. The purpose of this meeting is to review the intent of the Contract Documents as they pertain to the Contractor's Work, and to integrate the initiation of that Work with the Work already in progress on the site.

**1.03 PROGRESS AND PROJECT MEETINGS**

- A. Contractors active on-site shall be required to attend Progress and Project Meetings when called by the Construction Manager. These meetings are for the purpose of planning and assessing construction progress and for discussing problems of mutual concern.
- B. It is mandatory that any contractor actively engaged in work on site shall be required to have a representative of the contractor authorized and empowered to enact decisions regarding schedule, manpower commitments and costs and their superintendent attend these meetings, or the Owner may withhold the Contractor's payment.
- C. All decisions, instructions, and interpretations given by the Owner or their designated representatives at these meetings shall be conclusive and shall be binding on the Contractors.
- D. The proceedings of such meetings will be recorded and posted. Copies will be forwarded to Contractors.

**END OF SECTION 01200**

**PART 1 – GENERAL**

**1.01**

- A. Contractor shall be solely responsible to submit all shop drawings, product data, and samples, or other items required by the Construction Documents hereinafter referred to as submittals to the Construction Manager for processing and forwarding to the Architect for their review.
- B. Submittals shall be delivered to the Construction Manager's office in accordance with the procedures and dates required by the Construction Documents and/or this section, Section 01300, of the project manual (specifications) whichever is more stringent in its requirement. All submittals shall be provided to the Construction Manager within 30 calendar days of receipt of the signed contract or Notice to Proceed unless specified otherwise in the Construction Documents.

**1.02 SUBMITTALS - SHOP DRAWINGS, PRODUCT DATA AND SAMPLES**

- A. The Contractor shall submit to the Construction Manager individual submittals either via Procore or email. All files must include the specification number, item number and name as indicated in the submittal log.
- B. Contractor shall provide electronic copies of submittals. The submittals shall be in PDF format only. COLOR SAMPLES MUST BE SUBMITTED AS PHYSICAL SAMPLES.
- C. In submitting shop drawings, product data and samples, each Contractor represents that they have checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents. All submittals must be stamped or signed by the contractor responsible for submitting, to attest to their review.

**ALL SUBMITTALS MUST BE ACCOMPANIED BY THE WOLGAST CORPORATION SHOP DRAWING / SUBMITTAL FORM (see Page 2 of this section).**

- D. Any submittal not accompanied by the Wolgast Corporation Shop Drawing / Submittal Form will be returned to the contractor for resubmittal.
- E. The Submittal Log provided as part of the Bid Division Descriptions shall be a guideline only and is not to be a representation of every or all submittals required for the completion of the Project. The Contractor shall be required to provide all items and perform all work in complete compliance with the Contract Documents.
- F. The Contractor shall not be relieved of the responsibility for any deviation in the work required by the Contract Documents, or any errors and omissions contained in shop drawings, product data; samples, or other submittal data reviewed and returned to the Contractor by the Architect. Any work performed prior to the Architect's review shall be subject to removal and replacement at the Contractor's expense.
- G. No portion of the Work requiring submission of shop drawings, product data or samples shall commence until the submission has been reviewed by the Architect. If any work is performed prior to the Architect's review of the required submittal(s), the work shall be subject to removal and replacement at the Contractor's expense if that work does not comply with the requirements of the contract documents.

**1.03 START-UP DOCUMENTS (CONTRACT-AWARD SUBMITTALS)**

- A. (Refer to Sections 00100, 00600, 00650, 00670, 00680, 00690.)

**1.04 CONTRACT CLOSEOUT DOCUMENTS (CLOSE-OUT SUBMITTALS)**

- A. (Refer to Sections 01700, 01720, 01730, and 01740.)

**END OF SECTION 01300**



**PART 1 – GENERAL**

**1.01 CONSTRUCTION SCHEDULES**

- A. A Milestone Schedule is provided as part of the bidding documents to indicate dates by which certain critical tasks and/or portions of the project must be completed. The Milestone schedule also indicates the date by which the Project must be 100% complete, receipt of final inspections, occupancy allowed by all governing authorities, and owner move-in.
- B. Based on the Milestone Schedule each Contractor shall submit to the Construction Manager, at or prior to the Pre-Construction Meeting, two (2) copies of the proposed progress schedule for their Work identifying the critical tasks that they must complete to achieve the Milestone Schedule completion dates.
- C. The Construction Manager will utilize the scheduling input from the Contractors for incorporation into the Project Construction Schedule. The Project Construction Schedule will be compiled and distributed to all contractors.
- D. By signing the Owner-Contractor Agreement the Contractor agrees to cooperate with all of the other multiple contractors and to coordinate all construction activities to allow the work of that contractor and all other contractors to meet the completion date(s) established in the Milestone Schedule. The Contractor also agrees that the Project Construction Schedule shall be followed to achieve or improve upon the completion dates for the various tasks in order to attain the final completion of the project by the scheduled completion date.
- E. The Construction Manager will, at times, issue a weekly Look-Ahead Schedule as part of the weekly Contractor Coordination Meetings. The Look-Ahead Schedule will support the Project Construction Schedule and provide specific scheduling information for the Contractor to assure the scheduled completion dates are achieved. The Contractor agrees to comply with the required work identified in the Look-Ahead Schedules.

**END OF SECTION 01350**

**PART 1 – GENERAL**

**1.01 QUALITY CONTROL BY PROJECT ARCHITECT AND CONSTRUCTION MANAGER**

- A. Each Contractor shall comply with the quality control provisions of the Contract Documents.
- B. The quality and completeness of the Work shall be maintained on a day-to-day basis. Inaccurate, faulty, incomplete, and defective Work shall be corrected by the Contractor without continuous prodding by the Construction Manager. Failure to cooperate in this continuous punch list effort may reduce Progress Payments.

**1.02 CONTRACTOR QUALITY CONTROL**

- A. Each Contractor shall be responsible to provide a quality workmanship consistent with the requirements of the Contract Documents. All Work will be of good quality and free from faults and defects. Every care shall be exercised to ensure that the quality specified is the quality provided.
- A. If at any time a Contractor is of the opinion that the quality of their Work is, or will be, jeopardized as a result of rescheduling or coordination of the Project, or for any other reason known to them, they shall stop work immediately and shall inform the Construction Manager of their action and the reasons thereof. The Contractor shall immediately provide a written explanation to the Field Construction Manager and Project Manager for the record, and shall mail a copy to the Architect. Upon investigation by the Construction Manager, a decision will be made on the note of jeopardy, in order to resolve the problem.
- C. Any Contractor who compounds a mistake by installing their product on another Contractor's obviously faulty work will assume responsibility for repair of said work.

**END OF SECTION 01400**

**PART 1 – GENERAL**

**1.01 DESCRIPTION**

- A. The Owner may employ and pay for the services of an independent testing laboratory to perform specified testing as identified in the Bid Division Descriptions.
- B. Contractors shall cooperate with the Laboratory to facilitate the execution of this service.
- C. Employment of the Laboratory shall in no way relieve the Contractor's obligation to maintain the quality of their work.

**1.02 CONTRACTOR'S RESPONSIBILITIES**

- A. Contractors shall cooperate with Laboratory personnel, and shall provide access to Work, and to manufacturers' operations.
- B. Contractors shall provide the Laboratory samples of proposed materials, which require testing.
- C. Contractors shall provide to the Laboratory the preliminary design mix proposed to be used for concrete and other materials, which require control, by the Laboratory.
- D. Contractors shall furnish all test results and coordinate testing with the Construction Manager.
- E. Contractors shall furnish incidental labor and facilities necessary:
  - 1. To provide access to Work to be tested.
  - 2. To obtain and handle samples at the Project site or at the source of the project to be tested.
  - 3. To facilitate inspections and tests.
- F. Contractors shall notify the Laboratory sufficiently in advance of operations to allow for Laboratory assignment of personnel and scheduling of tests.
- G. Contractors shall make arrangements with the Laboratory and pay for additional samples and tests required for the Contractor's convenience.
- H. Contractors shall comply with the Project Team's instructions regarding testing.

**END OF SECTION 01410**

**PART 1 - GENERAL**

**1.01 DESCRIPTION**

- A. The Owner will allow each Contractor to use power and water, where available, for use in construction. All usage will be arranged for by the Construction Manager.

**1.02 REQUIREMENTS OF REGULATORY AGENCIES**

- A. Comply with the National Electric Code.
- B. Comply with federal, state and local codes and regulations and with utility company requirements.

**1.03 MATERIALS, GENERAL**

- A. Cords, connectors, etc. may be new or used, but must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.

**1.04 TEMPORARY ELECTRICITY AND LIGHTING**

- A. The Electrical Contractor shall furnish, install and maintain a complete and adequate temporary electrical service and distribution system for use by the Construction Manager and all Contractors during the construction period.
- B. The Electrical Contractor shall obtain, provide, and pay for all temporary electrical power service installation from the local power company or the existing building if the capacity is available.
- C. The cost of electrical power consumption shall be paid for by the Owner.
- D. Prior to the start of construction, the Electrical Contractor shall provide temporary power at each construction area and at the office of the Construction Manager. Each temporary service will be sufficient in size to provide continuous power for: twelve (12) ground fault protected, 20 amp, duplex receptables; two (2) 220v, 3 phase 40 amp receptable; 20 amp, 120v grounded temporary lighting circuits to provide for a minimum of one (1) lamp holder for each 200 square feet or a minimum of one (1) per room. Each lamp holder will be provided with one (1) 150 watt lamp and guard with no more than twelve (12) lamps per circuit. The Electrical Contractor shall be responsible for replacing all lamps as required.
- E. All wire and cable shall be sized to hold voltage drop at all outlets to a maximum of 5% total from transformer.
- F. Portions of the permanent electrical system may, at the option of the Electrical Contractor, be used for temporary power and lighting. The Electrical Contractor shall replace all burned out lamps, damaged wiring devices, and plates prior to acceptance of building by Owner. When any part of the permanent electrical system is used for temporary power or lighting, the Electrical Contractor will maintain the system until the final acceptance by the Owner and begin all warranties and guarantees upon the date of substantial completion.
- G. Overtime work requiring standby electricians shall be at the expense of the Contractor requiring the same.
- H. Installation of temporary electrical power and lighting shall be as scheduled by the Construction Manager.
- I. All temporary electrical installations shall be in compliance with the latest National Electrical Code (N.E.C.), MIOSHA or OSHA, whichever is more stringent. Compliance with N.E.C Section 210-8(b) shall be the responsibility of the Electrical Contractor. Assured grounding systems as defined in Exception Number 2 of N.E.C. Section 210-8(b) shall not be used in place of ground fault protection 9.



The Electrical Contractor shall completely remove the temporary electrical service and distribution system when directed to do so by the Construction Manager. The contractors responsible for the installation of all ceilings and partitions shall patch their work as necessary after removal of the temporary electrical system at no additional cost to the Construction Manager or Owner.

- J. The Owner shall pay for all electrical energy consumed during the construction period except for energy consumed to provide power or lighting in excess to those listed in this Article.
- K. Any electrical requirements for power or lighting beyond those listed in this Section (including energy charges) shall be the responsibility of the Contractor requiring them.

**1.05 TELEPHONE SERVICE**

- A. A telephone, if located at the Construction Manager's Field Office, may be provided for all Contractors' use in making local or long-distance calls.

**1.06 WATER**

- A. A temporary water distribution center will be provided in a nearby convenient location. The Contractor shall supply all hoses, etc. beyond that point.

**1.07 SANITARY FACILITIES**

- A. The Construction Manager will arrange for temporary sanitary facilities. Contractors shall not use permanent facilities at the site.

**1.08 TEMPORARY HEAT**

- A. When identified and required by the H.V.A.C. Contractor's Bid Division Description, the H.V.A.C. contractor shall install a heating system (permanent or temporary) in readiness for furnishing temporary heat in the new structure.
- B. When the H.V.A.C. Contractor is required to provide a temporary heating system, the H.V.A.C. Contractor shall operate and maintain the temporary heating system. The temporary heating system shall maintain a minimum temperature at all times of 40 degrees during rough-ins and 60 degrees during finishing operations. The H.V.A.C. contractor shall be responsible for the costs of all temporary electrical work relating to the temporary heating system if the permanent system is not used.
- C. In the event that temporary gas fired or open flame heating devices are used, they shall be of the heat exchanger type properly vented to the outdoors, and shall comply with local and state laws, codes, and ordinances.
- D. Portions of the new heating system may, at the option of the H.V.A.C. contractor, be used for temporary heat providing that all parts of the system are cleaned and restored to prime condition prior to acceptance. The H.V.A.C. contractor shall remove any filters used during the temporary heating period and replace with new filters. In addition, the H.V.A.C. subcontractor shall pay the cost of extending warranty and guarantee periods on any permanent equipment used prior to Substantial Completion. The H.V.A.C. contractor shall completely remove the temporary heating system when directed to do so by the Construction Manager.
- E. When identified and required by the H.V.A.C. Contractor's Bid Division Description, all or portions of the new (permanent) H.V.A.C. system shall be used for temporary heat. When the new/permanent system is used for temporary heat, the H.V.A.C. Contractor shall:

1. Maintain the system throughout its use.
2. At the end of the system's use as a temporary system, the H.V.A.C. Contractor shall replace all filters with new filters.
3. Cover openings in permanent return air ductwork with filter media. Maintain and replace filter media as required so air flow is not restricted.
4. Clean and restore all parts of the system to prime condition immediately prior to final acceptance by the Owner.
5. Provide the full warranty and guarantee of the entire system with the warranty/ guarantee period beginning at the time of final acceptance by the Owner.

F. All fuel costs for Temporary Heat shall be paid fo by the Owner.

**1.09 EXECUTION**

A. Each Contractor shall maintain and operate systems to assure continuous service, and avoid disruption of service.

**1.10 REMOVAL**

- A. Each Contractor shall promptly remove their own temporary materials and equipment when their use is no longer required.
- B. Each Contractor shall clean and repair damage they have caused by temporary installations or use of temporary facilities.
- C. Each Contractor shall restore existing facilities they have used for temporary services to their specified or original condition.

**END OF SECTION 01510**

**PART 1 – GENERAL**

**1.01 DESCRIPTION**

- A. Each Contractor shall furnish, install, and maintain construction aids required for the performance of their own Work, and shall move or remove them when they are no longer needed for the Work.
- B. Certain construction aids will be provided for and maintained by the Owner as indicated in later paragraphs in this Section.

**PART 2 – PRODUCTS**

**2.01 MATERIALS, GENERAL**

- A. Materials may be new or used, shall be suitable for their intended purposes, and shall not violate the requirements of applicable codes and standards.

**2.02 CONSTRUCTION AIDS**

- A. Each Contractor shall provide all required construction aids and equipment to facilitate the execution of the Work, including scaffolds, staging, ladders, and other such facilities and equipment.
- B. Contractors shall maintain all facilities and equipment in a first-class condition.

**2.03 TEMPORARY ENCLOSURES**

- A. The Construction Manager will arrange for temporary enclosures except those required by section 01900 – 2.01 to separate work areas from the areas of existing buildings occupied by the Owner to prevent penetration of dust or moisture into occupied areas, to prevent damage to existing equipment, and to protect the Owner’s employees, customers, and operations from construction work.

**PART 3 – EXECUTION**

**3.01 PREPARATION**

- A. Consult with the Owner, Construction Manager, and other Consultants and review the site conditions and other factors, which could affect construction procedures and construction aids, including adjacent properties and public facilities which may be affected by execution of the project.

**3.02 GENERAL**

- A. Comply with applicable requirements of the Specifications.
- B. Relocate construction aids as required by the progress of construction, by storage requirements, and to accommodate requirements of the Owner and other Contractors employed at the site.

**3.03 REMOVAL**

- A. Completely remove temporary materials, equipment, and services:
  - 1. When construction needs can be met, by use of permanent construction.
  - 2. At the completion of the Project.
- B. Clean and repair damage to the permanent facilities caused by installation or by use of temporary facilities.
- C. Restore existing facilities used for temporary purposes to specified or original condition.

**END OF SECTION 01520**

**PART 1 – GENERAL**

**1.01 DESCRIPTION**

- A. Safety is the responsibility of each individual Contractor. Each Contractor shall comply with all local safety ordinances and MIOSHA regulations and requirements while performing the Work.
- B. Each Contractor is required to submit Safety Data Sheets (SDS) to the Construction Manager via Procore or email, to be used for reference only, prior to transporting the material/chemical on site. In addition, it is the responsibility of each Contractor to maintain an accessible SDS file for their employees, subcontractors, sub-subcontractors, and suppliers that are on site.
- C. Each Contractor shall submit evidence of an Employer Safety Program that complies with current MIOSHA regulations and requirements prior to beginning any contract Work.
- D. Each Contractor and their Subcontractor(s), Sub-subcontractor(s), and Suppliers shall take all necessary precautions to ensure the safety of the public and/or workers on the job, and to prevent accidents or injury to any persons, on, about, or adjacent to the premises where the Work is being performed. The Contractor and their Subcontractor(s), Sub-subcontractor(s), and Supplier(s) shall comply with Federal or State OSHA regulations and all other laws, codes, ordinances, and regulations relative to safety and the prevention of accidents.
- E. The Contractor shall designate a responsible representative at the jobsite as Safety Representative who shall be responsible for the promotion of safety and prevention of accidents, and shall enforce all applicable laws, ordinances, codes, rules, regulations, and standards pertaining to safety and prevention of accidents.

**END OF SECTION 01530**

**PART 1 – GENERAL**

**1.01 SECURITY**

- A. Each Contractor shall bear full responsibility for protecting equipment, materials, and tools from damage, loss and vandalism.

**END OF SECTION 01540**

**PART 1 – GENERAL**

**1.01 PROJECT ACCESS**

- A. All employees of the Contractor(s), employees of the subcontractor(s) of the Contractor, any and all other persons having any related activity to the Contractor including suppliers & sales representatives, Inspectors, Architect/Engineer Representatives and all other Visitors must report to the Construction Manager Field Supervisor in the CM Site Office before being permitted into the project.
- B. Each worker must register at the site office prior to entering the work area each day that worker is engaged in the required tasks for the construction of the project. The worker shall register by signing their name and issued ID number, identifying the company they represent. The supervising foreman for each Contractor shall be responsible for registering all employees or tier subcontractor employees of that Contractor each day and providing that registration to the CM Field Supervisor.
- C. If Owner requested, all workers will be issued a photo identification badge and corresponding number by the Construction Manager allowing them access to the project. The ID badge shall be always worn. Any person failing to wear the photo ID badge will be required to leave the project immediately.
- D. Only workers performing required tasks for the construction of the project will be permitted access to the project site. Workers not actively engaged in performing required tasks will not be permitted on the project.
- E. Suppliers, sales representatives, and any other person having legitimate business with the Contractor or a subcontractor of any tier to the Contractor must remain at the Site Office until the on-site supervisor for that Contractor or tier subcontractor meets with that person at the CM Site Office.
- F. Any visitor to the project must register at the CM Site Office, request permission from the CM Site Supervisor for access to the project, have their own personal protection equipment as required by the CM Site Supervisor, and be issued a "Visitor" identification badge allowing access to the project.
- G. The CM Site Supervisor may deny any person access to the project for any reason the supervisor may see fit.
- H. The Contractor agrees to adhere to this Project Access policy regardless of all other agreements.

**1.02 ACCESS ROADS**

- A. Contractors' access to the Project site and arrangements for periodic, temporary access for specific construction shall be made through the Construction Manager with the Owner's approval.

**1.03 DELIVERY**

- A. Contractors receiving deliveries to site shall request a 24-hour notice to delivery from suppliers. Contractors receiving deliveries shall ensure that their personnel are at the site to receive deliveries, and properly store them.
- B. Bidders of Divisions for supply only should give 48 hours' notice to the Field Construction Manager so proper arrangements can be made for unloading.
- C. Any Contractors or Bid Division suppliers not giving notice shall reimburse Contractors at the site or be back charged accordingly for unloading and storage of said materials.
- D. Since site space is limited, delivery of materials shall not be made to the jobsite before progress of the job schedule calls for it, unless approved by the Construction Manager.

**1.04 PARKING**

- A. Contractor parking will be in an area designated by the Construction Manager on site.

**1.05 SITE PLAN**

- A. Refer to the Contractors use of premises (Section 01010) for further information on the use of the site.

**END OF SECTION 01550**

**PART 1 – GENERAL**

**1.01 CONTROLS**

- A. Control of elements such as noise, dust, water, pests, rodents, debris, pollution, and erosion are the responsibility of the Contractor(s). The Architect and Construction Manager will identify the Contractor(s) responsible for these controls in the event such controls have not been implemented. The Contractor(s) agrees to abide by the assignment of responsibility by the Architect and Construction Manager regarding such controls when required. The Contractor(s) shall be responsible for performing the control measures in strict conformance to all governing codes and restrictions.

**END OF SECTION 01560**



**PART 1 – GENERAL**

**1.01 TRAFFIC REGULATIONS**

- A. Contractors shall abide by all governmental and Owner-established traffic regulations.
- B. Contractors shall use the route designated by the Owner/Construction Manager and shall comply with the requirements of Section 01550 – Access and Deliveries.

**END OF SECTION 01570**

**PART 1 – GENERAL**

**1.01 DESCRIPTION**

- A. No signs shall be displayed by any Contractor.

**END OF SECTION 01580**

**PART 1 – GENERAL**

**1.01 DESCRIPTION**

- A. The Project Field Office will be located on-site adjacent to the location of the temporary power.
- B. The Project Field Office will be used by the Owner, Construction Manager, and Architect.
- C. Project meetings and progress meetings will be held in the Project Field Office, or at another location selected by the Construction Manager when deemed necessary.

**1.02 TRAILERS, ETC.**

- A. Trailers to be used as Contractors' site office and storage will be permitted. Approval must be obtained from the Field Construction Manager prior to moving on-site and will be located as directed by the Construction Manager. All trailers must meet federal, state, and local electrical and fire codes.

**END OF SECTION 01590**

**PART 1 – GENERAL**

**1.01 NEW MATERIAL AND EQUIPMENT**

- A. Material and equipment incorporated into the Work shall:
1. Conform to applicable specification and standards,
  2. Comply with sizes, makes, types, and qualities specified or as specifically approved in writing by the Architect or Owner.
- B. Manufactured and Fabricated Products:
1. Design, fabricate and assemble in accord with the best engineering and shop practices.
  2. Manufacture like parts of duplicate units to standard sizes and gauges, to be interchangeable.
  3. Two or more items of the same kind shall be identical, by the same manufacturer.
  4. Products shall be suitable for service conditions.
  5. Equipment capacities, sizes, and dimensions shown or specified shall be adhered to, unless variations are specifically approved in writing by the Project Architect.
- C. Do not use material or equipment for any purpose other than that for which it is designed or is specified.

**1.02 MANUFACTURERS INSTRUCTIONS**

- A. When the Contract Documents require that installation comply with manufacturers' printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, including two (2) copies to the Project Architect.
- B. Maintain one set of complete instructions at the site during installation, until project completion.
- C. Handle, install, connect, clean, condition and adjust products in strict accord with such instructions and in conformity with specified requirements.
1. Should job conditions or specified requirements conflict with manufacturers' instructions, consult with the Project Team for further instructions.
- D. Perform Work in accord with manufacturers' instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by the Contract Documents.

**1.03 TRANSPORTATION AND HANDLING**

- A. Arrange deliveries of products in accordance with the Short-Term Construction Activities Plan. Coordinate to avoid conflict with Work and conditions at the site.
1. Deliver products in undamaged condition, in manufacturers' original containers or packaging, and with identifying labels intact and legible.
  2. Immediately upon delivery, inspect shipments to assure compliance with the requirements of the Contract Documents and approved submittals, and to ensure that products are properly protected and undamaged.
- B. Provide equipment and personnel to handle products by methods which will prevent soiling or damage to products or packaging.

**1.04 STORAGE AND PROTECTION**

- A. Store products in accord with manufacturers' instructions, with seals and labels intact and legible.
  - 1. Store products subject to damage by the elements in weather tight enclosures.
  - 2. Maintain temperature and humidity within the ranges required by Manufacturers' instructions.
- B. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that the products are maintained under specific conditions and are free from damage or deterioration.
- C. Protection after Installation:
  - 1. Provide substantial coverings as necessary to protect installed products from damage, traffic, and subsequent construction operations. Remove the coverings when they are no longer needed.

**1.05 SUBSTITUTIONS AND PRODUCT OPTIONS**

- A. Products List:
  - 1. Before commencing Work, submit to the Construction Manager a complete list of major products proposed to be used, with manufacturers and suppliers' names, product names, model numbers, and where applicable, names of installing subcontractors. (Refer to Section 00680.)
- B. Contractor's Options:
  - 1. For products specified only by reference standard, select any product meeting that standard.
  - 2. For products specified by naming several products or manufacturers, select any one of the products or manufacturers named, which complies with the specifications.
  - 3. For products specified by naming one or more products or manufacturer and "or equal," Contractors must submit requests for substitutions for any product or manufacturer not specifically names.
  - 4. For products specified by naming only one product and manufacturer, there is no option.
- C. Substitutions:
  - 1. The Project Team will consider written requests from Contractors for substitution of products.
  - 2. Submit a separate request for each product, supported with complete data, with drawings and samples, as appropriate, including:
    - a. Comparison of the qualities of the proposed substitution with that specified,
    - b. Changes required in other elements of the Work because of the substitution,
    - c. Effect on the construction schedule,
    - d. Cost data comparing the proposed substitution with the product specified,
    - e. Any required license fees or royalties,
    - f. Availability of maintenance service, and source of replacement materials.
  - 3. Architect will be the judge of the acceptability of all proposed substitutions.
  - 4. Any request for a substitution constitutes a representation that the Contractor:
    - a. Has investigated the proposed product and determined that it is equal to or superior in all respects to that specified,
    - b. Will provide the same warranties or bonds for the substitution as for the product specified,
    - c. Will coordinate the installation of accepted substitutions into the Work, and make such other Changes as may be required to make the Work complete in all respects,
    - d. Waivers all claims for additional costs which may subsequently become apparent.
  - 5. The Construction Manager will review requests for substitutions and the Architect's determination of acceptability with reasonable promptness and will notify Contractors in writing of his decisions regarding requested substitutions.

**END OF SECTION 01600**

**PART 1 – GENERAL**

**1.01 DESCRIPTION**

- A. Each Contractor shall comply with requirements stated in the General Conditions and in the Specifications for procedures in closing out the Work.

**1.02 SUBSTANTIAL COMPLETION AND FINAL INSPECTION PROCEDURE**

- A. When a Contractor's work is 98% complete, and in compliance with Section 10 "Completion" of the Contract, the Contractor will be provided with a Certificate of Substantial Completion, after proper certification by the Construction Manager and Architect. A list of Work in need of correction and a list of incomplete Work will be forwarded to the Contractor. Both the Construction Manager and the Architect will have input to each list.
- B. Each Contractor will be allowed two weeks to complete the items on both lists beginning from the date stipulated on the Certification of Substantial Completion. The Contractor shall begin completion and correction activities within seven (7) days of receipt of the lists and complete all activities within the two-week period specified. Contractors failing to perform in accord with these time parameters will be subject to the provisions of the Additional Conditions, and the Owner will have the right to carry out the corrective Work and/or complete the Work. The cost of correction or completion will be deducted from the Contractor's contract amount.
- C. By the act of submitting the Certificate of Substantial Completion for execution by the Construction Manager and the Architect, the Contractor represents that they have:
1. Reviewed the Contract Documents.
  2. Inspected their Work for compliance with the Contract Documents.
  3. Completed their Work in accord with the Contract Documents and all pertinent submittals.
- D. They further represent that:
1. Equipment and systems have been tested in the presence of the Owner's representative and are operational.
  2. Their Work is completed and ready for final inspection.

**1.03 CONTRACTOR'S CLOSEOUT DOCUMENTS**

- A. Upon Substantial Completion, the Contractor shall submit the following:
1. Evidence of compliance with requirements of governing authorities, including Certificates of Inspection.
  2. Operating and Maintenance Data, Product Data and Instructions to the Owner's personnel.
  3. Warranties and Bonds
  4. Spare Parts and Maintenance Materials
  5. Evidence of Payment and Release of Liens
  6. Certification of Substantial Completion.
  7. As Built Drawings
  8. Contractor Hazardous Materials Compliance Affidavit
  9. Asbestos Free Affidavit
  10. Letter from Contractor's Insurance carrier that a Certificate of Insurance shall be sent to the Construction Manager at renewal time for a two (2) year period after substantial completion.
- B. One (1) hard copy set along with one (1) electronic set of closeout documents shall be submitted to the Construction Manager upon Substantial Completion.

- C. All Close Out documents must be turned in within two weeks of substantial completion. Final payment to the contractor will not be released until all closeout documents have been received and approved and/or punch list items have been completed and signed off.

**1.04 FINAL APPLICATION FOR PAYMENT**

- A. Each Contractor shall submit the final Application for Payment in accord with the procedures and requirements stated in the General Conditions of the Contract for Construction.
- B. Refer to Sections 01720, 01730, and 01740 for further information regarding submittals.

**END OF SECTION 01700**

**PART 1 – GENERAL**

**1.01 DESCRIPTION**

- A. Each Contractor shall execute cleaning during the progress of the Work, and at completion of the Work, as required by the Additional Conditions and the Specifications.

**1.02 DISPOSAL REQUIREMENTS**

- A. Conduct cleaning and disposal operation to comply with codes, ordinances, regulations, and anti-pollution law.

**PART 2 – PRODUCTS AND EQUIPMENT**

**2.01 MATERIALS**

- A. Use only those cleaning materials which will not create hazards to health or property, and which will not damage surfaces.
- B. Use only those cleaning materials and methods recommended by the manufacturer of the surface material to be cleaned.
- C. Use cleaning materials only on surfaces recommended by the cleaning material manufacturer.
- D. Each Contractor shall provide his/her own cleaning equipment.
- E. Each Contractor shall cooperate with the Owner and the Construction Manager regarding clean up.

**PART 3 – EXECUTION**

**3.01 HOUSEKEEPING AND CLEAN-UP**

- A. Each Contractor shall execute daily housekeeping to keep their Work, the site, and adjacent properties free from accumulations of waste materials, rubbish, and windblown debris resulting from construction operations.
- B. Each Contractor is financially responsible for his/her clean-up operations. Clean up must be timely as well as thorough in order to meet safety regulations and permit other Contractors to perform without hindrance from dirt and debris. The Construction Manager will coordinate Project housekeeping and take appropriate steps to maintain clean, safe working conditions. **Contractors failing to meet housekeeping requirements will be charged for services arranged by the Construction Manager.**

**3.02 DUST CONTROL**

- A. Clean interior spaces prior to the start of finish painting and continue cleaning on an as-needed basis until painting is finished.
- B. Schedule operations so that dust and other contaminants resulting from the cleaning process will not fall on wet or newly coated surfaces.
- C. Clean up must be performed after each task is done.
- D. Each Contractor is responsible for developing a plan for dust control and debris removal for each task prior to starting.



**3.03 FINAL CLEANING**

- A. Each Contractor shall employ qualified people for cleaning.
- B. Installing Contractors shall remove grease, mastic adhesives, dust, dirt, stains, finger-paints, labels, and other foreign materials from exposed interior and exterior surfaces, for acceptance by the Construction Manager, prior to leaving the site.
- C. Prior to final completion or Owner occupancy, each Contractor shall conduct an inspection of exposed interior and exterior surfaces and all work areas, to verify that the entire Project is clean.

**END OF SECTION 01710**

**PART 1 – GENERAL**

**1.01 DESCRIPTION**

- A. The Construction Manager will make available a set of Record Documents of the following:
1. Drawings.
  2. Specifications.
  3. Addenda.
  4. Change Orders and other Modifications to the Contracts.
  5. Written Instructions.
  6. Approved Shop Drawings, Product Data and Samples.
  7. Field Test Records.
  8. Construction Photographs.

**1.02 RECORD DRAWINGS**

- A. As a condition of final payment, each Contractor shall mark any and all installation information that differs in location, size, dimension or type from that shown on the Construction Documents on a single set of Construction Documents. Location of items of work such as electrical conduits, junction boxes, fire alarm cable, data cable, etc., that are not specifically shown on the Construction Documents shall be included in the Record Drawings. Locations of all work installed under concrete slabs shall be noted with accurate dimensions and the depth below finish floor indicated.

**1.03 SUBMITTAL**

- A. At Contract Closeout, each Contractor shall deliver one (1) hard set along with (1) electronic set of Record Documents, as indicated in 01700.1.03B to the Construction Manager, for delivery to the Owner.
- B. Each Contractor shall accompany their Record Document submittal with a transmittal letter in duplicate, containing:
1. Date.
  2. Project and Phase Designation.
  3. Contractor's name and address.
  4. Bid Division name and number.
  5. Title and number of each Record Document.
  6. Signature of Contractor of his authorized representative.
- D. The receipt of such Record Documents by the Construction Manager or the Owner shall not be a waiver of any deviations from the Contract Documents.

**END OF SECTION 01720**

**PART 1 – GENERAL**

**1.01 DESCRIPTION**

- A. Each Contractor shall compile product, data, and related information appropriate to the Owner's maintenance and operation of products furnished under their contract.
- B. Each Contractor shall instruct the Owner's personnel in the maintenance of products and in the operation of equipment and systems.

**1.02 MAINTENANCE AND OPERATING MANUALS**

- A. Prior to Substantial Completion, each Contractor shall submit to the Construction Manager one (1) hard set along with one (1) electronic set of all comprehensive maintenance and operating materials, presenting complete directions and recommendations for the proper care and maintenance of all visible surfaces, as well as maintenance and operating instructions for all equipment items which the Contractor has provided or installed.
- B. Operating instructions shall include all necessary printed directions for correct operation, adjustment, servicing, and maintenance of movable parts. Also included shall be suitable parts lists and diagrams showing parts location and assembly.

**1.03 INSTRUCTION OF OWNER'S PERSONNEL**

- A. Prior to final inspection or acceptance, each Contractor shall fully instruct the Owner's designated operating and maintenance personnel in the operation, adjustment, and maintenance of all products, equipment, and systems.
- B. Manufacturer's operating and maintenance manuals shall constitute the basis of instruction. Each Contractor shall review the contents of such manuals with the Owner's personnel in full detail to explain all aspects of operation and maintenance.

**END OF SECTION 01730**

**PART 1 – GENERAL**

**1.01 DESCRIPTION**

- A. The Contractor shall provide a written Guarantee for all labor, material, equipment, and workmanship for a minimum period of two (2) years from the date of Substantial Completion of the project (or longer period if stipulated in the specifications) covering the work of their entire Bid Division(s).
- B. The Contractor shall also provide a written Warranty covering all work of their entire Bid Division(s) for a minimum period of two (2) years from the date of final project completion (or longer period if stipulated in the specifications).
- C. The Contractor shall further provide all suppliers, manufacturer, subcontractor and other written guaranties and warranties covering the work of the entire Bid Division(s) as required by the project specifications.

**1.02 REQUIREMENTS**

- A. The Contractor shall provide one (1) hard copy along with one (1) electronic copy of all written Guaranties and Warranties.
- B. The Contractor shall review all guaranties and warranties to assure of their compliance with all conditions of the contract.
- C. The Contractor shall assemble all guaranties and warranties, fully executed by each respective contractor, supplier, manufacturer and subcontractor and submit to the construction manager within two weeks of the date of Substantial Completion of the project.
- D. If the Owner elects to permit equipment and component parts of equipment into service during the progress of construction and has issues such permission in writing, all such guaranties and warranties must be submitted to the construction manager within two weeks after inspection and acceptance.
- E. For items of work where acceptance is delayed materially beyond the Date of Substantial Completion, the Contractor shall provide revised guaranties and warranties listing the acceptance date as the start of the guaranty or warranty period.

**END OF SECTION 01740**

**PART 1 – GENERAL**

**1.01 DESCRIPTION**

- A. It shall be the Contractor's responsibility to ensure that the Owner is notified of any hazardous materials brought to the site.
- B. In compliance with Michigan State Law there is to be no smoking anywhere on the project site or owner's property or use of any tobacco product at any time.
- C. The Contractor agrees to disallow any known carcinogens to be brought onto the jobsite at any time.
- D. The Contractor will not permit any employee to be in possession of any firearm or ammunition when on school property either on the worker's person or in the worker's vehicle. It is illegal to possess firearms or ammunition on your person or in a vehicle on school property at any time.

**1.02 REQUIREMENTS**

- A. The Contractor shall provide:
  - 1. One (1) hard copy of each Safety Data Sheet (SDS) for each of the hazardous materials used on the site.
  - 2. Certification that the Contractor (and their subcontractors) has instructed the persons using the hazardous materials in their proper use.
  - 3. For removal of any unused hazardous materials in their proper use.
  - 4. Certification that no asbestos containing materials are being used or brought onto the site by signing and notarizing the asbestos free certificate, which follows as page 3 of this Section.
- B. The Contractor shall utilize employee(s) that have been trained and certified for Hazardous Material Awareness specifically for asbestos and lead awareness.
- C. The Contractor has the responsibility to make themselves, their employees, and their subcontractors aware of any hazardous materials in the area of their specified work.
- D. The above requirements must be fulfilled, in writing, at or prior to a pre-construction meeting by filling out the Contractor Hazardous Materials Compliance Form, which is page 2 of this section.
- E. Standard safety practices and regulations as supplied by all governmental agencies will be in effect.
- F. A list of districts SDS sheets is available on request.
- G. The Contractor shall submit a completed Contractor Hazardous Materials Compliance Affidavit and Asbestos-Free Affidavit certifying that no hazardous material has been incorporated into the Project as part of the documentation for Contract Close-Out.

**2.01 COMPLIANCE**

- A. Compliance with EPA AHERA for Asbestos.
  - 1. The Contractor must adhere to all EPA AHERA and Michigan State Asbestos Regulations for asbestos and other hazardous materials.

B. Compliance with Lead-Containing Materials.

1. All Contractors, Subcontractors and Sub-subcontractors shall adhere to the Environmental Protection Agency (EPA) lead-based paint regulation titled the "Renovation, Repair and Painting (RRP) Rule". Included under this law are "Child Occupied Facilities" (COFs). COFs encompass locations of a pre-1978 constructed buildings where children under age of six (6) regularly visit, such as kindergarten rooms, 1st grade classrooms, applicable restrooms, preschools and day care centers. Therefore portions of each pre-1978 constructed school building falls under the RRP Rule.
2. Any contractor working on this project who disturbs painted surfaces in COF spaces shall ensure that they adhere to all aspects of the RRP Rule. This includes but is not limited to meeting the requirements for being a Certified Firm, having a Certified Lead Renovator involved and following applicable lead safe work practices.
3. Furthermore, all Contractors shall be responsible to comply with all applicable Federal and Michigan State lead regulations including, but not limited to, 29 CFR Part 1926.62 of the OSHA Lead Construction Standard, (Part 603 of the Michigan State Standards). All costs associated with regulatory compliance shall be borne by the Contractor.

**CONTRACTOR HAZARDOUS MATERIALS COMPLIANCE AFFIDAVIT**

PROJECT NAME: \_\_\_\_\_

TITLE: \_\_\_\_\_

Contractor: \_\_\_\_\_

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

Contractor's Representative: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Job Location: \_\_\_\_\_

This document certifies that the Contractor and any subsequent Contractors have complied with the terms set forth in the requirements for **Bay City Public Schools** as they pertain to hazardous materials.

The SDS's are attached for all hazardous materials which will be brought to **Bay City Public Schools**.

There are \_\_\_\_\_ SDS's attached.

The Contractor's employees (including subcontractors) have received appropriate instructions pertaining to the use and handling of hazardous materials.

The Contractor has been informed of hazardous materials in the area of the specified work.

\_\_\_\_\_  
Signature of Contractor's Representative

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

Received by: \_\_\_\_\_

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

**ASBESTOS FREE AFFIDAVIT**

Contractor: \_\_\_\_\_

Company Name: \_\_\_\_\_

Street: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Project: \_\_\_\_\_

Bid Division: \_\_\_\_\_

Name of Building(s) in which work was performed:

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

Certificate Statement:

I \_\_\_\_\_, representing and having authority for

\_\_\_\_\_, hereby certify that any and all products/materials

that will be or have been installed/introduced in the above mentioned buildings, are asbestos free or less

that one percent (1%) asbestos by weight.

Name (printed): \_\_\_\_\_ Position: \_\_\_\_\_

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

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

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

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

**END OF SECTION 01800**



**PART 1 – GENERAL**

**1.01 NOTICE**

- A. This notice is to formally advise you, per AHERA Requirements, that all buildings may have asbestos containing materials present. All areas testing positive for asbestos are documented in booklets located in the **Bay City Public Schools**.

**1.02 DESCRIPTION**

- A. All thermal insulation such as pipe wrap, especially joints, should be assumed to contain asbestos. Contractors are cautioned not to attempt removal of these materials without first notifying the Owner.

# AHERA Notification and Contractor Compliance Affidavit

**Project Name:** Bay City Public Schools – 2020 Bond Series 3 - Phase 4 Western HS Bathrooms  
**Project #:** A21902-1D  
**Owner:** Bay City Public Schools  
**Address:** 601 Blend Street, Bay City, MI 48706

**This notice is to formally advise you, per AHERA Requirements, that all buildings may have existing asbestos containing materials. All areas testing positive for asbestos have been documented in the owner’s asbestos inspection report available for inspection at the owner’s main office. All areas currently testing positive for asbestos are documented in the attached Three-Year Re-Inspection Asbestos plan report that has been provided by: Bay City Public Schools.**

**All thermal insulation such as pipe wrap, especially joints, should be assumed to contain asbestos. Contractors are cautioned not to attempt removal of these materials without first notifying the Owner.**

**I / We \_\_\_\_\_ doing business as \_\_\_\_\_ acknowledge receipt of the Three Year Re-Inspection Asbestos plan for the above mentioned project(s) as provided by Bay City Public Schools and certify that all employees of this contractor shall have been trained in the MIOSHA Two-Hour Asbestos Awareness program. It is this Contractor’s responsibility to inform any subcontractors or suppliers of this information and assume all responsibility for such notification.**

\_\_\_\_\_  
Company

State of \_\_\_\_\_ County of \_\_\_\_\_

\_\_\_\_\_  
Name

Subscribed and sworn to before me this \_\_\_\_\_

day of \_\_\_\_\_

\_\_\_\_\_  
Title

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

\_\_\_\_\_  
Address

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

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

\_\_\_\_\_  
Seal

**END OF SECTION 01805**

**NOVA**  
**ENVIRONMENTAL, INC.**  
5300 PLYMOUTH ROAD  
ANN ARBOR, MICHIGAN 48105  
734-930-0995

December 1, 2021

Mr. Patrick Tobin  
Director of Athletics, Facilities and Maintenance  
Bay City Public Schools  
1624 Columbus Avenue  
Bay City, MI 48708

Dear Mr. Tobin:

The following is the 2021 Three-Year Reinspections for Western High School. This Reinspection was conducted in accordance with 40 CFR, Part 763.85(b), of the Asbestos Hazard Emergency Response Act (AHERA).

If you have any questions regarding the Reinspection Report or if I can be of further assistance, please contact me at (734) 930-0995.

Sincerely,

NOVA ENVIRONMENTAL, INC.



Lisa Whitton  
Vice President

LW/ab

Enclosures

Nova Environmental, Inc.  
Reinspection Form

**Client:** Bay City Public Schools

**Date of Reinspection:** October 13, 2021

**Name of Building:** Western High School

**Address:** 500 W. Midland Rd., Auburn, MI 48611

This Building has known or assumed:  Friable  Non-Friable

Homogeneous Area(s) of known or assumed ACBM identified in the Management Plan and/or last Reinspection/Surveillance

2021 Reinspection findings for ACBM – Western High School – October 13, 2021					Management Planner Recommendations			
HA #	HA Description	F/NF	Previous Assessment	New Assessment	Locations	Assessment Justification	Response	Schedule
	Steam Table Wire Insulation	NF	*Non-Friable	N/A	Kitchen	Material was removed	N/A	N/A
	Ceiling Tiles	F	ACBM with potential for Damage	N/A	Intermittent Locations	Material was removed	N/A	N/A
	Fire Brick	NF	*Non-Friable	*Non-Friable	Incinerator & Forge	Material is intact.	**O & M	Ongoing
	Door Gasket	F	ACBM with potential for Damage	ACBM with potential for Damage	Forge	Material is intact.	**O & M	Ongoing
	Fire Doors	NF	*Non-Friable	*Non-Friable	Throughout	Material is intact.	**O & M	Ongoing
	Joint Compound	NF	*Non-Friable	*Non-Friable	Cooling Tower	Material is intact.	**O & M	Ongoing

\*No assessment necessary for Non-friable materials

\*\*Maintain under an Operation and Maintenance Program

**NOVA ENVIRONMENTAL, INC.**

Accredited Inspector/Management Planner Information  
Inspection and Assessment

This form provides the information for Inspectors/Management Planners, which is required to perform Reinspections, in accordance with 40 CFR, Part 763.85(b),(vii),(A) and (C).

1. **Date(s) of Reinspection:** October 13, 2021
2. **Name of Accredited Inspector(s) performing Reinspection and Assessments:**  
Felicia Fields
3. **Signature(s) of Accredited Inspector(s) performing Reinspection and Assessments:**  

4. **Name of Accredited Management Planner(s) who performed the Reinspection and Assessments:**  
Lisa Whitton
5. **Signature of Accredited Management Planner(s) who performed the Reinspection and Assessments:**  
  
-
6. **State of Accreditation:** Michigan/Michigan
7. **Accreditation Number:** A53464/A30431
8. **Training Institute:** Nova Environmental, Inc.
9. **Certificate Expiration:** August 27, 2022/ August 27, 2022
10. **Building Name and Address:**  
Western High School  
500 W. Midland Rd.  
Auburn, MI 48611

**Note:** Copy(s) of current Michigan Department of Licensing & Regulatory Affairs Accreditation Cards attached for each Accredited Inspector performing Reinspection and Assessments.

**State of Michigan**  
 Department of Labor and Economic Opportunity  
 Michigan Occupational Safety & Health Administration - Asbestos Program

**Asbestos Inspector**

**Lisa L. Whitton**  
 c/o Nova Environmental, Inc.  
 5300 Plymouth Road  
 Ann Arbor, MI 48105

**Accreditation Number**      **Expiration Date**  
 A30431                              10/11/2022

DOB: 11/18/1981

This individual has satisfactorily met or exceeded the requirements of Michigan Public Act 440 of 1988, as amended, to be accredited as an Asbestos Inspector.

Accreditation card is not valid if altered.      154434

**State of Michigan**  
 Department of Labor and Economic Opportunity  
 Michigan Occupational Safety & Health Administration - Asbestos Program

**Asbestos Management Planner**

**Lisa L. Whitton**  
 c/o Nova Environmental, Inc.  
 5300 Plymouth Road  
 Ann Arbor, MI 48105

**Accreditation Number**      **Expiration Date**  
 A30431                              10/11/2022

DOB: 11/18/1981

This individual has satisfactorily met or exceeded the requirements of Section 206 of the Toxic Substances Control Act to be accredited in the above discipline.

Accreditation card is not valid if altered.      154435

**State of Michigan**  
 Department of Labor and Economic Opportunity  
 Michigan Occupational Safety & Health Administration - Asbestos Program

**Asbestos Project Designer**

**Lisa L. Whitton**  
 c/o Nova Environmental, Inc.  
 5300 Plymouth Road  
 Ann Arbor, MI 48105

**Accreditation Number**      **Expiration Date**  
 A30431                              10/11/2022

DOB: 11/18/1981

This individual has satisfactorily met or exceeded the requirements of Section 206 of the Toxic Substances Control Act to be accredited in the above discipline.

Accreditation card is not valid if altered.      154433

*State of Michigan*  
Department of Labor and Economic Opportunity  
Michigan Occupational Safety & Health Administration - Asbestos Program

**Asbestos Inspector**

**Felicia F. Fields**  
c/o Nova Environmental, Inc.  
5300 Plymouth Road  
Ann Arbor, MI 48105

**Accreditation Number**  
A53464

**Expiration Date**  
10/11/2022

DOB: 03/20/1993

This individual has satisfactorily met or exceeded the requirements of Michigan Public Act 440 of 1988, as amended, to be accredited as an Asbestos Inspector.

As accreditation card is not valid if altered. 154117

**NOVA ENVIRONMENTAL, INC.**

Designated Person Information Sheet

1. **Name of Designated Person:**

Mr. Patrick Tobin

2. **Professional Title of Designated Person:**

Director of Athletics, Facilities, and Maintenance

3. **Address of Designated Person:**

1624 Columbus Avenue  
Bay City, MI 48708

4. **Telephone Number of Designated Person:**

(989) 686-8371

The intent of this statement is to certify that the Three-Year Reinspection with the AHERA regulation, has been conducted by Accredited persons. This statement also certifies that I have reviewed the new Accredited Management Planner's Response Action Recommendations and Response Action Schedules, and approve them for implementation.

5. **Signature of Designated Person:**

---

6. **Date of Signature:**

---



**PART 1 – GENERAL**

**1.01 CODES**

- A. All work shall comply with the applicable requirements of the local building code and accident and fire prevention regulations.

**1.02 SCOPE**

- A. The Work covered by this section of Specifications includes, but is not limited to, the following:
1. Demolish and remove existing materials as shown on the plan and noted in the Description of Work.
  2. Cover holes and other hazardous openings with approved materials and barriers.
  3. Remove all demolition materials and debris from the construction site and dispose of in a legal manner.
  4. Protect adequately the construction site, adjoining property, and utility services as work proceeds through all stages.

**1.03 QUALITY ASSURANCE**

- A. The contractor's staff responsible for demolition shall be experienced in this type of work. Equipment is to be of suitable type, in good working condition, and operated by skilled mechanics.

**PART 2 – PRODUCTS**

**2.01 TEMPORARY ENCLOSURES**

- A. Provide temporary enclosures to prevent dust from entering other parts of the facility during demolition. Furnish, install, and remove when directed, temporary weathertight enclosures in all exterior openings created during demolition by the contractor.

**PART 3 – EXECUTION**

**3.01 GENERAL INSTRUCTIONS**

- A. All work shall be done in a safe and cautious manner in order to avoid accidents and property damage.
- B. Protect the work scheduled to remain, and if damaged, repair to match existing work.
- C. All salvaged material unless otherwise noted on plans or in the Description of Work shall become the property of the Contractor and shall be evaluated in the Contractor's bid price. Promptly remove salvaged material from the construction site as the work proceeds.
- D. Carefully dismantle and store on site all material scheduled to remain the Property of the Owner. Protect until removed by the Owner or until end of Contract.
- E. Protect from damage and clean materials scheduled to be reused.
- F. Protect parts of the existing Work scheduled to remain. Cut away carefully the parts to be demolished to reduce the number of necessary repairs.
- G. Support existing structure as needed during cutting of new openings or replacement of structural members.
- H. Prevent accumulation of debris and overloading of any part of the structure.
- I. Prevent access of unauthorized persons to partly demolished areas.
- J. Remove all demolition materials, debris, and rubbish from the site as soon as practicable. Do not permit any accumulation on the site. Transport all demolition materials without spillage on the streets.

**END OF SECTION 001900**

**Division            Section Title**

**SERIES 0 - BIDDING REQUIREMENTS AND CONTRACT FORMS**

000115            LIST OF DRAWING SHEETS  
005000            AVAILABILITY OF ELECTRONIC FILES  
                      CAD DOCUMENT DISCLAIMER FORM

**DIVISION 1 - GENERAL REQUIREMENTS**

012300            ALTERNATES  
013300            SUBMITTAL PROCEDURES

**DIVISION 2 - EXISTING CONDITIONS**

024119            SELECTIVE STRUCTURE DEMOLITION

**DIVISION 3 - CONCRETE**

N/A

**DIVISION 4 - MASONRY**

042000            UNIT MASONRY

**DIVISION 5 - METALS**

055000            METAL FABRICATIONS

**DIVISION 6 - WOOD AND PLASTICS**

061053            MISCELLANEOUS ROUGH CARPENTRY

**DIVISION 7 - THERMAL AND MOISTURE PROTECTION**

079200            JOINT SEALANTS

**DIVISION 8 - DOORS AND WINDOWS**

083113            ACCESS DOORS AND FRAMES

**DIVISION 9 - FINISHES**

095113            ACOUSTICAL PANEL CEILINGS  
099123            INTERIOR PAINTING

**DIVISION 10 - SPECIALTIES**

102113.19        SOLID POLYMER TOILET COMPARTMENTS  
102800            TOILET AND BATH ACCESSORIES

**DIVISION 11 - EQUIPMENT**

N/A

**DIVISION 12 - FURNISHINGS**

N/A

**DIVISION 22 - PLUMBING**

22 05 00        PLUMBING REQUIREMENTS  
22 05 10        PLUMBING SYSTEMS TESTING, CLEANING, WATER TREATMENT AND  
                      STARTUP  
22 05 53        PLUMBING SYSTEM IDENTIFICATION  
22 06 00        PLUMBING SPECIALTIES  
22 07 00        PLUMBING PIPE INSULATION  
22 10 00        PLUMBING PIPING

**DIVISION 23 - HEATING, VENTILATING AND AIR CONDITIONING**

23 05 00	HVAC REQUIREMENTS
23 05 53	HVAC IDENTIFICATION
23 30 00	AIR DISTRIBUTION

**DIVISION 26 - ELECTRICAL**

26 00 00	BASIC ELECTRICAL REQUIREMENTS
26 05 05	SELECTIVE DEMOLITION FOR ELECTRICAL
26 05 19	LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES
26 05 26	GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS
26 05 29	HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS
26 05 33.13	CONDUIT FOR ELECTRICAL SYSTEMS
26 05 33.16	BOXES FOR ELECTRICAL SYSTEMS
26 05 83	WIRING CONNECTIONS
26 09 23	LIGHTING CONTROL DEVICES
26 27 26	WIRING DEVICES
26 51 00	INTERIOR LIGHTING

**DIVISION 28 - ELECTRONIC SAFETY & SECURITY**

28 46 13	FIRE ALARM SYSTEM
----------	-------------------

**DIVISION 32 - EXTERIOR IMPROVEMENTS**

N/A

END OF TABLE OF CONTENTS

DOCUMENT 000115 - LIST OF DRAWING SHEETS

1.1 DRAWING INDEX:

TS TITLE SHEET

ARCHITECTURAL

A0.01 SYMBOLS, LOCATION MAP ABBREVIATIONS, MOUNTING HEIGHTS

A2.01 LOWER LEVEL MASTER PLAN

A2.02 FIRST FLOOR MASTER PLAN

A2.03 SECOND FLOOR MASTER PLAN

A2.11 ENLARGED DEMOLITION PLANS

A2.12 ENLARGED DEMOLITION PLANS

A2.21 ENLARGED PLANS

A2.22 ENLARGED PLANS

A9.01 LOWER LEVEL REFLECTED CEILING MASTER PLAN

A9.02 FIRST FLOOR REFLECTED CEILING MASTER PLAN

A9.03 SECOND FLOOR REFLECTED CEILING MASTER PLAN

A9.31 ENLARGED REFLECTED CEILING PLANS

A9.32 ENLARGED REFLECTED CEILING PLANS

MECHANICAL

M1.01 ENLARGED PLANS - MECHANICAL DEMOLITION

M1.02 ENLARGED PLANS - MECHANICAL DEMOLITION

M2.01 ENLARGED PLANS - MECHANICAL REVISED

M2.02 ENLARGED PLANS - MECHANICAL REVISED

M3.01 ENLARGED PLANS - MECHANICAL SCHEDULES AND DETAILS

ELECTRICAL

E1.01 ENLARGED PLANS - ELECTRICAL DEMOLITION

E1.02 ENLARGED PLANS - ELECTRICAL DEMOLITION

BAY CITY PUBLIC SCHOOLS- 2020 BOND PROJECTS SERIES 3  
TOILET ROOM RENOVATIONS FOR BAY CITY WESTERN MS / HS  
BAY CITY, MICHIGAN

PROJECT NO. 2019113.33

- E2.01 OVERALL ELECTRICAL PLANS
- E2.02 ENLARGED PLANS - ELECTRICAL REVISED
- E2.03 ENLARGED PLANS - ELECTRICAL REVISED
- E3.01 NOTES AND SCHEDULES
- E4.01 ENLARGED PLANS - EMERGENCY PT BY PT'S
- E4.02 ENLARGED PLANS - EMERGENCY PT BY PT'S

END OF DOCUMENT 000115

SECTION 005000 - AVAILABILITY OF ELECTRONIC FILES

PART 1 - GENERAL

1.1 POLICY

- A. As a service to bidders, contractors, subcontractors, vendors, material suppliers and others needing electronic copies of drawing files, the Architect will provide electronic files via file transfer through the Project Website in accordance with the following policy.
1. In accepting and utilizing any drawings or data generated and furnished by WTA Architects, the Receiver agrees that all such electronic files are instruments of service of WTA Architects and its consultants, who shall be deemed the author, and shall retain all common law, statutory law and other rights, without limitation, including copyrights.
  2. The Receiver agrees not to reuse these electronic files, in whole or in part, for any purpose other than for the Project. The Receiver agrees not to transfer these electronic files to others without the prior written consent of WTA Architects or its consultants. The Receiver further agrees that WTA Architects and its consultants shall have no responsibility or liability to Receiver or others for any changes made it shall be the Receiver's responsibility to be aware of changes made by WTA Architects, its consultants or the Owner.
  3. It is further understood and agreed that the undersigned Receiver will hold WTA Architects and its consultants harmless, indemnify and defend WTA Architects and its consultants from all claims, liabilities, losses, etc., including attorney's fees arising out of the use or misuse of the transferred items.
  4. It is understood and agreed that the items transmitted are prepared from electronic files current at the time of preparation. **All files are AutoCAD 2019.** The Receiver will specify on request form if an older version is required.
  5. This information does not waive the need to verify and review current field conditions and the status of Addenda and/or Bulletin documentation.
  6. As a record of information to be transmitted, WTA Architects will prepare a duplicate back-up for its files, which may be electronic or hard-copy.
  7. Compensation for providing this material will be as follows:
    - a. Base Fee of \$250 for 1 to 3 drawings.
    - b. Base Fee of \$500 for 4 to 10 drawings.
    - c. For each additional drawing after 10 the fee is \$40.00 per drawing (i.e. 11 drawings = \$540)
  8. Payment must be provided along with a signed copy of the Release Letter before files will be released.

1.2 REQUEST PROCEDURE

- B. To receive files the attached Release Letter must be completed in full and submitted to the Project Manager at WTA Architects.
1. A signed copy of the Release Letter must be submitted; faxed or emailed copies will be accepted. However, files will not be exchanged until payment has been received.
  2. Upon remittance of the signed Release Letter and Fee, allow five working days for processing.

**Firm Requesting Files:**

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

Name: \_\_\_\_\_  
Company: \_\_\_\_\_  
Address: \_\_\_\_\_  
City, State, Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

**Re: Letter of Authorization for Electronic File Transfers**

Project Name: \_\_\_\_\_

WTA Project No.: \_\_\_\_\_

Dear Sir:

Per your request, WTA Architects will transmit the requested electronic files via file transfer through the project website upon receipt of this letter with conditions of agreement as stated.

1. In accepting and utilizing any drawings or data generated and furnished by WTA Architects, the Receiver agrees that all such electronic files are instruments of service of WTA Architects and its consultants, who shall be deemed the author, and shall retain all common law, statutory law and other rights, without limitation, including copyrights.
2. The Receiver agrees not to reuse these electronic files, in whole or in part, for any purpose other than for the Project. The Receiver agrees not to transfer these electronic files to others without the prior written consent of WTA Architects or its consultants. The Receiver further agrees that WTA Architects and its consultants shall have no responsibility or liability to the Receiver or others for any changes made it shall be the Contractors responsibility to be aware of changes made by WTA Architects, its consultants or the Owner.
3. It is further understood and agreed that the undersigned will hold WTA Architects and its consultants harmless, indemnify and defend WTA Architects and its consultants from all claims, liabilities, losses, etc., including attorney's fees arising out of the use or misuse of the transferred items.
4. It is understood and agreed that the items transmitted are prepared from electronic files current at the time of preparation. **All files are AutoCAD 2019**, unless requested otherwise.
5. This information does not waive the need to verify and review current field conditions and the status of Addenda and/or Bulletin documentation.
6. As a record of information to be transmitted, we will prepare a duplicate back-up for our files, which may be electronic or hard-copy.
7. Compensation for providing this material will be as follows: Base Fee of \$250 for 1 to 3 drawings and a Base Fee of \$500 for 4 to 10 drawings; for each additional drawing after 10 the fee is \$40.00 per drawing (i.e. 11 drawings = \$540). Payment must be provided along with a signed copy of this form before files will be released. Please remit to WTA Architects and allow five working days for processing.

Fee: \$ \_\_\_\_\_ Drawings: \_\_\_\_\_

Signed: \_\_\_\_\_ Printed Name/Title: \_\_\_\_\_

*To be Completed by WTA Architects, Inc.*

Released (Signed By): _____	WTA Architects, Inc.
Printed Name/Title: _____	Date: _____

END OF SECTION 005000

SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

- A. Definition: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
  - a. The cost for each alternate is the net addition to the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

- A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
  - a. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Notification: Immediately following award of the Contract/Purchase Order, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.
- C. Execute accepted alternates under the same conditions as other work of the Contract.
- D. Schedule: A "Schedule of Alternates" is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PRODUCTS - (Not Used)

PART 2 - EXECUTION



2.1 SCHEDULE OF ALTERNATES

A. Alternate No. 1: **Acoustical Lay-in Ceilings:**

Base Bid: Remove existing acoustical lay-in ceilings where shown and replace with new.

Alternate: Salvage existing acoustical ceiling tiles for re-installation. Paint ceiling grid in place, reinstall ceiling tiles. Broken or stained tiles to be replaced from Owner's stock.

B. Alternate No. 2: **Toilet Compartments:**

Base Bid: Provide products manufactured by Scranton Products as specified.

Alternate: Provide products manufactured by one of listed Substitute Manufacturers in panel color and texture to match base bid specified panel.

END OF SECTION 012300

## SECTION 01330 - SUBMITTAL PROCEDURES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

#### 1.2 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
- B. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
  - 1. Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
- C. Distribution: Furnish copies of final submittals to subcontractors and others as necessary.
- D. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

### PART 2 - PRODUCTS

#### 2.1 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements:
  - 1. Post electronic submittals as PDF electronic files directly to Architect's FTP site specifically established for Project, or as PDF files sent by e-mail.
  - 2. Paper action Submittals: Submit three paper copies of each submittal unless otherwise indicated. Architect will return two copies.
  - 3. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
  - 1. For equipment, include the following in addition to the above, as applicable:
    - a. Wiring diagrams showing factory-installed wiring.
    - b. Printed performance curves.
    - c. Operational range diagrams.
    - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
  - 1. Preparation: Fully illustrate requirements in the Contract Documents.

- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
- E. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 01400 "Quality Requirements."
- F. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 01770 "Closeout Procedures."
- G. Maintenance Data: Comply with requirements specified in Section 017823 "Operation and Maintenance Data."

## 2.2 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
  - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit three paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
  - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

## PART 3 - EXECUTION

### 3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

### 3.2 ARCHITECT'S ACTION

- A. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- B. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

---

END OF SECTION 01330

SECTION 024119 - SELECTIVE STRUCTURE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
  - 1. Demolition and removal of selected portions of building or structure.
  - 2. Demolition and removal of selected site elements.
  - 3. Salvage of existing items to be reused or recycled.
  - 4. Identification of Utilities

1.2 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner.
- C. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.
- D. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.3 PREINSTALLATION MEETINGS

- A. Predemolition Conference: Conduct conference at Project site.

1.4 CLOSEOUT SUBMITTALS

- A. Landfill Records: Where hazardous material is being disposed of, Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.5 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Provide 1-hour rated separation between work area and occupied areas of the building, or maintain existing barriers.
- C. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- D. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- E. Hazardous Materials: A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.
  - 1. Hazardous material remediation will be performed under a separate contract. Contractor to coordinate with abatement contractor..
  - 2. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner.

- F. Storage or sale of removed items or materials on-site is not permitted.
- G. Utility Service:
  - 1. Notify affected utility companies before starting work and comply with their requirements.
  - 2. Mark location and termination of utilities.
  - 3. Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
  - 4. Maintain fire-protection facilities in service during selective demolition operations.

## 1.6 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.

### 3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
  - 1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
  - 2. Arrange to shut off indicated utilities with utility companies.
  - 3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.

4. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated to be removed.
  - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
  - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material.
  - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
  - d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
  - e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
  - f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
  - g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material.
- C. Refrigerant: Remove refrigerant from mechanical equipment to be selectively demolished according to 40 CFR 82 and regulations of authorities having jurisdiction.

### 3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
  1. Comply with requirements for access and protection specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
- C. Temporary Partitions: Erect and maintain temporary partitions to prevent spread of dust, odors, and noise to permit continued Owner occupancy. Provide fire-rated partitions where required by the Authority Having Jurisdiction.
- D. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
- E. Temporary signage: Provide appropriate temporary signage including signage for exit or building egress.

### 3.4 SELECTIVE DEMOLITION, GENERAL

- A. Conduct demolition to minimize interference with adjacent and occupied building areas.
- B. Cease operations immediately if structure appears to be in danger and notify Architect/Engineer. Do not resume operations until directed.
- C. Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
  1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding,

- not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
  3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
  4. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
  5. All materials and services slated for removal are to be fully removed, cleaned up and firestopped as required in sections 017700 Closeout Procedures, Final Cleaning, and 078416 Firestopping.
- D. Removed and Salvaged Items:
1. Clean salvaged items.
  2. Pack or crate items after cleaning. Identify contents of containers.
  3. Store items in a secure area until delivery to Owner.
- E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition **and cleaned** and reinstalled in their original locations after selective demolition operations are complete.
1. Protect the following materials and equipment remaining:
    - a. Structural systems and supports.
    - b. Mechanical systems intended to remain.
    - c. Electrical and communications equipment.
    - d. Remaining structural, material, or equipment systems revealed by the demolition process.
- F. Promptly repair damages caused to adjacent facilities not scheduled for demolition, removal, or reconstruction at no additional cost to Owner. Lawn areas where vehicle traffic has occurred shall be finish graded including topsoil and seeding.

### 3.5 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
1. Do not allow demolished materials to accumulate on-site.
  2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
  3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- B. Burning: Do not burn demolished materials.
- C. Burying: Do not bury demolished materials onsite.
- D. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

### 3.6 CLEANING

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

END OF SECTION 024119

SECTION 042000 - UNIT MASONRY

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes masonry for infill and repair.

1.2 DEFINITIONS

- A. CMU(s): Concrete masonry unit(s).
- B. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.3 SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For reinforcing steel. Detail bending, lap lengths, and placement of unit masonry reinforcing bars. Comply with ACI 315.
- C. Samples for Verification: For each type and color of exposed masonry unit.
- D. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.
  - 1. Include test reports for mortar mixes required to comply with property specification. Test according to ASTM C 109/C 109M for compressive strength, ASTM C 1506 for water retention, and ASTM C 91/C 91M for air content.
  - 2. Include test reports, according to ASTM C 1019, for grout mixes required to comply with compressive strength requirement.

1.4 QUALITY ASSURANCE

- A. Field Verification: Unit masonry assemblies are to be installed in or adjacent to existing construction. Contractor to field verify existing conditions, coursing, and adjacent construction. Notify Architect of conditions that would affect the work.
- B. Sample Panels: Build sample panels to verify selections made under Sample submittals and to demonstrate aesthetic effects.

1.5 FIELD CONDITIONS

- A. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.
- B. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

PART 2 - PRODUCTS

2.1 UNIT MASONRY, GENERAL

- A. Masonry Standard: Comply with ACI 530.1 specifications.



- B. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated. Do not use units where such defects are exposed in the completed Work.
- C. Fire-Resistance Ratings: Comply with requirements for fire-resistance-rated assembly designs indicated.
  - 1. Where fire-resistance-rated construction is indicated, units shall be listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction.

## 2.2 CONCRETE MASONRY UNITS

- A. Shapes: Provide shapes indicated and as follows, with exposed surfaces matching exposed faces of adjacent units unless otherwise indicated.
  - 1. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.
- B. CMUs: ASTM C 90.
  - 1. Grade N, two core type for reinforced masonry. Design based on  $f'm = 1500$  psi.
  - 2. Density Classification: Normal weight.

## 2.3 MATERIALS

- A. Portland Cement: ASTM C 150/C 150M, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.
- B. Hydrated Lime: ASTM C 207, Type S.
- C. Portland Cement-Lime Mix: Packaged blend of Portland cement and hydrated lime containing no other ingredients.
- D. Masonry Cement: ASTM C 91/C 91M.
- E. Aggregate for Mortar: ASTM C 144.
  - 1. For joints less than 1/4-inch (6 mm) thick, use aggregate graded with 100 percent passing the No. 16 (1.18-mm) sieve.
  - 2. White-Mortar Aggregates: Natural white sand or crushed white stone.
- F. Ready-Mixed Mortar: Cementitious materials, water, and aggregate complying with requirements specified in the Article; combined with set-controlling admixtures to produce a ready-mixed mortar complying with ASTM C1142.
- G. Aggregate for Grout: ASTM C 404.
- H. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C 494/C 494M, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.

- I. Water: Potable.

## 2.4 REINFORCEMENT

- A. Uncoated-Steel Reinforcing Bars: Reinforcing bars shall be ASTM A-615, Grade 60, lap minimum 40 bar diameters for #5 bars and smaller, lap minimum 52 bar diameters for bars larger than #5 unless noted otherwise.

## 2.5 TIES AND ANCHORS

- A. General: Ties and anchors shall extend at least 1-1/2 inches (38 mm) into veneer but with at least a 5/8-inch (16-mm) cover on outside face.

- B. Materials: Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated:
  - 1. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A 82/A 82M, with ASTM A 153/A 153M, Class B-2 coating.
  - 2. Steel Sheet, Galvanized after Fabrication: ASTM A 1008/A 1008M, Commercial Steel, with ASTM A 153/A 153M, Class B coating.
  - 3. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- C. Individual Wire Ties: Rectangular units with closed ends and not less than 4 inches (100 mm) wide.
  - 1. Wire: Fabricate from 3/16-inch- (4.76-mm-) diameter, hot-dip galvanized-steel wire.
- D. Adjustable Anchors for Connecting to Structural Steel Framing: Provide anchors that allow vertical or horizontal adjustment but resist tension and compression forces perpendicular to plane of wall.
  - 1. Anchor Section for Welding to Steel Frame: Crimped 1/4-inch- (6.35-mm-) diameter, hot-dip galvanized-steel wire.
  - 2. Tie Section: Triangular-shaped wire tie made from 0.187-inch- (4.76-mm-) diameter, hot-dip galvanized-steel wire.
- E. Rigid Anchors: Fabricate from steel bars 1-1/2 inches (38 mm) wide by 1/4 inch (6.35 mm) thick by 24 inches (610 mm) long, with ends turned up 2 inches (51 mm) or with cross pins unless otherwise indicated.
  - 1. Corrosion Protection: Hot-dip galvanized to comply with ASTM A 153/A 153M Epoxy coating 0.020 inch (0.51 mm) thick.

## 2.6 MISCELLANEOUS MASONRY ACCESSORIES

- A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene or urethane.
- B. Preformed Control-Joint Gaskets: Made from styrene-butadiene-rubber compound, complying with ASTM D 2000, Designation M2AA-805 and designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.
- C. Bond-Breaker Strips: Asphalt-saturated felt complying with ASTM D 226/D 226M, Type I (No. 15 asphalt felt).

## 2.7 MASONRY CLEANERS

- A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Diedrich Technologies, Inc.
    - b. EaCo Chem, Inc.
    - c. ProSoCo, Inc.

## 2.8 MORTAR AND GROUT MIXES

- A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.
  - 1. Do not use calcium chloride in mortar or grout.

2. Use portland cement-lime or masonry cement mortar unless otherwise indicated.
  3. For exterior masonry, use portland cement-lime or masonry cement mortar.
  4. For reinforced masonry, use portland cement-lime or masonry cement mortar.
  5. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.
- B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.
- C. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification. Provide the following types of mortar for applications stated unless another type is indicated.
1. For masonry below grade or in contact with earth, use Type M.
  2. For reinforced masonry, use Type S.
  3. For above-grade, load-bearing, use Type M or S.
  4. For above grade non-load-bearing partitions, Type N.
  5. For all exterior brick veneer use Type N.
- D. Grout for Unit Masonry: Comply with ASTM C 476.
1. Proportion grout in accordance with ASTM C 476, paragraph 4.2.2 for specified 28-day compressive strength not less than 2000 psi, tested per ASTM C1019.
  2. Provide grout with a slump of 8 to 11 inches (200 to 280 mm) as measured according to ASTM C 143.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION, GENERAL

- A. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.
- B. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures. Mix units from several pallets or cubes as they are placed.
- C. Provide lintels at all openings larger than 8" wide.

#### 3.2 TOLERANCES

- A. Dimensions and Locations of Elements:
  1. For dimensions in cross section or elevation, do not vary by more than plus 1/2 inch (12 mm) or minus 1/4 inch (6 mm).
  2. For location of elements in plan, do not vary from that indicated by more than plus or minus 1/2 inch (12 mm).
  3. For location of elements in elevation, do not vary from that indicated by more than plus or minus 1/4 inch (6 mm) in a story height or 1/2 inch (12 mm) total.
- B. Lines and Levels:
  1. For bed joints and top surfaces of bearing walls, do not vary from level by more than 1/4 inch in 10 feet (6 mm in 3 m), or 1/2-inch (12-mm) maximum.
  2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet (3 mm in 3 m), 1/4 inch in 20 feet (6 mm in 6 m), or 1/2-inch (12-mm) maximum.
  3. For vertical lines and surfaces, do not vary from plumb by more than 1/4 inch in 10 feet (6 mm in 3 m), 3/8 inch in 20 feet (9 mm in 6 m), or 1/2-inch (12-mm) maximum.

4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet (3 mm in 3 m), 1/4 inch in 20 feet (6 mm in 6 m), or 1/2-inch (12-mm) maximum.
5. For lines and surfaces, do not vary from straight by more than 1/4 inch in 10 feet (6 mm in 3 m), 3/8 inch in 20 feet (9 mm in 6 m), or 1/2-inch (12-mm) maximum.

C. Joints:

1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm), with a maximum thickness limited to 1/2 inch (12 mm).
2. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch (9 mm) or minus 1/4 inch (6 mm).
3. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm).

3.3 LAYING MASONRY WALLS

- A. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond; do not use units with less-than-nominal 4-inch (100-mm) horizontal face dimensions at corners or jambs.
- B. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.
- C. CMU Control joints shall be "Michigan" type unless noted otherwise. Horizontal reinforcing shall be discontinuous at control joints.
- D. Fill space between steel frames and masonry solidly with mortar unless otherwise indicated.
- E. Fill cores in hollow CMUs with grout 24 inches (600 mm) under bearing plates, beams, lintels, posts, and similar items unless otherwise indicated.

3.4 MORTAR BEDDING AND JOINTING

- A. Lay hollow brick and CMUs as follows:
  1. Bed face shells in mortar and make head joints of depth equal to bed joints.
  2. Bed webs in mortar in all courses of piers, columns, and pilasters.
  3. Bed webs in mortar in grouted masonry, including starting course on footings.
  4. Fully bed entire units, including areas under cells, at starting course on footings where cells are not grouted.
- B. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
- C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.
- D. Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint) unless otherwise indicated.

3.5 MASONRY-JOINT REINFORCEMENT

- A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch (16 mm) on exterior side of walls, 1/2 inch (13 mm) elsewhere. Lap reinforcement a minimum of 6 inches (150 mm).
  1. Vertical wall reinforcing: Provide (1) #4 each side of masonry openings, control joints, and as shown, in grout filled cores.

2. Horizontal wall reinforcing: Per ASTM A-82, 9 ga, hot dipped galvanized per ASTM A-153 (1.5 oz per sf.), ladder type, equal to Dur-A-Wal. Bed joints at 16" o.c. and at 1<sup>st</sup> and 2<sup>nd</sup> bed joints at bottom of wall, top of wall, above lintels and below sills. Reinforcing continuous except at vertical control joints. Side rods lapped a minimum of 6" at splices. Provide prefabricated corners and tees.

- B. Interrupt joint reinforcement at control and expansion joints unless otherwise indicated.
- C. Provide continuity at wall intersections by using prefabricated T-shaped units.
- D. Provide continuity at corners by using prefabricated L-shaped units.

### 3.6 REINFORCED UNIT MASONRY INSTALLATION

- A. Temporary Formwork and Shores: Construct formwork and shores as needed to support reinforced masonry elements during construction.
  1. Construct formwork to provide shape, line, and dimensions of completed masonry as indicated. Make forms sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
  2. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and that of other loads that may be placed on them during construction.
- B. Placing Reinforcement: Comply with requirements in ACI 530.
  1. Horizontal wall reinforcing: Bed joints at 16" o.c. and at 1<sup>st</sup> and 2<sup>nd</sup> bed joints at bottom of wall, top of wall, above lintels and below sills. Reinforcing continuous except at vertical control joints. Side rods lapped a minimum of 6" at splices. Provide prefabricated corners and tees.
  2. Vertical wall reinforcing: 1 - #4 each side of masonry openings, control joints and as shown, in grout filled block cores.
- C. Grouting: Do not place grout until entire height of masonry to be grouted has attained enough strength to resist grout pressure.
  1. Comply with requirements in TMS 602/ACI 530.1/ASCE 6 for cleanouts and for grout placement, including minimum grout space and maximum pour height.
  2. Limit height of vertical grout pours to not more than 48 inches (1220 mm).
  3. Grouting shall be mechanically consolidated in place; consolidation by rodding is not acceptable.
  4. Provide completely grouted units:
    - a. Under cast-in-place concrete floor bearing.
    - b. Under steel joist or beam bearing.

### 3.7 FIELD QUALITY CONTROL

- A. Testing and Inspecting: The General Contractor will engage special inspectors to perform tests and inspections and prepare reports. Allow inspectors access to scaffolding and work areas as needed to perform tests and inspections. Retesting of materials that fail to comply with specified requirements shall be done at Contractor's expense.
- B. Inspections: Level 1 special inspections according to the Michigan Building Code.
  1. Begin masonry construction only after inspectors have verified proportions of site-prepared mortar.
  2. Place grout only after inspectors have verified compliance of grout spaces and of grades, sizes, and locations of reinforcement.
  3. Place grout only after inspectors have verified proportions of site-prepared grout.

- C. Testing Prior to Construction: One set of tests.
- D. Testing Frequency: One set of tests for each 5000 sq. ft. (464 sq. m) of wall area or portion thereof.
- E. Clay Masonry Unit Test: For each type of unit provided, according to ASTM C 67 for compressive strength.
- F. Concrete Masonry Unit Test: For each type of unit provided, according to ASTM C 140 for compressive strength.
- G. Mortar Aggregate Ratio Test (Proportion Specification): For each mix provided, according to ASTM C 780.
- H. Mortar Test (Property Specification): For each mix provided, according to ASTM C 780. Test mortar for mortar air content and compressive strength.
- I. Grout Test (Compressive Strength): For each mix provided, according to ASTM C 1019.

### 3.8 CLEANING

- A. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- B. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as recommended by the manufacturer.

### 3.9 MASONRY WASTE DISPOSAL

- A. Excess Masonry Waste: Remove excess clean masonry waste and legally dispose of off Owner's property.

END OF SECTION 042000

## SECTION 055000 - METAL FABRICATIONS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Miscellaneous steel framing and supports.
- B. Products furnished, but not installed, under this Section include the following:
  - 1. Anchor bolts, steel pipe sleeves, slotted-channel inserts, and wedge-type inserts indicated to be cast into concrete or built into unit masonry.
  - 2. Steel weld plates and angles for casting into concrete for applications where they are not specified in other Sections.

#### 1.2 ACTION SUBMITTALS

- A. Shop Drawings: Show fabrication and installation details. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.

### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

- A. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.
  - 1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

#### 2.2 METALS

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.
- B. Steel Wide Flange Shapes: ASTM A992, Gr. 50.
- C. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- D. Stainless-Steel Bars and Shapes: ASTM A 276, Type 304.
- E. Rolled-Steel Floor Plate: ASTM A 786/A 786M, rolled from plate complying with ASTM A 36/A 36M or ASTM A 283/A 283M, Grade C or D.
- F. Steel Tubing: ASTM A 500/A 500M, Grade B, cold-formed steel tubing.
- G. Steel Pipe: ASTM A 53/A 53M, Standard Weight (Schedule 40) unless otherwise indicated.
- H. Slotted Channel Framing: Cold-formed metal box channels (struts) complying with MFMA-4.
- I. Cast Iron: Either gray iron, ASTM A 48/A 48M, or malleable iron, ASTM A 47/A 47M, unless otherwise indicated.
- J. Aluminum Extrusions: ASTM B 221 (ASTM B 221M), Alloy 6063-T6.
- K. Aluminum Castings: ASTM B 26/B 26M, Alloy 443.0-F.
- L. Bronze Extrusions: ASTM B 455, Alloy UNS No. C38500 (extruded architectural bronze).
- M. Bronze Castings: ASTM B 584, Alloy UNS No. C83600 (leaded red brass) or No. C84400 (leaded semired brass).
- N. Nickel Silver Castings: ASTM B 584, Alloy UNS No. C97600 (20 percent leaded nickel bronze).

## 2.3 FASTENERS

- A. General: Unless otherwise indicated, provide Type 304 stainless-steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B 633 or ASTM F 1941 (ASTM F 1941M), Class Fe/Zn 5, at exterior walls. Select fasteners for type, grade, and class required.
  - 1. Provide stainless-steel fasteners for fastening aluminum.
  - 2. Provide stainless-steel fasteners for fastening stainless steel.
  - 3. Provide stainless-steel fasteners for fastening nickel silver.
  - 4. Provide bronze fasteners for fastening bronze.
- B. Cast-in-Place Anchors in Concrete: Either threaded type or wedge type unless otherwise indicated; galvanized ferrous castings, either ASTM A 47/A 47M malleable iron or ASTM A 27/A 27M cast steel. Provide bolts, washers, and shims as needed, all hot-dip galvanized per ASTM F 2329.
- C. Post-Installed Anchors: Torque-controlled expansion anchors or chemical anchors.
- D. Slotted-Channel Inserts: Cold-formed, hot-dip galvanized-steel box channels (struts) complying with MFMA-4, 1-5/8 by 7/8 inches (41 by 22 mm) by length indicated with anchor straps or studs not less than 3 inches (75 mm) long at not more than 8 inches (200 mm) o.c. Provide with temporary filler and tee-head bolts, complete with washers and nuts, all zinc-plated to comply with ASTM B 633, Class Fe/Zn 5, as needed for fastening to inserts.

## 2.4 MISCELLANEOUS MATERIALS

- A. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79 and compatible with topcoat.
- B. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.
- C. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187/D 1187M.
- D. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107/C 1107M. Provide grout specifically recommended by manufacturer for interior and exterior applications.

## 2.5 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Use connections that maintain structural value of joined pieces.
- B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges. Remove sharp or rough areas on exposed surfaces.
- C. Weld corners and seams continuously to comply with the following:
  - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
  - 2. Obtain fusion without undercut or overlap.
  - 3. Remove welding flux immediately.
  - 4. At exposed connections, finish exposed welds and surfaces smooth and blended.
- D. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Locate joints where least conspicuous.
- E. Fabricate seams and other connections that are exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- F. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors not less than 8 inches (200 mm) from ends and corners of units and 24 inches (600 mm) o.c.



2.6 MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Provide steel framing and supports not specified in other Sections as needed to complete the Work.
- B. Fabricate units from steel shapes, plates, and bars of welded construction unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction.

2.7 STEEL WELD PLATES AND ANGLES

- A. Provide steel weld plates and angles not specified in other Sections, for items supported from concrete construction as needed to complete the Work. Provide each unit with no fewer than two integrally welded steel strap anchors for embedding in concrete.

2.8 FINISHES, GENERAL

- A. Finish metal fabrications after assembly.

2.9 STEEL AND IRON FINISHES

- A. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A 153/A 153M for steel and iron hardware and with ASTM A 123/A 123M for other steel and iron products.
- B. Shop prime iron and steel items not indicated to be galvanized unless they are to be embedded in concrete or masonry, or unless otherwise indicated.
  - 1. Shop prime with universal shop primer.
- C. Shop Priming: Apply shop primer to comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
- C. Field Welding: Comply with the following requirements:
  - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
  - 2. Obtain fusion without undercut or overlap.
  - 3. Remove welding flux immediately.
  - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction.
- E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

3.2 ADJUSTING AND CLEANING

- A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
- B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780/A 780M.

END OF SECTION 055000

SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
  - 1. Wood blocking and nailers.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product.
  - 1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements

1.3 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.
- B. Evaluation Reports: For the following, from ICC-ES:
  - 1. Wood-preservative-treated wood.
  - 2. Power-driven fasteners.
  - 3. Metal framing anchors.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
  - 1. Factory mark each piece of lumber with grade stamp of grading agency.
  - 2. Dress lumber, S4S, unless otherwise indicated.
- B. Maximum Moisture Content of Lumber: 15 percent for 2-inch nominal (38-mm actual) thickness or less.

2.2 WOOD-PRESERVATIVE-TREATED MATERIAL

- A. Preservative Treatment by Pressure Process: AWWA U1; Use Category UC2 for interior construction and Category UC3b for exterior construction.
  - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat items indicated on Drawings, and the following:
  - 1. Wood, nailers, blocking, stripping, and similar members in connection with flashing.

2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.

### 2.3 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.
- B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet (3.2 m) beyond the centerline of the burners at any time during the test.
  1. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for exterior locations and where indicated.
  2. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D 3201 at 92 percent relative humidity. Use where exterior type is not indicated.
- C. Kiln-dry lumber and plywood after treatment to a maximum moisture content of 15 percent.
- D. Identify fire-retardant-treated wood with appropriate classification marking of qualified testing agency.
- E. Application: Treat items indicated on Drawings, and the following:
  1. Plywood backing panels.

### 2.4 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
  1. Blocking.
  2. Nailers.
  3. Furring.
  4. Grounds.
- B. Dimension Lumber Items: Construction or No. 2 grade lumber of any species.
- C. Concealed Boards: 15 percent maximum moisture content and any of the following species and grades:
  1. Mixed southern pine or southern pine; No. 2 grade; SPIB.
  2. Eastern softwoods; No. 2 Common grade; NeLMA.
  3. Northern species; No. 2 Common grade; NLGA.
  4. Western woods; Construction or No. 2 Common grade; WCLIB or WWPA.

### 2.5 FASTENERS

- A. General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture.
  1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
- B. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

## 2.6 METAL FRAMING ANCHORS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
  - 1. Cleveland Steel Specialty Co.
  - 2. KC Metals Products, Inc.
  - 3. Phoenix Metal Products, Inc.
  - 4. Simpson Strong-Tie Co., Inc.
  - 5. USP Structural Connectors.
- B. Allowable Design Loads: Provide products with allowable design loads, as published by manufacturer, that meet or exceed those of products of manufacturers listed. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.
- C. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 (Z180) coating designation.
  - 1. Use for interior locations unless otherwise indicated.
- D. Hot-Dip, Heavy-Galvanized Steel Sheet: ASTM A 653/A 653M; structural steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G185 (Z550) coating designation; and not less than 0.036 inch (0.9 mm) thick.
  - 1. Use for wood-preserved-treated lumber and where indicated.

## 2.7 MISCELLANEOUS MATERIALS

- A. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, rubberized-asphalt compound, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than 0.025 inch (0.6 mm).
- B. Adhesives for Gluing Furring and Sleepers to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.

## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- B. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.
- C. Do not splice structural members between supports unless otherwise indicated.
- D. Comply with AWWA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
- E. Metal Framing Anchors: Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.
- F. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
  - 1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code (IBC).

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

END OF SECTION 061000

## SECTION 079200 - JOINT SEALANTS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes joint sealants for the following applications, including those specified by reference to this Section and following applications:
1. Exterior joints in the following vertical surfaces and horizontal nontraffic surfaces:
    - a. Joints between different materials.
    - b. Perimeter joints between materials and frames of doors and louvers.
    - c. Other joints as indicated.
  2. Exterior joints in the following horizontal traffic surfaces:
    - a. Isolation and contraction joints in cast-in-place concrete slabs.
    - b. Other joints as indicated.
  3. Interior joints in the following vertical surfaces and horizontal nontraffic surfaces:
    - a. Tile control and expansion joints.
    - b. Vertical joints on exposed surfaces of interior ceramic tile and glazed concrete masonry walls.
    - c. Perimeter joints between interior wall surfaces and frames of interior doors and windows.
    - d. Joints between plumbing fixtures and adjoining walls, floors, and counters.
    - e. Other joints as indicated.
  4. Interior joints in the following horizontal traffic surfaces:
    - a. Isolation joints in cast-in-place concrete slabs.
    - b. Joints in tile flooring.
    - c. Other joints as indicated.

#### 1.2 PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.
- B. Provide joint sealants for interior applications that establish and maintain airtight and water-resistant continuous joint seals without staining or deteriorating joint substrates.

#### 1.3 SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples: For each type and color of joint sealant required, provide Samples with joint sealants in 1/2-inch- (13-mm-) wide joints formed between two 6-inch- (150-mm-) long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

#### 1.4 QUALITY ASSURANCE

- A. Preconstruction Field-Adhesion Testing: Before installing elastomeric sealants, field test their adhesion to Project joint substrates according to the method in ASTM C 1193 that is appropriate for the types of Project joints.

#### 1.5 WARRANTY

- A. Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
1. Warranty Period: Two years from date of Substantial Completion.

- B. Special Manufacturer's Warranty: Manufacturer's standard form in which elastomeric sealant manufacturer agrees to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
  - 1. Warranty Period: 10 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.

### 2.2 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.
- B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

### 2.3 ELASTOMERIC JOINT SEALANTS

- A. Elastomeric Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- B. Stain-Test-Response Characteristics: Where elastomeric sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- C. Suitability for Immersion in Liquids. Where elastomeric sealants are indicated for Use I for joints that will be continuously immersed in liquids, provide products that have undergone testing according to ASTM C 1247 and qualify for the length of exposure indicated by reference to ASTM C 920 for Class 1 or 2. Liquid used for testing sealants is deionized water, unless otherwise indicated.
- D. Low-Modulus Neutral -Curing Polyurethane Sealant: Where joint sealants of this type are indicated, provide products complying with the following:
  - 1. Available Products:
    - a. Pecora Corporation; Dynatrol I-XL.
    - b. Tremco; DyMonic.
    - c. Tremco; Vulkem 921.
  - 2. Type and Grade: S (single component) and NS (nonsag).
  - 3. Class: 25.
  - 4. Use Related to Exposure: NT (nontraffic).
  - 5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.
    - a. Coated glass, aluminum coated with a high-performance coating, color anodic aluminum, galvanized steel, brick, limestone, marble, granite, plastic, tile, wood.
- E. Single-Component Mildew-Resistant Acid-Curing Silicone Sealant: Where joint sealants of this type are indicated, provide products formulated with fungicide that are intended for sealing interior ceramic tile joints and other nonporous substrates that are subject to in-service exposures of high humidity and temperature extremes, and that comply with the following:



1. Available Products:
    - a. Dow Corning Corporation; 786 Mildew Resistant.
    - b. GE Silicones; Sanitary SCS1700.
    - c. Tremco; Tremsil 200 White.
  2. Type and Grade: S (single component) and NS (nonsag).
  3. Class: 25.
  4. Use Related to Exposure: NT (nontraffic).
  5. Uses Related to Joint Substrates: G, A, and, as applicable to joint substrates indicated,
    - a. Coated glass, aluminum coated with a high-performance coating, color anodic aluminum, galvanized steel, marble, granite, plastic and tile.
- F. Single-Component Pourable Urethane Sealant: Where joint sealants of this type are indicated, provide products complying with the following:
1. Available Products:
    - a. Pecora Corporation; Urexpan NR-201.
    - b. Polymeric Systems Inc.; Flexiprene 952.
    - c. Tremco; Tremflex S/L.
    - d. Tremco; Vulkem 45.
    - e. Sonneborn Building Products, Div., ChemRex Inc.; SL 1.
  2. Type and Grade: S (single component) and P (pourable).
  3. Class: 25.
  4. Use Related to Exposure: T (traffic) and NT (nontraffic).
  5. Uses Related to Joint Substrates: M, A, and, as applicable to joint substrates indicated,
    - a. Color anodic aluminum, aluminum coated with a high-performance coating, galvanized steel, brick, granite, marble, ceramic tile and wood.

#### 2.4 JOINT-SEALANT BACKING

- A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), O (open-cell material), B (bicellular material with a surface skin) or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:
- C. Elastomeric Tubing Sealant Backings: Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D 1056, nonabsorbent to water and gas, and capable of remaining resilient at temperatures down to minus 26 deg F (minus 32 deg C). Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth, and to otherwise contribute to optimum sealant performance.
- D. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

#### 2.5 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants.
  - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant.
    - a. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air.
  - 2. Remove laitance and form-release agents from concrete.
    - a. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
- B. Joint Priming: Prime joint substrates, where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

### 3.2 INSTALLATION

- A. General: All dissimilar materials are to be caulked.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
  - 1. Do not leave gaps between ends of sealant backings.
  - 2. Do not stretch, twist, puncture, or tear sealant backings.
  - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
  - 1. Place sealants so they directly contact and fully wet joint substrates.

2. Completely fill recesses in each joint configuration.
  3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
1. Remove excess sealant from surfaces adjacent to joints.
  2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
  3. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.
- G. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

### 3.3 JOINT-SEALANT SCHEDULE

- A. Joint-Sealant Application: Vertical interior joints in ceramic tile or glazed CMU walls, where non-porous surface wraps into joint.
1. Joint Sealant: Single-component mildew-resistant acid-curing silicone sealant.
  2. Joint Sealant Color: As selected by Architect from Manufacturers full color range to match mortar or grout color of walls.
- B. Joint-Sealant Application: Interior joints between plumbing fixtures and adjoining walls, floors, and counters.
1. Joint Sealant: Single-component mildew-resistant acid-curing silicone sealant.
  2. Joint-Sealant Color: As selected by Architect from Manufacturers full color range.

END OF SECTION 079200

SECTION 083113 - ACCESS DOORS AND FRAMES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
  - 1. Access doors and frames.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Product Schedule: For access doors and frames.

1.3 QUALITY ASSURANCE

- A. Fire-Rated Door Inspector Qualifications: Inspector for field quality control inspections of fire-rated door assemblies meets the qualifications set forth in NFPA 80, Section 5.2.3.1 and the following:

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Rated Access Doors and Frames: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection[ and temperature-rise limit] ratings indicated, according to NFPA 252 or UL 10B.

2.2 ACCESS DOORS AND FRAMES

- A. Flush Access Doors with Exposed Flanges :
  - 1. Manufacturers: Subject to compliance with requirements, Manufacturers whose products may be incorporated into the work include, but are not limited to the following:
    - a. Milcor
    - b. Nystrom
    - c. Accu-Door
  - 2. Description: Face of door flush with frame, with exposed flange and concealed hinge.
  - 3. Locations: Wall and ceiling.
  - 4. Uncoated Steel Sheet for Door 16 gage, factory finished.
  - 5. Frame Material: Same material, thickness, and finish as door.
  - 6. Latch and Lock: Cam or Latch bolt, key operated.
    - a. Provide two keys for each door.

2.3 MATERIALS

- A. Steel Plates, Shapes, and Bars: ASTM A36/A36M.
- B. Steel Sheet: Uncoated or electrolytic zinc coated, ASTM A879/A879M, with cold-rolled steel sheet substrate complying with ASTM A1008/A1008M, Commercial Steel (CS), exposed.
- C. Frame Anchors: Same material as door face.

- D. Inserts, Bolts, and Anchor Fasteners: Non-Corrosive

#### 2.4 FABRICATION

- A. Metal Surfaces: For metal surfaces exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.
- B. Doors and Frames: Grind exposed welds smooth and flush with adjacent surfaces. Furnish mounting holes, attachment devices and fasteners of type required to secure access doors to types of supports indicated.

#### 2.5 FINISHES

- A. Painted Finishes: Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.
  - 1. Factory Finished: Apply manufacturer's standard baked-enamel or powder-coat finish immediately after cleaning and pretreating, with minimum dry-film thickness of 1 mil (0.025 mm) for topcoat.
    - a. Color: White

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Comply with manufacturer's written instructions for installing access doors and frames.
- B. Adjust doors and hardware, after installation, for proper operation.

#### 3.2 FIELD QUALITY CONTROL

- A. Inspections:
  - 1. Fire-Rated Door Inspections: Inspect each fire-rated access door in accordance with NFPA 80, Section 5.2.
- B. Repair or remove and replace installations where inspections indicate that they do not comply with specified requirements.
- C. Reinspect repaired or replaced installations to determine if replaced or repaired door assembly installations comply with specified requirements.

END OF SECTION 083113

SECTION 095113 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
  - 1. Acoustical panels for ceilings.
  - 2. Exposed suspension system for ceilings.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples: For each acoustical panel, for each exposed suspension system member, for each exposed molding and trim and for each color and texture required.
  - 1. Acoustical Panel: Set of 6-inch square samples of each type, color, pattern and texture.
  - 2. Exposed Suspension System Members, Moldings, and Trim: Set of 12-inch-long sample of each type, finish and color.
- C. Product test reports.
- D. Research/evaluation reports.
- E. Maintenance data.

1.3 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type of acoustical ceiling panel and supporting suspension system through one source from a single manufacturer.
- B. Fire-Test-Response Characteristics:
  - 1. Fire-Resistance Characteristics: Where indicated, provide acoustical panel ceilings identical to those of assemblies tested for fire resistance per ASTM E 119 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.
    - a. Identify materials with appropriate markings of applicable testing and inspecting agency.
  - 2. Surface-Burning Characteristics: Acoustical panels complying with ASTM E 1264 for Class A materials, when tested per ASTM E 84.
    - a. Smoke-Developed Index: 450 or less.
- C. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
  - 1. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- D. Preinstallation Conference: Conduct conference at Project site.

1.4 PROJECT CONDITIONS

- A. Environmental Limitation: Do not install acoustical panel ceilings until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.
- B. Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.

1.5 COORDINATION

- A. Coordinate layout and installation of acoustical panels and suspension system with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system and partition assemblies.

PART 2 - PRODUCTS

2.1 ACOUSTICAL PANEL CEILINGS, GENERAL

- A. Acoustical Panel Standard: Comply with ASTM E 1264.
- B. Metal Suspension System Standard: Comply with ASTM C 635.
- C. Attachment Devices: Size for five times the design load indicated in ASTM C 635, Table 1, "Direct Hung," unless otherwise indicated.
- D. Wire Hangers, Braces, and Ties: Zinc-coated carbon-steel wire; ASTM A 641/A 641M, Class 1 zinc coating, soft temper.
  - 1. Size: Select wire diameter so its stress at 3 times hanger design load (ASTM C 635, Table 1, "Direct Hung") will be less than yield stress of wire, but provide not less than 0.106-inch- (2.69-mm-) diameter wire.
- E. Provide Hanger Rods or Flat Hangers from mild steel, zinc coated or protected with rust-inhibitive paint as required.
- F. Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension system runners.
  - 1. Provide manufacturer's standard edge moldings that fit acoustical panel edge details and suspension systems indicated and that match width and configuration of exposed runners, unless otherwise indicated.
  - 2. Where bullnose corners occur, provide preformed corners to match edge moldings.

2.2 ACOUSTICAL PANELS FOR ACOUSTICAL PANEL CEILING, SAT

- A. (SAT-1) Basis-of-Design Product: Subject to compliance with requirements, provide USG Interiors, Inc.; Product: Clean Room Clima Plus.
  - 1. Color: White.
  - 2. Face: Vinyl
  - 2. LR: Not less than .79.
  - 3. NRC: -.
  - 4. CAC: Not less than 35.
  - 5. Edge/Joint Detail: Square.
  - 6. Thickness: 5/8 inch (15 mm).
  - 7. Weight: 1.15 lb./ft.<sup>2</sup>.
  - 8. Modular Size: 24 by 24 inches (600 by 600 mm).
  - 9. Locations: All Toilet Rooms.

2.3 METAL SUSPENSION SYSTEM FOR ACOUSTICAL PANEL CEILING

- A. Basis-of-Design Product: Subject to compliance with requirements, provide USG Interiors, Inc., Product DX/DXL.
- B. Wide-Face, Double-Web, Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet, prepainted, electrolytically zinc coated, or hot-dip

galvanized according to ASTM A 653/A 653M, not less than G30 (Z90) coating designation, with prefinished 15/16-inch- (24-mm-) wide metal caps on flanges.

1. Structural Classification: Intermediate-duty system.
2. End Condition of Cross Runners: Butt-edge type.
3. Cap Material: Steel cold-rolled sheet.
4. Cap Finish: Painted white.

#### 2.4 ACOUSTICAL SEALANT

- A. Acoustical Sealant for Exposed and Concealed Joints: Manufacturer's standard non-sag, paintable, non-staining latex sealant complying with ASTM C 834 and the following requirements:
  1. Product is effective in reducing airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies per ASTM E 90.
  2. Product has flame-spread and smoke-developed ratings of less than 25 per ASTM E 84.
- B. Acoustical Sealant for Concealed Joints: Manufacturer's standard non-drying, non-hardening, non-skinning, non-staining, gunnable, synthetic rubber sealant recommended for sealing interior concealed joints to reduce transmission of airborne sound.
- C. Products: Subject to compliance with requirements, provide one of the following:
  1. Acoustical Sealant for Exposed and Concealed Joints:
    - a. AC-20 FTR Acoustical and Insulation Sealant; Pecora Corp.
    - b. SHEETROCK Acoustical Sealant; United States Gypsum Company.
  2. Acoustical Sealant for Concealed Joints:
    - a. BA-98; Pecora Corp.
    - b. Tremco Acoustical Sealant; Tremco, Inc.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Comply with ASTM C 636 per manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."
- B. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders, and comply with layout shown on reflected ceiling plans.
- C. Suspend ceiling hangers from building's structural members, plumb and free from contact with insulation or other objects within ceiling plenum. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers, use trapezes or equivalent devices. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
  1. Do not support ceilings directly from permanent metal forms or floor deck; anchor into concrete slabs.
  2. Do not attach hangers to steel deck tabs or to steel roof deck. Attach hangers to structural members.



3. Space hangers not more than 48-inches (1200 mm) o.c. along each member supported directly from hangers, unless otherwise indicated; provide hangers not more than 8-inches (200 mm) from ends of each member.
  4. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.
- D. Secure bracing wires to ceiling suspension members and to supports with a minimum of four tight turns. Suspend bracing from building's structural members as required for hangers, without attaching to permanent metal forms, steel deck, or steel deck tabs. Fasten bracing wires into concrete with cast-in-place or postinstalled anchors.
- E. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels. Screw attach moldings to substrate at intervals not more than 16 inches (400 mm) o.c. and not more than 3 inches (75 mm) from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet (3.2 mm in 3.6 m). Miter corners accurately and connect securely. Apply acoustical sealant in a continuous ribbon, concealed on back of vertical legs of mouldings, before they are installed.
- F. Install suspension system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
- G. Install acoustical panels with undamaged edges and fit accurately into suspension system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit.

END OF SECTION 09511

SECTION 099123 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes surface preparation and the application of paint systems on the following interior substrates:
  - 1. Concrete masonry units (CMU).
  - 2. Steel.
  - 3. Gypsum board or plaster.
- B. Refer to Division 9 Section "High Performance Coatings" for painting of embedded steel lintels.

1.2 DEFINITIONS

- A. Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
- B. Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- C. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- D. Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
- E. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
- F. Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
- G. Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.3 SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
- B. Samples: Paint drawdown cards for each color and type of topcoat.

PART 2 - PRODUCTS

2.1 PAINT, GENERAL

- A. Manufacturers: Subject to compliance with requirements, provide products from one of the following manufacturers:
  - 1. Sherwin Williams
  - 2. Benjamin Moore
  - 3. Pratt & Lambert
  - 4. PPG
  - 5. Glidden
  - 6. Valspar
- B. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."

- C. Material Compatibility:
  - 1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
  - 2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- D. VOC Content: Products shall comply with VOC limits of authorities having jurisdiction.
  - 1. Flat Paints and Coatings: 50 g/L.
  - 2. Nonflat Paints and Coatings: 150 g/L.
  - 3. Dry-Fog Coatings: 400 g/L.
  - 4. Primers, Sealers, and Undercoaters: 200 g/L.
  - 5. Anticorrosive and Antirust Paints Applied to Ferrous Metals: 250 g/L.
  - 6. Zinc-Rich Industrial Maintenance Primers: 340 g/L.
  - 7. Pretreatment Wash Primers: 420 g/L.
  - 8. Floor Coatings: 100 g/L.
  - 9. Shellacs, Clear: 730 g/L.
  - 10. Shellacs, Pigmented: 550 g/L.

## 2.2 PRIMERS/SEALERS

- A. Primer Sealer, Latex, Interior: MPI #50.
  - 1. Basis of Design: Sherwin Williams Pro Mar 200, B28WO2600 Interior Latex Primer
- B. Primer, Block Filler, Latex, interior, MPI #4
  - 1. Basis of Design: Sherwin Williams Pro Industrial Heavy Duty Block Filler

## 2.3 METAL PRIMERS

- A. Primer, Alkyd, Anti-Corrosive, for Metal: MPI #79.
  - 1. Basis of Design: Sherwin Williams Kem Bond HS B50WZ004

## 2.4 OIL-BASED PAINTS

- A. Enamel, Alkyd: MPI #81
  - 1. Basis of Design: Sherwin Williams Direct to Metal B55W00101

## 2.5 WATER-BASED PAINTS

- A. Latex, Interior: MPI #43.
  - 1. Basis of Design: Sherwin Williams Pro Mar 200, B31-2600 Interior Latex Paint

## 2.6 EPOXY PAINTS

- A. Epoxy, Water Based, Catalyzed: MPI #115.
  - 1. Basis of Design: Sherwin Williams Pro Industrial, B73W311 Catalyzed Epoxy Paint

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
  - 1. Concrete: 12 percent.
  - 2. Masonry (Clay and CMU): 12 percent.
  - 3. Wood: 15 percent.
  - 4. Gypsum Board: 12 percent.
  - 5. Plaster: 12 percent.
- C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- D. Proceed with coating application only after unsatisfactory conditions have been corrected.
  - 1. Application of coating indicates acceptance of surfaces and conditions.

#### 3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
  - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Light abrade glazed masonry or other glossy surfaces as recommended by the paint manufacturer prior to priming.
- D. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
  - 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

#### 3.3 APPLICATION

- A. Apply primers and paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
- B. Adhesion Test: Use principles of ASTM D3359 after minimum 7 day cure time of primer to ensure 90% of coating continues to adhere, contact coatings manufacturer for assistance as needed.
- C. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.4 CLEANING AND PROTECTION

- A. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- B. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 INTERIOR PAINTING SCHEDULE

- A. Steel Substrates:
  - 1. Quick-Drying Enamel System:
    - a. Prime Coat: Primer, alkyd, anti-corrosive, for metal, MPI #79
    - b. Intermediate Coat: Alkyd, matching topcoat.
    - c. Topcoat: Alkyd, quick dry, semi-gloss (Gloss Level 5), MPI #81.
- B. Concrete Masonry Substrates:
  - 1. Latex System:
    - a. Prime Coat: Block Filler (at new CMU)
    - b. Intermediate Coat: Latex, interior, matching topcoat.
    - c. Topcoat: Latex, interior, semi-gloss (Gloss Level 5), MPI #43.
- C. Gypsum Board or Plaster Substrates:
  - 1. Latex System:
    - a. Prime Coat: Primer sealer, latex, interior, MPI #50.
    - b. Intermediate Coat: Latex, interior, matching topcoat.
    - c. Topcoat: Latex, interior, (Gloss Level 5), MPI #43.

3.6 PAINT COLOR SCHEDULE

- A. Refer to Drawings for paint colors and locations.

END OF SECTION 099123

SECTION 102113.19 - SOLID POLYMER TOILET COMPARTMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
  - 1. Solid-polymer toilet compartments configured as toilet enclosures and urinal screens.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
- C. Samples: Provide samples of manufacturer's standard range of colors for selection by Architect.
- D. Maintenance data.

1.3 QUALITY ASSURANCE

- A. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84, or another standard acceptable to authorities having jurisdiction, by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
  - 1. Flame-Spread Index: 25 or less.
  - 2. Smoke-Developed Index: 450 or less.
- B. Regulatory Requirements: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA) and Architectural Barriers Act (ABA) Accessibility Guidelines for Buildings and Facilities" and ICC/ANSI A117.1 for toilet compartments designated as accessible.

1.4 WARRANTY

- A. Manufacturer's Warranty: Manufacturer's standard form in which manufacturer agrees to replace partitions that do not comply with requirements or that fail within 15 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SOLID-POLYMER UNITS

- A. Manufacturers: Subject to compliance with requirements, provide solid polymer toilet compartments by Scranton Products.
  - 1. Color and Texture: Nickel, Hammered.
- B. Substitutions: Upon review and approval by Architect, comparable products by one of the following may be accepted as an Alternate:
  - 1. ASI Global
  - 2. Accurate Partitions Corporation.
  - 3. Ampco, Inc.
  - 4. Bradley Corporation; Mills Partitions.
  - 5. General Partitions Mfg. Corp.
  - 6. Hadrian Manufacturing Inc.
  - 7. Metpar Corp.
  - 8. Weis-Robart Partitions, Inc.

- C. Toilet-Enclosure Style: Overhead braced.
- D. Urinal-Screen Style: Wall hung.
- E. Door, Panel, and Pilaster Construction: Solid, high-density polyethylene (HDPE) panel material, not less than 1 inch (25 mm) thick, seamless, with eased edges, and with homogenous color and pattern throughout thickness of material.
  - 1. Integral Hinges: Configure doors and pilasters to receive integral hinges.
  - 2. Heat-Sink Strip: Manufacturer's standard continuous, extruded-aluminum or stainless-steel strip fastened to exposed bottom edges of solid-polymer components to prevent burning.
  - 3. Polymer Panel Finish: One color and pattern in each room.
    - a. Color and Pattern: ASI Global #9511 Metallic Silver, Hammered Texture, or Architect approved equal.
- F. Pilaster Shoes and Sleeves (Caps): Manufacturer's standard design; ASTM A167, Type 302/304 stainless steel.
- G. Brackets (Fittings):
  - 1. Full-Height (Continuous) Angle: Manufacturer's extruded aluminum or stainless steel.

## 2.2 ACCESSORIES

- A. Hardware and Accessories: Manufacturer's standard design, heavy-duty operating hardware and accessories.
  - 1. Material: Chrome-plated zamac, Stainless steel or Chrome-plated brass.
  - 2. Hinges: Manufacturer's integral hinge for solid-polymer doors.
  - 3. Latch and Keeper: Manufacturer's standard surface-mounted latch unit designed for emergency access and with combination rubber-faced door strike and keeper. Provide units that comply with regulatory requirements for accessibility at compartments designated as accessible.
  - 4. Coat Hook: Manufacturer's standard combination hook and rubber-tipped bumper, sized to prevent in-swinging door from hitting compartment-mounted accessories.
  - 5. Door Bumper: Manufacturer's standard rubber-tipped bumper at out-swinging doors.
  - 6. Door Pull: Manufacturer's standard unit at out-swinging doors that complies with regulatory requirements for accessibility. Provide units on both sides of doors at compartments designated as accessible.
- B. Overhead Bracing: Manufacturer's standard continuous, extruded-aluminum head rail with anti-grip profile and in manufacturer's standard finish.
- C. Anchorages and Fasteners: Manufacturer's standard exposed fasteners of stainless steel or chrome-plated brass, finished to match the items they are securing, with theft-resistant-type heads. Provide sex-type bolts for through-bolt applications. For concealed anchors, use stainless steel, hot-dip galvanized steel, or other rust-resistant, protective-coated steel.

## 2.3 FABRICATION

- A. Overhead-Braced Units: Provide manufacturer's standard corrosion-resistant supports, leveling mechanism, and anchors at pilasters to suit floor conditions. Provide shoes at pilasters to conceal supports and leveling mechanism.
- B. Urinal Screens: Furnish panel and pilaster in sizes indicated, of same construction and finish as partition system panels.
- C. Panels: Dividing panels shall be 55-inches high, unless noted otherwise and mounted at 14-inches above finish floor.
- D. Door Size and Swings: Unless otherwise indicated, provide 24-inch- (610-mm-) wide, in-swinging doors for standard toilet compartments and 36-inch- (914-mm-) wide, out-swinging doors with a minimum 32-inch- (813-mm-) wide, clear opening for compartments designated as accessible.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General: Comply with manufacturer's written installation instructions. Install units rigid, straight, level, and plumb. Secure units in position with manufacturer's recommended anchoring devices.
- B. Clearances: Maximum 1/2 inch (13 mm) between pilasters and panels; 1 inch (25 mm) between panels and walls.
- C. Hardware: Install per manufacturer's standards. Comply with ADA and barrier free requirements.
- D. Continuous Brackets: Secure panels in position with manufacturer's recommended anchoring devices.
  - 1. Locate continuous wall brackets so holes for wall anchors occur in masonry or tile joints.
  - 2. Secure panels to pilasters with continuous brackets located to align with brackets at wall.

3.2 ADJUSTING AND CLEANING

- A. Hardware Adjustment: Adjust and lubricate hardware according to hardware manufacturer's written instructions for proper operation. Set hinges on in-swinging doors to hold doors open approximately 30 degrees from closed position when unlatched. Set hinges on out-swinging doors to return doors to approximately 10 degrees from closed position when unlatched.
- B. Clean exposed surface of partition systems using materials and methods recommended by manufacturer. Provide protection to prevent damage during construction period.

END OF SECTION 102113



SECTION 102800 - TOILET ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
  - 1. Washroom accessories.
  - 2. Installation of Owner Provided accessories.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

1.3 INFORMATIONAL SUBMITTALS

- A. Warranty: Sample of special warranty.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance data.

PART 2 - PRODUCTS

2.1 WASHROOM ACCESSORIES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. A & J Washroom Accessories, Inc.
  - 2. American Specialties, Inc.
  - 3. Bobrick Washroom Equipment, Inc.
  - 4. Bradley Corporation.
  - 5. GAMCO Specialty Accessories; a division of Bobrick Washroom Equipment, Inc.
  - 6. Tubular Specialties Manufacturing, Inc.
- B. Toilet Tissue Dispenser: Install Owner provided equipment.
- C. Paper Towel (Folded) Dispenser: Install Owner provided equipment.
- D. Liquid-Soap Dispenser: Install Owner provided equipment.
- A. Sanitary Napkin Disposal Units
  - 1. Basis-of-Design Product: Bradley 4B2-11 Elvari
  - 2. Mounting: Surface mounted
  - 3. Material: Stainless Steel, Satin finish
  - 4. Features: Used / empty indicator
  - 5. Mounting Brackets: Manufacturer's standard concealed brackets.
  - 6. Locations: 1 per toilet compartment for female bathrooms.
- B. Mirror - Framed:
  - 1. Basis-of-Design Product: Bradley 781.
  - 2. Frame: ¾" x ¾" bright finished stainless steel with 90 degree mitred corners.
  - 3. Back: Galvanized steel
  - 4. Mirror: ¼" float glass with manufacturer's standard reflective backing with a protective finish, and shock absorbing material installed between the frame, metal back panel and the glass.
  - 5. Mounting Brackets: Manufacturer's standard concealed brackets.
  - 6. Dimensions: as indicated on Drawings.
- C. Mirror - Frameless beveled glass:

1. Basis-of-Design Product: Dulles Glass Custom Rectangular, or equal
2. Back: Manufacturer's Standard
3. Mirror: 1/4" float glass with manufacturer's standard reflective backing with a protective finish, and shock absorbing material installed between the frame, metal back panel and the glass.
4. Mounting Brackets: Manufacturer's standard concealed brackets.
5. Dimensions: as indicated on Drawings.

D. Grab Bar:

1. Basis-of-Design Product: Bradley 812, Straight Grab Bar.
2. Mounting: Flanges with concealed fasteners.
3. Material: Stainless steel, 0.05 inch (1.3 mm) thick.
  - a. Finish: Safety grip finish.
4. Outside Diameter: 1-1/2 inches (38 mm).
5. Configuration and Length: Wheelchair Compartments: 36" rear wall horizontal, 42" side wall horizontal, 18" side wall vertical each compartment. Ambulatory Compartments: (2) 42" side wall horizontal each compartment.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.
- B. Install Owner provided accessories as noted. Install units level, plumb, and firmly anchored in locations and at heights indicated.
- C. Grab Bars: Install to withstand a downward load of at least 250 lbf (1112 N), when tested according to ASTM F 446.

END OF SECTION 102800

INDEX OF SPECIFICATION SECTIONS

SECTION	TITLE
Division 22 - Plumbing	
22 05 00	Plumbing Requirements
22 05 10	Plumbing Systems Testing, Cleaning, Water Treatment and Startup
22 05 53	Plumbing System Identification
22 06 00	Plumbing Specialties
22 07 00	Plumbing Pipe Insulation
22 10 00	Plumbing Piping
Division 23 - Heating, Ventilating and Air Conditioning	
23 05 00	HVAC Requirements
23 05 53	HVAC Identification
23 30 00	Air Distribution
Division 26 - Electrical	
26 00 00	Basic Electrical Requirements
26 05 05	Selective Demolition for Electrical
26 05 19	Low-Voltage Electrical Power Conductors and Cables
26 05 26	Grounding and Bonding for Electrical Systems
26 05 29	Hangers and Supports for Electrical Systems
26 05 33.13	Conduit for Electrical Systems
26 05 33.16	Boxes for Electrical Systems
26 05 83	Wiring Connections
26 09 23	Lighting Control Devices
26 27 26	Wiring Devices
26 51 00	Interior Lighting
Division 28 - Electronic Safety & Security	
28 46 13	Fire Alarm System

MAI: 2024-1527

SECTION 22 05 00

PLUMBING REQUIREMENTS

PART 1 GENERAL

1.1 RELATED SPECIFICATIONS AND DOCUMENTS

- A. Drawings and related specifications for this project including General and Supplementary Conditions, Division 1, General Requirements, Instructions to Bidders, Addenda's, etc. apply to and are considered a part of Division 22 - Mechanical Work.
- B. Information in this division is intended to clarify or make additions to the requirements set forth in the General Conditions, Supplementary Conditions, and Division I of these specifications. Any conflict between this Division 22 and other sections or divisions of the specifications or drawings shall be brought to the attention of the Architect/Engineer in writing as a request for addendum prior to the bid opening.
- C. Furnish all equipment, materials, articles, items, operations or methods listed, mentioned or scheduled on drawings, these specifications, manufacturer's installation instructions and include all labor, materials, equipment and incidentals necessary for their complete installation and operation.
- D. All information contained in this section applies to all sections within Division 22 as if it was part of each section.

1.2 DRAWINGS AND SPECIFICATIONS

- A. The drawings and these specifications are intended to supplement each other and any material or labor called for in one shall be furnished even if not specifically mentioned in both. Any material or labor which is neither shown on the drawings nor listed in this specification, but is normally incurred or required for completion of work shall be furnished. If there is a discrepancy between the drawings and specifications, the more stringent of the two shall be followed.
- B. Drawings are diagrammatic and are intended to show approximate location and general arrangement of systems and equipment. No attempt has been made to show every ell, tee, etc. Drawings shall not be scaled for location of systems, equipment, etc. All dimensions whether given on drawings or scaled shall be verified in field and coordinated with all other trades and existing field conditions. Some plumbing, piping, equipment, etc. locations may require changes in location due to field conditions and coordination with other trades will be made with no additional cost to the Owner. Failure to check will be no reason for additional compensation.
- C. These drawings and the associated specifications are intended to provide complete furnishing, installation and operational plumbing systems as specified under Division 22 and as called for on the drawings. If these drawings and associated specifications have information omitted that would not allow a completely operational system as is the intent of the Engineer, the bidder shall notify the Engineer a minimum one week prior to the bid date to allow for addenda. Once bids have been received, the Contractor shall be responsible for material,

labor, etc., to furnish and install a completely operational plumbing system as is the intent of these drawings and associated specification.

- D. The installation of all systems, equipment, etc., is subject to clarification with submitted shop drawings and field coordination requirements. Equipment outlines shown on drawings or dimensioned on drawings are limiting dimensions. Any equipment that reduces the indicated clearances or exceeds specified or scheduled equipment dimensions shall not be used.
- E. The Architect/Engineer and Owner reserve the right to make minor changes in the location of equipment, piping, ductwork, etc. at the time of rough-in without additional cost to the Owner.
- F. The Mechanical Trades Contractor shall have completed for his portion of work, at least one installation of size and type comparable to this project and has been in satisfactory operation for at least two complete years. The Mechanical Trades Contractor shall also have a developed service department capable of negotiating service contracts with the Owner for systems herein specified.

### 1.3 AUTOCAD BACKGROUND FILES

- A. The Contractor shall include in their bid any cost for requesting AutoCAD backgrounds for their use from the Architect or Engineer. The cost will be \$150.00 for the first plan, and \$50.00 for each additional plan that may be requested for AutoCAD use. A waiver of responsibility for the Architect and Engineer related to Contractor use of the CAD files shall be signed by the Contractor.

### 1.4 MANUFACTURER'S SPECIFICATIONS AND CAPACITIES

- A. Some equipment, plumbing fixtures, materials, etc. that are scheduled on the drawings or listed in any addenda may not be specified in this specification. The manufacturer's specification and capacities shall be considered included and part of this specification whether it is specified in this specification or noted or scheduled on the drawings. The contractor shall remove and replace any "substituted" equipment or material, which has been installed or is on site, which in the opinion of the Architect/Engineer does not meet the scheduled equipment or materials, manufacturer's capacities or specification at no additional cost to the Owner.

### 1.5 DEFINITIONS

- A. Finished Spaces: Spaces other than mechanical and electrical equipment rooms, furred spaces, pipe and duct shafts, unheated spaces immediately below roof, spaces above ceilings, unexcavated spaces, crawlspaces, and tunnels.
- B. Exposed, Interior Installations: Exposed to view indoors. Examples include finished occupied spaces and mechanical equipment rooms.
- C. Exposed, Exterior Installations: Exposed to view outdoors or subject to outdoor ambient temperatures and weather conditions.

- D. Concealed, Interior Installations: Concealed from view and protected from physical contact by building occupants. Examples include above ceilings and in pipe shafts.
- E. Concealed, Exterior Installations: Concealed from view and protected from weather conditions and physical contact by building occupants but subject to outdoor ambient temperatures. Examples include installations within unheated shelters.
- F. The following are industry abbreviations for plastic materials:
  - 1. ABS: Acrylonitrile-butadiene-styrene plastic.
  - 2. CPVC: Chlorinated polyvinyl chloride plastic.
  - 3. PE: Polyethylene plastic.
  - 4. PVC: Polyvinyl chloride plastic.
- G. The following are industry abbreviations for rubber materials:
  - 1. EPDM: Ethylene-propylene-diene terpolymer rubber.
  - 2. NBR: Acrylonitrile-butadiene rubber.

#### 1.6 LOCAL CONDITIONS

- A. Before submitting proposals, each contractor shall examine these specifications and associated drawings, addenda, etc. and shall examine the site of the project. The bidder shall fully investigate the site of this project, investigate coordination of his work with all other trades and existing conditions and completely satisfy himself as to the conditions to which the work is to be performed before submitting his/her bid. No allowances or considerations will be given at a later date for alleged misunderstanding as to the requirements of the work, materials to be furnished, or conditions required by the nature of this project site and coordination by the neglect on the bidder's part to make such an examination and coordination.
- B. Drawings show approximate location of existing services. The mechanical and electrical trades shall check with local utility companies or municipal agencies for exact location of services which they expect to encounter. The Mechanical Trades Contractor shall be responsible for hiring a company such as "Miss Dig" to stake out and locate all utilities in areas of excavation before commencing any work. The Mechanical Trades Contractor shall verify all elevations and locations of existing underground lines which are to be connected into or routed over or under. This verification shall be done prior to beginning work at this project.

#### 1.7 QUALITY ASSURANCE

- A. All work shall be performed in accordance with all local and state codes, laws and regulations applicable to the work for this project. The contractor shall be responsible for all permits and costs for inspections, etc., and for checking with each utility company supplying service to this project and shall determine from them all, any changes in boxes, meters, valves, service, etc., and shall include all cost for inspections, revisions to services, etc. in his bid as required by local agencies, utilities, etc. No extra payment will be made for such items after the contractor submits his bid.

- B. In addition to all applicable Federal, State and local codes, the standards and codes listed below shall apply to all mechanical work. The reference to codes and standards shall be referenced to the latest edition or revision.
  - 1. American Gas Association (AGA)
  - 2. American National Standard Institute (ANSI)
  - 3. American Society of Mechanical Engineers (ASME)
  - 4. American Society for Testing materials (ASTM)
  - 5. American Water Works Association (AWWA)
  - 6. American Welding Society
  - 7. ANSI code of Pressure Piping and Unified Pressure Vessels
  - 8. Cast Iron Soil Pipe Institute
  - 9. National Electrical Manufacturer's Association (NEMA)
  - 10. Standards of the Hydraulic Institute
  - 11. Underwriters' Laboratories (UL)
  - 12. Williams-Steiger Occupational Safety & Health Act (OSHA)
- C. In the event of conflict between drawings, codes, standards or specifications, the most stringent requirement shall apply.

#### 1.8 SUBMITTALS AND SHOP DRAWINGS

- A. Submit electronic sets of complete shop drawings for all plumbing equipment and materials associated with Division 22 and associated drawings to the Architect/Engineer for review before fabrication of work or ordering of equipment. Shop drawings shall be submitted at the earliest possible time.
- B. Shop drawings shall be first reviewed by the contractor. Inaccurate shop drawings shall be corrected by the contractor to meet specifications and schedules for this project. The contractor shall then initial the shop drawings as having been reviewed before submitting to the Architect/Engineer. Shop drawings shall have, in addition to the mechanical information, the electrical requirements for minimum circuit amperes and maximum fuse size ratings of the equipment.
- C. Drawings which are rejected must be corrected and returned for Architect/Engineer review before ordering.
- D. Furnish to the job site copies or prints of shop drawings that have been reviewed by the Engineer as soon as possible.
- E. Include a copy of each shop drawing in the Operation and Maintenance Manual.
- F. The checking and reviewing of shop drawings by the Architect/Engineer shall be construed as assisting the contractor and the Architect/Engineer's action does not relieve the contractor from the responsibility for errors or omissions which may exist thereon. The contractor shall be held responsible for errors or omissions that are discovered after approval process and must be made good by the contractor.

#### 1.9 PERMITS, INSPECTIONS AND TESTS

- A. The Mechanical Trades Contractor shall take out all permits and arrange for necessary inspections and shall pay all assessments, fees and costs, etc., and

make all tests as required by applicable codes. At the completion of the project, the Mechanical Trades Contractor shall furnish certificates of inspection and approval and secure final occupancy permit. Record copies shall be included in the Operation and Maintenance manuals.

1.10 RECORD DRAWINGS

- A. Maintain an up-to-date set of "record" drawings showing actual equipment, plumbing piping, etc. installation locations. Exact dimensions from column lines for all concealed work and tie-ins with elevations noted shall be included.
- B. Include a set of reproducible drawings and a set of prints in each Operation and Maintenance Manual.
- C. The Engineer reserves the right to request and be furnished any additional information he deems necessary to be shown on the record drawings.

1.11 OWNER'S INSTRUCTIONS

- A. Upon completion of the project, the contractor shall be responsible for instructing the Owner's operating staff, in the presence of the Architect/Engineer's representative, in the proper operation and maintenance of the mechanical systems and equipment. Include a statement signed by the Owner that instructions have been given for proper operation and maintenance of the mechanical systems and equipment.

1.12 GUARANTEES

- A. Furnish a written guarantee, to the Architect/Engineer, that will make the contractor responsible at his own expense for any imperfections in material and/or workmanship which may develop under ordinary use within a period of one (1) year from final Owner's acceptance of the work.
- B. Furnish all written guarantees from equipment and/or material manufacturers which shall include the operating and performance conditions and capabilities upon which they are based.

1.13 PORTABLE AND DETACHABLE PARTS

- A. Retain all portable and detachable parts of installation such as keys, spare accessories, operating manuals, etc. include in the Operation and Maintenance Manual.

1.14 OPERATION AND MAINTENANCE MANUALS

- A. Furnish to the Architect/Engineer two (2) copies of an approved bound (3 ring binder) book with tabs for sections covering each item of equipment. These notebooks shall include shop drawings, maintenance manuals, operating manuals and parts lists to instruct the Owner on proper operation and use as well as maintenance for each piece of equipment. These books shall also include contractors', subcontractors' and manufacturers' names, telephone numbers and addresses.



- B. The manuals must be approved by the Architect/Engineer before final payment to the contractor. The Engineer reserves the right to request and be furnished any additional information that he deems necessary to be included in the manuals.

#### 1.15 RESPONSIBILITIES FOR USE OF SUBSTITUTE MATERIALS

- A. Contractor shall notify Architect/Engineer in writing at least ten (10) calendar days before bids are due for approval to use materials and/or equipment other than that which has been specified or scheduled. If substitute materials and/or equipment are approved and used, it will be this contractor's responsibility to guarantee that the items will function as the specified equipment or materials, will in no way alter the design of the structure or system, and will not require any additional mechanical work such as piping, plumbing, etc. Any additional cost required by substitute materials will be the responsibility of the contractor.
- B. It will be the contractor's responsibility, at his own expense, to remove or replace any non-approved equipment or material or any approved equipment or materials not originally specified or scheduled if equipment and materials do not meet with the satisfaction of the Architect/Engineer.
- C. It shall be the Contractor's (Mechanical Trades) responsibility to coordinate and pay for any Electrical Contractor costs due to any changes in substitute materials and/or equipment's power requirements, which differ from that shown on the design documents.
- D. No consideration will be given to requests for substitute materials because of delivery problems unless the contractor can prove that orders were placed as soon as possible after contract was awarded and that delays were not caused by submittal of unscheduled or unspecified (substituted) materials to the Architect/Engineer.

#### 1.16 COST BREAKDOWN AND EQUIPMENT LIST

- A. The successful bidder shall be responsible for submitting a cost breakdown to the Architect/Engineer and Owner within ten (10) calendar days after date of request of the breakdown. During progress of the work, if changes occur which cause additional cost, the price on such items shall be broken down in accordance with the items listed in the breakdown.
- B. The bidders shall be responsible for submitting a complete list of all equipment manufacturers, makes, models, etc. that will be used for this project with their proposal. The equipment list shall be typed on the contractor's letterhead and shall be signed by the authorized officer.

#### 1.17 MATERIALS AND EQUIPMENT

- A. Materials and equipment furnished under this project shall have a minimum warrantee of one (1) year. All materials and equipment shall be new, of first class quality and shall be furnished, delivered, erected, installed and finished in every detail and shall be so selected and arranged as to fit into the building space. All material or equipment that is not specified but necessary for this project shall be subject to the approval of the Architect/Engineer.

- B. Any materials or equipment not specified or scheduled but similar to that which has had prior approval shall be listed as a substitution and noted on the proposal form as such.
- C. The contractor shall include all miscellaneous materials and labor required to completely install and operate the plumbing systems as is intended by these drawings and specification.

1.18 SCHEDULE, COORDINATION AND INSTALLATION OF WORK

- A. The contractor shall carry on work in such a manner as to meet the dates as scheduled by the General Contractor and shall work overtime at no expense to the Owner as required to comply with the schedule. This contractor shall schedule all work with Owner and Architect/Engineer and schedule shut down of systems with Owner.
- B. Examine the site and all drawings and specifications and coordinate work with all other trades before commencing work for this project. Arrange work essentially as shown with the exact layout to be made on the job to suit actual conditions. Precise locations of equipment and materials shall be coordinated and shall be the responsibility of this contractor. Should any conflicts in location occur, and necessary deviations from drawings are required as determined by the Architect/Engineer, the contractor shall make necessary adjustments without additional cost to the Owner.
- C. All equipment, plumbing piping, etc. shall be located and/or routed to allow for the most convenient access for servicing.
- D. Arrange for necessary access doors, panels, etc. to allow servicing of equipment, piping, valves, etc. Perform any cutting and patching as required, made necessary by failure to make proper arrangements.
- E. Indicated equipment connections, sizes and locations shall be verified and connected according to manufacturer's shop drawings and installation instructions. Thoroughly investigate the space provided for equipment and connections before ordering equipment. All equipment shall be selected to fit into the space allowed, including connections with adequate space allowed for operation and maintenance.
- F. All work shall be installed in a neat and workmanlike manner, using skilled personnel thoroughly qualified in the trade or duties that they are to perform. Rough work will be rejected.
- G. Coordinate all equipment deliveries and schedules to allow timely installation. Contractor shall separate equipment into sections and reassemble in building if required by the installation at no extra cost to the Owner.
- H. Furnish a superintendent approved by the Architect/Engineer to oversee and coordinate the work to be performed with all other trades.
- I. Coordinate location of pipes, plumbing, etc. with other building components such as structural components (beams, joists, columns, etc.), electrical components

(lighting, conduits, etc.) and architectural components (walls, ceilings, floors, pipe chases, roof, etc.).

- J. Before starting work, Contractor shall verify that available space for proposed pipes, equipment etc. is adequate for the intended purpose and will result in a first class installation. Regardless of drawings, responsibility for first class operating systems rests with the Contractor.
- K. Arrange for chases, slots, openings, etc. and other building components to allow for plumbing systems installation. Coordinate cutting and patching of these components to accommodate installation. This contractor shall be responsible for accurately locating for the general trades all chases, shafts, etc. and shall be responsible for all cutting and patching if these chases were not accurate or not coordinated in time with the general trades. Coordinate installation of all sleeves in walls, floors or other structural or architectural components.
- L. Sequence, coordinate and integrate installation of equipment and materials for efficient work flow during the project. Particular attention should be spent on larger pieces of equipment.
- M. Install equipment and materials with provisions for necessary access for service and maintenance. Allow space for removal of all parts that may require replacement or servicing.
- N. Coordinate installation of required supporting devices and set sleeves in poured-in-place concrete and other structural components as they are constructed.
- O. Coordinate requirements for access panels and doors for mechanical items requiring access that are concealed behind finished surfaces. When access panels are required, valves and equipment components requiring access shall be located to minimize the number of panels.
- P. Examine the work as it progresses and alert the Architect/Engineer in writing of any instances or obstructions that will prevent this contractor from performing his/her work.
- Q. The Mechanical Trade shall be responsible for all coordination of all site utilities, the gas company, etc. including coordination of all new and existing natural gas loads.

#### 1.19 DELIVERY, STORAGE, AND HANDLING

- A. Deliver pipes and tubes with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe end damage and to prevent entrance of dirt, debris, and moisture.
- B. Store plastic pipes protected from direct sunlight. Support to prevent sagging and bending.
- C. Furnish and maintain a weatherproof storage facility on the site of adequate size to store miscellaneous equipment and/or materials to prevent exposure to the weather. Location of shed shall be determined by the Owner and

Architect/Engineer. The Owner reserves the right to deny storage of materials or equipment in any existing or new buildings.

1.20 COOPERATION WITH ARCHITECT/ENGINEER AND OTHERS

- A. Coordinate all aspects of the plumbing system installation with all other trades, existing conditions, etc.
- B. If the bidder believes that changes in design are required to meet intended design capacities and operation or material and/or equipment is obviously omitted from these specifications and drawings, the bidder shall contact the Architect/Engineer in writing at least ten (10) days before bid date. The acceptance of a bid by the Owner shall be binding and shall indicate that the bidder does not require any changes in design nor additional costs in order to meet the design and performance of the mechanical system as indicated in these specifications and drawings.

1.21 WORK INVOLVING OTHER TRADES

- A. Equipment or materials specified in Division 22 may have to be installed by other trades (such as electrical trades or architectural trades) due to code requirements or union jurisdictional requirements. Where this occurs, this contractor shall include all costs required by other trades to complete the work and hire the respective trade to perform this work.

1.22 PERFORMANCE DATA AND ACCESSIBILITY

- A. All performance data specified in this specification or scheduled on drawings shall be considered actual performance of the equipment after installation. The supplier and installer shall be responsible for suitable allowances to adjust equipment to design capacities when actual operating and installation conditions differ from drawings.
- B. All equipment and materials shall be installed to allow access for servicing and maintenance. Coordinate final location of such equipment and materials that are concealed with required access doors on panels. Allow ample space for replacement or servicing.

1.23 CUTTING AND PATCHING

- A. Unless noted otherwise, the Mechanical Trades shall be responsible for all cutting, patching and associated work required under Division 22. This work shall be performed by trades normally performing this type of work except drilling of holes shall be done by the contractor requiring same. This includes replacing areas of cutting required by this work with proper reinforcing, termite shielding, materials, finishing, etc. to restore the areas to their original condition, and filling all openings around ducts, piping, etc. with approved fire retardant materials. Regardless, all drilling of holes shall be the responsibility of the Contractor requiring same.
- B. If noted on drawings that the General Trades will be responsible for all cutting and patching, it will be the Mechanical Trades responsibility to notify all General

Trades during bidding of all areas requiring cutting and patching. Regardless, all drilling of holes shall be the responsibility of the contractor requiring same.

#### 1.24 WORK IN EXISTING BUILDINGS

- A. Coordinate and schedule all work in existing building with Owner and Architect/Engineer. Systems shall be kept in operation at all times if at all possible. If a system shut-down is required, the contractor shall schedule with the Owner, the time and length of shut-down. A system shall not be shut down without written permission from the Owner.
- B. All existing equipment, plumbing, piping, etc. that is to be removed shall remain the property of the Owner. The contractor shall remove and locate this material that remains the property of the Owner to a location determined by the Owner somewhere on site. If the Owner does not want to maintain possession of the removed material, the contractor shall be responsible for removing material from the site and disposing of this material as necessary to meet all codes and requirements and shall pay all costs as required for any disposal fees, inspections, permits, etc.
- C. All existing piping, equipment, etc. whether shown on drawings or not that is to be removed and/or abandoned and does not remain property of the Owner shall be removed from site.
- D. Any existing plumbing, piping, valves, mechanical equipment, etc. serving the existing building which are shown or not shown on drawings and are required for systems operation shall remain in use. If these systems require relocation to allow installation of new systems, the contractor shall be responsible for relocating to an Owner and Architect/Engineer approved location. The contractor shall pay all cost for this work and include such cost in his/her bid. (As specified previously, contractor shall be responsible for examining site and include all cost for work required to complete this project.)
- E. When active services, etc. are encountered in this project, the contractor shall furnish and install bracing, support, etc. as required to protect and keep these services active. (As specified previously, these drawings are diagrammatical. The contractor shall be responsible for verification of all existing services, piping, equipment, etc.).

#### 1.25 ACCESS TO EQUIPMENT, VALVES, ETC.

- A. Coordinate access panels with type of construction and furnish access panels in areas that are non-accessible. Access panels shall be furnished by this contractor and installed by the General Contractor. The access panels shall be all approved, UL labeled and fire rated and shall be located and sized to allow access to equipment, valves, etc.
- B. Where access panels are required, valves, equipment etc. shall be located as to require the least number of access panels.

#### 1.26 EQUIPMENT CONNECTIONS

- A. Connections to equipment, plumbing fixtures, etc. shall be made in accordance with shop drawings, rough-in dimensions furnished by the manufacturer, codes, etc. and may vary with connections shown on drawings. The contractor shall be responsible for making connections and number of connectors as per shop drawings, codes, etc. at no additional cost to the Owner.

#### 1.27 ELECTRICAL CONNECTIONS

- A. The Electrical Trades shall be responsible for furnishing and installing all electrical equipment, wiring, etc. required for operation of mechanical equipment unless otherwise noted on the drawings. The Mechanical Trades shall furnish detailed information and wiring diagrams to the Electrical Trades for all equipment specified and/or scheduled for this project. In the event that the Mechanical Trades furnishes an "approved equal" or "alternate" that require changes in the original electrical design, the Mechanical Trades shall pay all costs to the Electrical Trades as required to make satisfactory adjustments. All electrical work shall be done in accordance with the latest edition of the National Electric Code.

#### 1.28 EXCAVATION AND BACKFILLING

- A. Furnish all excavation, backfilling and removal of excess dirt to accomplish installation of Division 22 mechanical work unless otherwise noted on drawings.
- B. All excavation shall be by open cut from the surface. Contractor shall determine whether excavation shall be by machine or by hand except where existing utilities may be located where excavation shall be by hand. Contractor shall be responsible for all damage to existing facilities and services. Excavation shall be to a depth of at least 6" to allow granular bedding below pipe or duct.
- C. If for any reason the work is suspended, the contractor shall properly protect the excavation and leave the areas unobstructed.
- D. Trench width shall allow sufficient width at centerline of pipe to allow at all times a first class construction/installation method but in no case should be less than 12" larger than the nominal pipe or duct size. This shall especially be true in areas that joints must be connected. Joint holes may have to be made with overhanging sides to make installation safe for workmen.
- E. The excavation shall be at all times finished and backfilled to the required grade after completion and approval of work. Not more than 100 feet of trench shall be excavated and open unless written approval is given by the Architect/Engineer.
- F. The subgrade shall be 4" to 6" below the pipe of granular bedding graded and tamped by hand or mechanical means to the exact elevation required at the bottom of the pipe. Granular materials shall be approved fine aggregate meeting MDOT #2NS specifications. This material shall pass a 1/2" sieve but will be retained on a #4 sieve. If poor soil conditions exist which will not give proper support to the pipe, duct or structure, furnish granular fill as required to remedy this situation and give proper support.
- G. Furnish and install properly sloped sheet piling, shored and braced in areas that the soil requires this to maintain a proper excavation and prevent any movement of earth which could in any way damage the work under construction. When

removing the sheeting and bracing, special care should be taken to prevent any caving of the sides of the excavation and injury to the completed work or adjacent property.

- H. Take all necessary action to keep trenches and other excavation areas free from water at all times. Use such methods as pumping, ditching, well pointing, etc. to prevent water in trench or excavation. Dewatering of trench shall have constant supervision.
- I. Backfill excavation and trenches with approved granular material around sides of pipe and at least 12 inches above the top of the pipe laid not more than in 6 inch layers that are thoroughly tamped to 95% of its maximum density. There shall be no backfilling by any mechanical means until the granular material has been firmly tamped around the entire pipe to 12 inches above the pipe. All material used for backfilling shall be approved by the Architect/Engineer. Wherever trenching crosses walks or roadways or isolated inside of building, backfill top 6'-0" of trench with sand or bank run gravel in layers not to exceed 6 inches in depth and carefully compact by hand or machine. Do not backfill with frozen materials.
- J. No piping shall be covered until it has been tested, inspected and approved. Upon completion of backfilling, grade shall be restored in indicated elevation and left in reasonable condition for finish grade by others unless otherwise noted on drawings.
- K. Before final acceptance of work, all disturbed streets, drives, curbs, walks, parking areas, etc. shall be paved, graveled or other to as near their original condition as possible. All unused excavated material shall be removed from site if directed by the Architect/Engineer.

#### 1.30 BASES AND SUPPORTS

- A. This contractor shall be responsible for furnishing all equipment pads and supports for equipment and materials required by Division 22 unless otherwise noted on drawings.
- B. All floor mounted mechanical equipment shall have a reinforced concrete pad furnished unless otherwise noted on drawings. The concrete pads shall be tied to the building floor with expansion bolts located maximum of 4'-0" on centers with a minimum of four (4) bolts, set before pouring and concealed within the pad. The Mechanical Trades shall verify exact pad or support size with the equipment manufacturer and shall size pad with adequate area to allow sufficient room for equipment mounting hardware, etc. Concrete pads shall have a 45 degree bevel at the top edge. The contractor shall verify exact location of concrete pads.
- C. Furnish all steel, hanging material, rods, etc. for suspending equipment off floor unless otherwise noted on drawings for equipment to be furnished under Division 22. This includes all structural steel for supporting between beams.
- D. All support structure shall be of strength to safely withstand all stresses and loads to which they will be subjected and shall distribute load properly over the building area. Supports shall be designed to avoid undue strain to equipment

and to avoid interference with piping, pipe connections, service and maintenance clearances, etc.

- E. Where equipment is to be floor mounted and requires legs, this contractor shall furnish and install structural steel members or steel pipe and fittings for legs. Fasten and brace to equipment and furnish flange at base to allow bolting to floor.
- F. Where equipment is to be ceiling or wall mounted, furnish necessary platform, structural steel, hardware, etc. as is most suitable for support of this equipment.
- G. All supports shall be approved by the Architect/Engineer.
- H. All piping, plumbing, etc. shall be suspended from structural steel members utilizing rods and approved hanger devices. Do not use metal deck for support. Beam clamps such as the Grinnell Fig. 260 or approved equal shall be used. Sheet metal "straps" shall not be used in place of rods.
- I. The mechanical trades shall be responsible for furnishing and setting in place all mechanical equipment, roof curbs and plumbing, piping roof curbs. The general trade shall be responsible for the roof work and associated flashing. The mechanical trade shall furnish and install treated wood base blocking as required to level curb and to match roof insulation thickness. Curb shall be as specified, or if not specified should be similar to Pate or Thy-curb with heavy gauge galvanized steel, insulated and with wood nailer. Height of curb scheduled or specified shall be height required to top of curb above finished roof. If height is not specified or noted, a minimum 12" high above finished roof will be required. (pipe support units shall be at height required).

#### 1.29 SLEEVES, PLATES AND COLLARS

- A. Furnish all sleeves, plates and collars for plumbing piping, etc. passing through walls, floor ceilings, foundations, etc. Coordinate with the General Contractor the exact location and size of required openings. No pipe shall pass through a wall, floor ceiling, etc. without a sleeve. This contractor shall be responsible for sleeve locations and securing sleeves before concrete is formed.
- B. Sleeves for steel pipe shall be standard weight black steel pipe. For walls, foundations and ceilings, sleeve shall be kept flush with finished surfaces. For floors, the sleeve shall be set flush with bottom of concrete construction and be extended up ¼" above concrete floor. Sleeves shall be set in place before construction of walls, floors, ceilings, etc.
- C. Sleeves for copper pipe shall be type "M" hard copper tubing installed typical to that of steel pipe sleeves.
- D. Sleeves for piping shall be sized to allow insulation to run continuous through sleeve whenever possible and to allow not less than ¼" all around bare pipe or insulation.
- E. Where insulated piping passes through walls or floor sleeves, furnish 22 gauge galvanized band around insulation of same length as the sleeve length. Band



shall fit snugly over insulation and be held in place by steel metal collars all around insulation to cover openings.

- F. All penetration voids shall be sealed smoke tight with non-combustible materials similar to 3M or Hilti firestop systems to maintain the integrity of the fire rated structure. In a non-rated assembly, seal all voids with non-hardening sealant.
- G. Where bare piping 2" and smaller pass through wall or floors, furnish polished chrome plated brass escutcheons, split type. Bare piping 2½" and larger that pass through walls or floor, furnish 22 gauge galvanized steel metal collars so as to cover opening.
- H. Where piping penetrates an outside wall, below grade, utilize a mechanical sleeve, similar to Link-Seal, with stainless steel nuts and bolts on fasteners.

#### 1.30 RIGGING AND HOISTING

- A. Perform all required rigging, hoisting, transportation, moving, etc. of all equipment, materials, etc. to be furnished and/or installed under Division 22 whether furnished by this contractor or by the Owner or other trades.

#### 1.31 STORAGE FACILITY

- A. Furnish and maintain a weatherproof storage facility on the site of adequate size to store miscellaneous equipment and/or materials to prevent exposure to the weather. Location of shed shall be determined by the Owner and Architect/Engineer. The Owner reserves the right to deny storage of materials or equipment in any existing or new buildings.

#### 1.32 PROTECTION FROM DAMAGE

- A. The contractor shall be responsible for all materials, equipment, etc. and all work installed by himself and shall protect it from damage until final acceptance of this project by the Owner.
- B. Furnish all coverings and protection from dirt, dust, rain, storm, heat, traffic, wear, etc. and all possible injury including that by other workmen. Any equipment, workmanship, materials, etc. damaged prior to final acceptance by the Owner of this project shall be properly repaired at no expense to the Owner.
- C. Protect all plumbing fixtures and other equipment from damage by covering or coating. Any dented, scratched, rusted or marred surface finishes will not be accepted.
- D. Protect all equipment, materials, etc. from freezing.

#### 1.33 COMMON PIPE MATERIALS AND INSTALLATION INSTRUCTIONS

- A. Refer to individual Division 22 piping Sections for pipe, tube, and fitting materials and joining methods.
- B. Pipe Threads: ASME B1.20.1 for factory-threaded pipe and pipe fittings.

- C. Refer to individual Division 22 piping Sections for special joining materials not listed below.
1. Pipe-Flange Gasket Materials: Suitable for chemical and thermal conditions of piping system contents.
    - a. ASME B16.21, nonmetallic, flat, asbestos-free, 1/8-inch (3.2-mm) maximum thickness unless thickness or specific material is indicated.
      - 1) Full-Face Type: For flat-face, Class 125, cast-iron and cast-bronze flanges.
      - 2) Narrow-Face Type: For raised-face, Class 250, cast-iron and steel flanges.
    - b. AWWA C110, rubber, flat face, 1/8 inch thick, unless otherwise indicated; and full-face or ring type, unless otherwise indicated.
  2. Flange Bolts and Nuts: ASME B18.2.1, carbon steel, unless otherwise indicated.
  3. Plastic, Pipe-Flange Gasket, Bolts, and Nuts: Type and material recommended by piping system manufacturer, unless otherwise indicated.
  4. Solder Filler Metals: ASTM B 32, lead-free alloys. Include water-flushable flux according to ASTM B 813.
  5. Brazing Filler Metals: AWS A5.8, BCuP Series, copper-phosphorus alloys for general-duty brazing, unless otherwise indicated; and AWS A5.8, BAg1, silver alloy for refrigerant piping, unless otherwise indicated.
  6. Welding Filler Metals: Comply with AWS D10.12 for welding materials appropriate for wall thickness and chemical analysis of steel pipe being welded.
  7. Solvent Cements for Joining Plastic Piping:
    - a. ABS Piping: ASTM D 2235.
    - b. CPVC Piping: ASTM F 493.
    - c. PVC Piping: ASTM D 2564. Include primer according to ASTM F 656.
    - d. PVC to ABS Piping Transition: ASTM D 3138.
  8. Fiberglass Pipe Adhesive: As furnished or recommended by pipe manufacturer.

1.34 PIPE HANGERS AND SUPPORTS

- A. Hangers and saddles shall be Modern Pipe Support Corp., Grinnel/Anvil, Autogrip, or M-CO. Inserts shall be of the type to receive a machine bolt head or nut after installation, permit horizontal adjustment, and shall be flush with the surface. For copper pipe with steel hangers, clean and wrap pipe with two layers of plastic insulating tape at point of contact. Roller supports shall be adjustable type with insulated standoff. Rods shall be used for suspended installation. Sheet metal "straps" shall not be used in place of rods.
- B. Hangers for piping with vapor barrier sealed insulation shall be multipurpose pipe saddles fitting over the insulation. Wire or perforated strap iron will not be permitted for pipe supports. Do not support hangers from roof deck. Furnish and install all support steel as required to suspend from structural steel joist or beams. Hangers shall be clevis or split ring type with vertical adjustment and beam clamp similar to Grinnell/Anvil Fig. 260, with maximum spacing per ASHRAE Standards:

Pipe Size	Steel Pipe	Copper Pipe	PVC Pipe	Rod Size
½ to ¾ inch	6 feet	5 feet	4 feet	3/8"

1 inch	7 feet	5 feet	4 feet	3/8"
1 ¼ inch	7 feet	7 feet	4 feet	3/8"
1½ inch	7 feet	7 feet	4 feet	1/2"
2 inch	10 feet	8 feet	4 feet	1/2"
2½ inch	11 feet	9 feet	4 feet	5/8"
3 inch	11 feet	9 feet	4 feet	5/8"
3 ½ inch	13 feet	11 feet	4 feet	5/8"
4 inch	14 feet	12 feet	4 feet	3/4"
5 inch	14 feet	12 feet	4 feet	3/4"
6 inch	14 feet	--	4 feet	3/4"
8 inch	16 feet	--	4 feet	7/8"
10 inch	16 feet	--	4 feet	7/8"
12 inch	20 feet	--	4 feet	1"

- C. Conform to ASME B31.9, ASTM F708, MSS SP58, MSS SP69 and MSS SP89.
- D. Hangers for Pipe Sizes ½ to 1½ Inch: Malleable iron, adjustable swivel, split ring.
- E. Hangers for Pipe Sizes 2 Inches and Over: Carbon steel, adjustable, clevis.
- F. Hangers for Hot Pipe Sizes thru 4 Inches: Carbon steel, adjustable, clevis.
- G. Hangers for Hot Pipe Sizes 5 Inches and Over: Adjustable steel yoke, cast iron roll, double hanger.
- H. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods.
- I. Wall Support for Pipe Sizes up thru 3 Inches: Cast iron hook.
- J. Wall Support for Pipe Sizes 4 Inches and Over: Welded steel bracket and wrought steel clamp.
- K. Vertical Support: Steel riser unistrut clamps at high, mid, and low locations.
- L. Floor Support for Cold Pipe all sizes and Hot Pipe Sizes up thru 4 Inches: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
- M. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.
- N. Hanger Rods: Mild steel threaded both ends, threaded one end, or continuous threaded.
- O. Inserts: Malleable iron case of steel shell and expander plug for threaded connection with lateral adjustments, top slot for reinforcing rods, lugs for attaching to forms, size inserts to suit threaded hanger rods.

#### 1.35 PLUMBING, PIPING, AND EQUIPMENT SUPPORT

- A. Attachments of mechanical equipment to structural members are the responsibility of the installing trade. Structural members shall not be field cut, welded or otherwise modified without approval of the Architect/Engineer.

Attachment to steel joist shall be made at panel points. When routing piping or ductwork perpendicular to joist, a support shall be provided at every steel joist; when parallel to joist, a support shall be provided at no more than 6' on centers or two panel bays. Structural members shall not be overloaded as a result of attachments. Attachment/equipment loading for all trades resulting in total load greater than an equivalent uniform 5 psf for any member shall be submitted to the Architect/Engineer for review. Mechanical Trades may contact the project Structural Engineer as required for panel point location assistance and welder certification requirements. Electrical Trades are still responsible for design, layout, and fabrication and installation of electrical supports and support attachment methods. Mechanical Trades shall submit attachment methods to the Structural Engineer for review.

- B. Install products in accordance with manufacturer's instructions.
- C. Do not fasten supports to pipes, ducts, mechanical equipment, and conduit.
- D. Do not use spring steel clips and clamps.
- E. Do not use powder-actuated anchors.
- F. Do not drill or cut structural members without permission from Architect/Engineer.
- G. Fabricate supports from structural steel or steel channel. Rigidly weld members or use hexagon head bolts to present neat appearance with adequate strength and rigidity. Use spring lock washers under all nuts.

#### 1.36 PIPING SYSTEMS SHUT OFF VALVES

- A. Shut off valves shall be installed at all branch lines off main piping, or where mains divide/separate to serve different areas, to allow isolation of all branch piping and systems they serve such as toilet rooms, areas or wings of the building, etc.

#### 1.37 CLEANING AND FINISHING

- A. During construction period, remove all debris, rubbish, tools, equipment, unused materials, etc. as required or requested by the Architect/Engineer. All cost for cleanup and removal will be the responsibility of the contractor.
- B. Upon completion of the project and before final acceptance by the Owner, the entire installation shall be thoroughly cleaned, all rubbish and unused material removed to the satisfaction of the Architect/Engineer. All dust and dirt shall be removed from all equipment, piping, ductwork, etc.
- C. Thoroughly clean all floor drains, cleanouts, and plumbing fixtures. Clean all trays and strainers.
- D. Finish paint all equipment, materials, piping, etc. as noted on drawings or listed in this specification. Match Owner's existing color scheme. Any Division 22 equipment which has been scratched or damaged shall be finished equal to the original finish.

1.38 EQUIPMENT/SYSTEMS START-UP

- A. Furnish and schedule manufacturer's start-up service for all equipment and systems. These start-up services shall be performed in the presence of, and to the satisfaction of the Owner and Architect/Engineer.

1.39 EQUIPMENT/SYSTEMS SIGN-OFF

- A. The Mechanical Trades shall furnish written sign-offs on all systems stating that the equipment and systems have been checked, tested, started and that their operation has been verified correct through the entire range of operation that can be expected through the seasons.

1.40 SUBSTANTIAL COMPLETION

- A. Contractor shall submit a letter to the Architect/Engineer advising that all work has been completed in accordance with plans and specifications and the project is ready for a final walk-thru.

END OF SECTION

MAI: 2024-1527

SECTION 22 05 10

PLUMBING SYSTEMS TESTING, CLEANING, WATER TREATMENT & STARTUP

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Testing of piping systems.
- B. Cleaning of piping systems.
- C. Chemical treatment.
- D. Substantial completion check list and sign-off forms.

1.2 RELATED SECTIONS

- A. All drawings and specification sections apply to work in this section. Furnish all items, articles, materials, equipment, operations or methods that are mentioned, listed or scheduled on drawings or are in this specification including all labor, equipment, materials and miscellaneous incidentals necessary and/or required for the completion of this project. The work covered under this section of the specifications is in no way complete within itself, but is supplementary to the entire specification and drawings.

1.3 SCOPE OF WORK

- A. The work covered by this specification consists of furnishing all labor, equipment, material, chemicals or methods that are mentioned, listed or scheduled on drawings or are in this specification. This includes all labor, equipment, materials and miscellaneous incidentals necessary and/or required for the cleaning, flushing, testing and chemical treatment of the piping systems for this project. The work covered under this section of the specification is in no way complete within itself, but is supplementary to the entire specification and drawings.
- B. The substantial completion forms shall be required to be signed and submitted to the Architect/Engineer for approval prior to any insulation of piping systems or installation of ceiling tiles. The person that signs the substantial completion forms shall witness the testing, flushing and chemical treatment of the systems. The signature person's company shall be responsible for all cost incurred with future work by the Architect/Engineer or Owner due to inadequate testing, cleaning, operation or chemical treatment of the piping systems.

1.4 SUBMITTALS

- A. Submit electronic copies of the completed and signed substantial completion forms included in this section. Submit to the Architect/Engineer as system flushing, testing, and chemical treatment occurs. The Mechanical Trade shall maintain one set of substantial completion forms and submit them to the Architect/Engineer prior to the Architect/Engineer final project walk-through.

- B. Submit electronic copies of all equipment, chemicals and product data being furnished to this project for approval.
- C. Submit electronic copies of manufacturer's installation instructions, including placement of equipment in systems, piping configuration, and connection requirements.
- D. Submit certificate of compliance from authority having jurisdiction, indicating approval of systems that require review by local and state authorities.

1.5 PROJECT RECORD DOCUMENTS

- A. Record actual installation locations of piping and equipment including sampling points and location of chemical injectors.

1.6 REGULATORY REQUIREMENTS

- A. Conform to applicable code for addition of non-potable chemicals to building mechanical systems, and for public sewage systems.
- B. Products requiring electrical connection and listed and classified by UL as suitable for the purpose specified and indicated.

1.7 MAINTENANCE SERVICE

- A. Furnish service and maintenance of treatment systems and system water for one year from date of substantial completion.
- B. Provide monthly technical service visits to perform field inspections and make water analysis on site. Detail findings in writing on proper practices, chemical treating requirements, and corrective actions needed. Submit two copies of field service report to Owner after each visit.
- C. Provide laboratory and technical assistance services during this maintenance period.
- D. Provide training course for Owner's personnel, instructing them on installation, care, maintenance, testing, and operation of the water treatment systems. Arrange course at startup of systems.
- E. Provide on-site inspections of equipment during scheduled or emergency shutdown to properly evaluate success of water treatment program, and make recommendations in writing based on these inspections.

1.8 MAINTENANCE MATERIALS

- A. Provide sufficient chemicals for treatment and testing during warranty period.

PART 2 PRODUCTS

2.1 WATER METER

- A. Displacement type cold water meter with sealed, tamper-proof magnetic drive, impulse contact register, single pole, double throw dry contact switch.

### PART 3 - EXECUTION

#### 3.1 SANITARY AND STORM PIPING SYSTEMS

- A. Testing
  - 1. Conduct a water, air or peppermint test on the entire system in accordance with the State Plumbing Code. Test underground sanitary, storm and vent piping with at least a 10 foot head of water.

#### 3.2 DOMESTIC COLD WATER, HOT WATER & HOT WATER RETURN PIPING SYSTEMS

- A. Testing
  - 1. Before any fixtures are connected, hydrostatically test piping system at 1.5 times the maximum system pressure, but not less than 100 psig in excess of working pressure for (4) hours. This pressure to be on piping only, not equipment.
- B. Cleaning, flushing and disinfection.
  - 1. All domestic water piping and equipment shall be completely flushed out and disinfected before placing system in service. Disinfection procedure and results shall be in accordance with all applicable codes and State Department of Public Health. (Piping shall be flushed until water is clear).
  - 2. Ensure pH of water to be used as treatment is between 7.4 and 7.6 by adding alkali (caustic soda or soda ash) or Acid (hydrochloric).
  - 3. Inject disinfectant, free chlorine in liquid, powder, tablet or gas form, throughout system to obtain 50 to 80 mg/L (50ppm) minimum residual.
  - 4. Bleed water from outlets to ensure distribution and test for disinfectant residual at minimum 15 percent of outlets.
  - 5. Maintain disinfectant in system for 2 hours.
  - 6. If final disinfectant residual tests less than 25 mg/L, repeat test.
  - 7. Flush disinfectant from system until residual equal to that of incoming water or 1.0 mg/L or 0.5 ppm maximum.
  - 8. Take samples no sooner than 24 hours after flushing, from 10 percent of outlets and water entry, and analyze in accordance with AWWA-C51.
  - 9. Verify that all tests and results are in accordance with local and state health codes and regulations.

#### 3.3 SYSTEM COMPLETION CHECKLIST

- A. The checklist which follows this specification section is to be considered part of the specifications.
- B. The checklist is to be completed by the Installing Contractor and the prime Mechanical Contractor for each item as directed.

END OF SECTION



BAY CITY PUBLIC SCHOOLS- 2020 BOND PROJECTS SERIES 3  
TOILET ROOM RENOVATIONS FOR BAY CITY WESTERN MS / HS  
BAY CITY, MICHIGAN

PROJECT NO. 2019113.33

MAI: 2024-1527

SYSTEMS COMPLETION CHECKLIST						
Inspection/Review Item	Notice Required	Installing Contractor		Date	Owner's Representative Signature	Remarks
		Name	Signature			
<b>Plumbing Systems</b>						
Testing of Sanitary and Storm Systems	48 hours					Tested per specification
Testing of Domestic CW, HW and HWR Piping.	48 hours					Tested per specification
Disinfection of Domestic CW, HW & HWR Piping.	48 hours					Disinfect per specification and all applicable codes.
Domestic Water Sample and Approval	When submitted					Submit sample for review and approval by local authorities.
Natural Gas Piping	7 days					Tested per specifications.
Domestic water heater system, completely installed, checked, tested and started	7 days					Verify system installation complete, operation correct. Includes verification of hot water recirculating pump system and flow balance. Check, test and startup by Manufacturer's Rep.
Valving	When completed					Verify that valves have been installed at all branch piping locations
Piping and Fitting Insulation	When Completed					Verify all piping and fitting are insulated per specification.
Reduced Pressure	48 hours					Verify Reduced Pressure Backflow

By signing this form, the Contractor is certifying that he has personally witnessed completion of that item, and it is complete and complies with all respects to the drawings and specifications.

All items are to be signed off on and submitted to MacMillan Associates Inc. before a final project walk-thru by the Engineer is requested. If the Engineer discovers items incomplete and/or not in accordance with this checklist, the drawings, or the specifications, the Contractor will be backcharged for the Engineer's time and expenses.

Backflow Preventer Tested						Preventer installed and completely operational.
Sump Pumps and Sewage Ejectors	48 hours					Verify system installation complete and operational.

SYSTEMS COMPLETION CHECKLIST						
Inspection/Review Item	Notice Required	Installing Contractor		Date	Owner's Representative Signature	Remarks
		Name	Signature			
<b>Plumbing Systems, Continued</b>						
Pipe Labeling and Valve Tagging Identification	When completed					Verify system identification is complete per specification and valve chart submitted.
Owner's Training	7 days					Verify that Owner has been instructed on operation and maintenance of systems.

By signing this form, the Contractor is certifying that he has personally witnessed completion of that item, and it is complete and complies with all respects to the drawings and specifications.

All items are to be signed off on and submitted to MacMillan Associates Inc. before a final project walk-thru by the Engineer is requested. If the Engineer discovers items incomplete and/or not in accordance with this checklist, the drawings, or the specifications, the Contractor will be backcharged for the Engineer's time and expenses.

SECTION 22 05 53

PLUMBING SYSTEM IDENTIFICATION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Nameplates.
- B. Tags.
- C. Stencils.
- D. Pipe Markers.

1.2 PRODUCTS INSTALLED BUT NOT FURNISHED UNDER THIS SECTION

- A. Medical Gas Systems: Supply of pipe labels for placement by this Section.

1.3 REFERENCES: Material and/or equipment specified in this section shall meet or exceed one or more of the property requirements or installation requirements of the following specifications/publications as applicable to the specific product or end use:

- A. ANSI or equal standards for the Identification of Piping Systems.

1.4 SUBMITTALS

- A. Submit list of working, symbols, letter size, and color coding for mechanical identification.
- B. Submit valve chart and schedule, including valve tag number, location, function, and valve manufacturer's name and model number.
- C. Product Data: Provide manufacturers catalog literature for each product required.
- D. Manufacturer's Installation Instructions: Indicate special procedures, and installation.

PART 2 PRODUCTS

2.1 NAMEPLATES

- A. Description: Laminated three-layer plastic with engraved black letters on light contrasting background color. Furnish and install on all mechanical equipment.

2.2 TAGS

- A. Metal Tags: Brass with stamped letters; tag size minimum 1½ inch diameter with smooth edges.
- B. Chart: Typewritten letter size list in anodized aluminum frame.

## 2.3 STENCILS

- A. Stencils: With clean cut symbols and letters of following size:
  - 1.  $\frac{3}{4}$  to  $1\frac{1}{4}$  inch Outside Diameter of Insulation or Pipe: 8 inch long color field,  $\frac{1}{2}$  inch high letters.
  - 2.  $1\frac{1}{2}$  to 2 inch Outside Diameter of Insulation or Pipe: 8 inch long color field,  $\frac{3}{4}$  inch high letters.
  - 3.  $2\frac{1}{2}$  to 6 inch Outside Diameter of Insulation or Pipe: 12 inch long color field,  $1\frac{1}{4}$  inch high letters.
  - 4. 8 to 10 inch Outside Diameter of Insulation or Pipe: 24 inch long color field,  $2\frac{1}{2}$  inch high letters.
  - 5. Over 10 inch Outside Diameter of Insulation or Pipe: 32 inch long color field,  $3\frac{1}{2}$  inch high letters.
  - 6. Ductwork and Equipment:  $2\frac{1}{2}$  inch high letters.
- B. Stencil Paint shall be semi-gloss enamel, colors conforming to ASME A13.1.

## 2.4 PIPE MARKERS

- A. Color: Match existing or conform to ANSI/OSHA standards.
- B. Plastic Pipe Markers: Factory fabricated, flexible, semi-rigid plastic, preformed to fit around pipe or pipe covering; minimum information indicating flow direction arrow and identification of fluid being conveyed.
- C. Plastic Tape Pipe Markers: Flexible, vinyl film tape with pressure sensitive adhesive backing and printed markings.
- D. Underground Plastic Pipe Markers: Bright colored continuously printed plastic ribbon tape, minimum 6 inches wide by 4 mil thick, manufactured for direct burial service.

## 2.5 CEILING TACKS

- A. Description: Steel with  $\frac{3}{4}$  inch diameter color coded head.
- B. Color code as follows:
  - 1. Green - Plumbing valves

## PART 3 EXECUTION

### 3.1 PREPARATION

- A. Degrease and clean surfaces to receive adhesive for identification materials.
- B. Prepare surfaces as required by manufacturer's installations for stencil painting.

### 3.2 INSTALLATION

- A. Install plastic nameplates with corrosive-resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.
- B. Install tags with corrosion resistant chain.
- C. Install plastic pipe markers in accordance with manufacturer's instructions.
- D. Install plastic tape pipe markers complete around pipe in accordance with manufacturer's instructions.
- E. Install underground plastic pipe markers 6 to 8 inches below finished grade, directly above buried pipe.
- F. Identify each piece of equipment with plastic nameplates. Small devices, such as in-line pumps, may be identified with tags.
- G. Identify valves in main and branch piping with tags.
- H. Identify piping, concealed or exposed, with plastic tape pipe markers or stenciled painting. Identify service, flow direction, and pressure. Install in clear view and align with axis of piping. Locate identification not to exceed 10 feet on straight runs including risers and drops, adjacent to each valve and tee, at each side of penetration of structure or enclosure, and at each obstruction.
- I. Provide ceiling tacks to locate valves above T-bar type panel ceilings. Locate in corner of panel closest to equipment.

END OF SECTION

MAI: 2024-1527

SECTION 22 06 00

PLUMBING SPECIALTIES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. General information for piping systems, plumbing fixtures, backflow preventers, water heaters, sump and sewage pumps, etc. and general installation information.

1.2 FIELD MEASUREMENTS

- A. Field verify all equipment and fixture locations.
- B. Confirm that mill work is constructed with adequate provisions for the installation of countertop plumbing fixtures.
- C. Confirm all mounting heights and locations of plumbing fixtures to meet all barrier free and American Disabilities Act codes and regulations.

1.3 EQUIPMENT, FIXTURE & MISCELLANEOUS SPECIFICATIONS

- A. All equipment, plumbing fixtures, specialties, etc. that have been scheduled on drawings shall have the manufacturer's specification automatically included as part of this specification. All "approved substitute" or "voluntary alternate" equipment fixtures, etc. shall meet the capacities, quality, etc. of the scheduled items specification and capacities.

PART 2 PRODUCTS

2.1 PIPE AND PIPE FITTINGS

- A. See Section 22 10 00 for Plumbing Piping.

2.2 MATERIALS AND FINISH

- A. Fixtures shall be of best quality vitreous china, acid resisting enameled cast iron or stainless steel, free from discoloration, chips, dents, warps, flaws, cracks, scratches, etc. or other blemishes. All vitreous china and enamel shall be white unless otherwise noted. Fixtures shall have manufacturer's guarantee label or trademark indicating first quality.
- B. All exposed pipe, fittings, traps, wastes, faucets, valves, handles, escutcheons, bolts, screws and accessories shall be polished chrome plated brass unless noted otherwise. Exposed traps shall be chrome plated brass, adjustable with cleanout plug and escutcheon.

2.3 PLUMBING FIXTURES - GENERAL

- A. Furnish all fixtures as shown and scheduled on drawings.

- B. Unless noted as “no substitutions”, similar fixtures by the following manufacturers with equal or better qualities will be accepted as equal for:
  - 1. Drainage Specialties - Josam, Sioux Chief, Smith, Wade, Watts, Zurn
  - 2. Plumbing Fixtures - American Standard, Bradley, Crane, Elkay, Fiat, Florestone, Just, Kohler, Mansfield, Moen Commercial, ProFlo, Sloan, Stern-Williams, Zurn.
  - 3. Plumbing Specialties - Schier, Watts, Wilkins, Zurn.
  - 4. Flush Valves - Delany, Delta, Sloan (Royal), Zurn, American Standard.
  - 5. Faucets - American Standard, Chicago, Delta, Sloan, T & S, Woodford, Zurn.
  - 6. Toilet Seats - Bemis, Centoco, Church, Olsonite, Kohler.
  - 7. Mixing Valves and Accessories - Powers, Symmons, Watts, Zurn, Reliance, Conbraco Appollo.
    - a. See 2.22 (this section) for emergency showers and eyewash stations.
  - 8. Electric Water Coolers and Drinking Fountains: Elkay, Halsey Taylor, Haws, Oasis.
- C. Provide all chair carriers, mounting hardware, etc. as required by the plumbing fixtures and wall construction. Where fixtures are located on walls, furnish and install suitable steel shapes well anchored in place and supported from floor as necessary to support fixtures. Each fixture shall be supported solidly and shall be sufficiently strong to withstand severe usage.
- D. Where plumbing fixtures occur in walls with pipe spaces in back of same, the supports for fixtures shall consist of chair carriers built into the wall with bolt projecting through face of wall for attachments of fixture brackets.

#### 2.4 BACKFLOW PREVENTER

- A. Furnish and install type and quantity as shown on drawings or required by code. The Mechanical Trades shall furnish certification of all backflow preventers.
- B. Reduced Pressure Backflow Preventers: ANSI/ASSE 1013 and AWWA C506; bronze body with bronze and plastic internal parts and stainless steel springs; two independently operating, spring loaded check valves; diaphragm type differential pressure relief valve located between check valves; third check valve which opens under back pressure in case of diaphragm failure; non-threaded vent outlet; assembled with two gate valves, strainer and four test cocks.
- C. Double Check Valve Assemblies: ANSI/ASSE 1012 and AWWA C506; Bronze body with corrosion resistant internal parts and stainless steel springs; two independently operating check valves with intermediate atmospheric vent.

#### 2.5 WATER HAMMER ARRESTORS

- A. Furnish and install on systems as required by local and state plumbing codes, latest edition.
- B. ANSI A112.26.1; sized in accordance with PDI WH-201, precharged suitable for operation in temperature range -100 to 300 degrees F and maximum 250 psig working pressure.



PART 3 EXECUTION

3.1 PREPARATION

- A. Coordinate cutting and forming of roof and floor construction to receive drains to required invert and rim elevations.
- B. Coordinate all rough-in and/or final connections to equipment and plumbing fixtures. Plumbing fixtures shall be located as required to meet all barrier free and American Disabilities Act codes and regulations.
- C. Coordinate all piping invert elevations, location, routing, etc. to allow proper drainage from all plumbing fixtures to sewer mains. Verify all services existing and new for elevations, locations, etc. before commencing installation.

3.2 FIXTURE CONNECTIONS

- A. In general, unless otherwise noted on the drawings, the sizes of all the branch connections to fixtures shall be no smaller than those listed in the following schedule and as required by local and state plumbing codes, latest edition:

Fixture	Waste	Vent	C.W.	H.W.
Lavatory	1¼"	1¼"	½"	½"
Sinks (General)	1½"	1½"	½"	½"
Janitor's Service Sink	3"	2"	½"	½"
Water Closet-Flush Valve	4"	2"	1¼"	---
Urinal-Flush Valve	2"	2"	1"	---
Wall Hydrants (Hose Bibb)	---	---	¾"	---
Drinking Fountain	1½"	1½"	½"	---
Showers	2"	2"	¾"	¾"

3.3 INSTALLATION

- A. Plumbing fixtures and trim shall be protected against damage during construction. Fixtures damaged during this period shall be replaced.
- B. All valves, waste and water supply piping servicing fixtures exposed beyond face of finished walls shall be brass, nickel, and chromium plated. Where fixtures are mounted in countertops and cabinet work concealing valves and piping, chrome plated brass finishes are not required.
- C. All fixtures shall be independently valved with either integral stops or brass stops.
- D. Waste connections to floor or wall outlet fixtures shall be gas and water-tight; fastened with an approved setting compound, gasket or washer. Rubber gaskets or putty are not acceptable. The fixture shall be set the proper distance from the wall or floor.
- E. Where flush valves are specified with fixtures, supply to valve in each room shall be set at same height for that type of fixture, and valve shall be set in place so that center line of valve discharge is directly above center line of fixture spud.

- Bending of nipple between valve and spud to achieve connection will not be permitted.
- F. All brackets, cleats, plates, anchors, etc. required to support fixtures or piping rigidly in place shall be provided as work of this section and shall be installed behind finished walls.
  - G. Provide and install basic fixtures from one major fixture manufacturer. Also, accessories such as faucets, strainers, stops, traps, etc. shall be manufactured by one major company where possible.
  - H. All fixtures shall be set rigid, tight, plumb, level and true to assure rigidity and permanence. Provide chair carriers as manufactured by Wade, Josam, Zurn, or J.R. Smith for wall mounted fixtures. Carriers for wall mounted lavatories, drinking fountains, water coolers, and urinals shall have dual foot supports, tubular uprights, adjustable headers, alignment trusses, and all necessary accessories. Lavatory carriers shall be with concealed arms. Urinal carriers shall be with bearing plate. Water cooler and drinking fountain carriers shall be as required for proper support.
  - I. All wall mounted fixtures shall be tested by bearing the weight of 500 pounds without sagging or pulling away from the wall. Damage resulting from this test shall be made good by this contractor. All other piping and fixtures shall be secured to walls with wall plates, wall hangers and approved expansion shields and bolts.
  - J. Connections between earthenware fixtures and soil pipe flanges shall be made gas and water tight with closet setting compound or approved Neoprene gas-kets, without use of putty. Hold down bolts shall be brass, not less than ¼" in diameter, and shall be equipped with nuts and washers.
  - K. Provide each fixture with an approved compression service stop. Exposed stops shall be either loose key or screwdriver type.
  - L. Caulk joint between wall and fixture at wall mounted lavatories, water closets, urinals, drinking fountains and service sinks with Silicone Sealant, white.
  - M. Conductors:
    - 1. All inside conductors, except as otherwise specified, shall be caulked water tight and supported so as to provide for contraction, expansion and settlement of the building.
    - 2. All connections between outlet at roof drains and conductors shall be made and caulked watertight. Install all inside conductors and cooperate with the roofing contractor to properly install connections to the roof drains.
  - N. Cleanouts:
    - 1. All soil, waste and drain pipes shall have cleanout at foot of stacks, outside near wall where line leaves building, at every change in the direction of run, at upper end of all horizontal runs, at intervals of not more than 100'-0" in straight runs of sanitary sewers and as required by code. All outlets shall be accessible so that drain line may be readily cleaned with a snake or other rodding tool. Extend cleanouts to finished floor or finished wall.
  - O. Floor Drains

1. Floor drain pans shall be furnished and installed for all floor drains (except when floor drain is located in floors on fill) and be made of lead sheets weighting 4 lbs. per square foot or of an approved material, extending a minimum of 12" beyond lip of the flashing ring with outer edges turned up. All floor drains, floor sinks, etc. shall have deep traps installed.
  2. All fixtures shall be trapped if required by local or state plumbing codes.
  3. All trap seals that are subject to loss by evaporation shall have a trap seal primer valve installed as required by Local or State Plumbing Codes. A trap seal primer valve shall conform to ASSE 1018 or ASSE 1044.
- P. Flashings: Vent pipe flashings shall be by roofing contractor. Provide lead sleeves for vents.
- Q. Pipe relief from backflow preventer to nearest drain.
- R. Install water hammer arrestors as required by Code, complete with means for access if so required by the Plumbing Inspector.
- S. Cold water supply branch to each toilet room shall be provided with shock absorbers designed and sized as recommended by the manufacturer to eliminate water hammer.
- T. All exposed supplies and valves in finished areas shall be brass chrome plated. Supply lines to all hanging fixtures shall be from the wall, unless otherwise noted on drawings.
- U. Install shutoff valves on all branches. All water supplies to fixtures shall have valve on supply line to the fixture.
- V. All plumbing fixtures shall be installed, vented, piped, trapped, etc. in accordance with all codes and regulations pertaining to this projects location.
- W. Provide access to all thermostatic mixing valves and trap primer valves. If necessary, provide flush mounted stainless steel valve box with hinged cover and key lock.
- X. All fixtures supplied for bathing shall be supplied with a temperature control valve that conforms to ASSE 1016. All fixtures for hand washing shall be supplied with a temperature control valve that conforms to ASSE 1070.

END OF SECTION

MAI: 2024-1527

SECTION 22 07 00

PLUMBING PIPE INSULATION

PART 1 GENERAL

1.1 SECTION INCLUDES PIPE INSULATION FOR:

- A. Domestic water piping system including cold water, hot water and hot water return.
- B. Valves and fittings.
- C. Miscellaneous.

1.2 REFERENCES

- A. Thermal insulation materials shall meet the property requirements of the following specifications as applicable to the specific product or end use:
- B. American Society for Testing of Materials Specifications:
  - 1. ASTM C547, "Standard Specification for Mineral Fiber Preformed Pipe Insulation"
  - 2. ASTM C533, "Standard Specification for Calcium Silicate Pipe & Block Insulation"
  - 3. ASTM C585, "Recommended Practice for Inner and Outer Diameters of Rigid Pipe Insulation for Nominal Sizes of Pipe and Tubing (NPS System)"
  - 4. ASTM C1136, "Standard Specification for Barrier Material, Vapor," Type 1 or 2 (jacket only)
- C. Insulation materials, including all water and vapor barrier materials, closures, hangers, supports, fitting covers, and other accessories, shall be furnished and installed in strict accordance with project drawings, plans, and specifications.

1.3 SCOPE

- A. The work covered by this specification consists of furnishing all labor, equipment, materials and accessories, and performing all operations required, for the correct fabrication and installation of thermal insulation applied to the following commercial piping systems, in accordance with the applicable project specifications and drawings, subject to the terms and conditions of the contract:
  - 1. Hot Piping - Piping system with fluids 105°F and higher.
  - 2. Cold Piping - Piping systems with fluids below 105°F. (Includes storm water systems)
- B. Insulation, vapor barriers, jacketing, hangers, supports, accessory materials, etc. shall be installed according to manufacturers recommendations.

1.4 DEFINITIONS

- A. The term "mineral fiber" as defined by the above specifications includes fibers manufactured of glass, rock, or slag processed from a molten state, with or without binder.

## 1.5 SYSTEM PERFORMANCE

- A. Insulation material furnished and installed hereunder shall meet the minimum thickness requirements of Standard 90.1 (12007), "Energy Efficient Design of new Buildings" of the American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) except minimum thickness shall be 1". However, if other factors such as condensation control or personnel protection are to be considered, the selection of the thickness of insulation should satisfy the controlling factor.
- B. Insulation materials furnished and installed hereunder shall be Class A maximum of 25 flame spread, 35 fuel contributed and 50 smoke developed rating and shall meet the fire hazard requirements of each of the following specifications:
  - 1. American Society for Testing of Materials ASTM E84
  - 2. Underwriters' Laboratories, Inc. UL 723
  - 3. National Fire Protection Associations NFPA 255
- C. Calcium silicate products shall include a visual identification system to permit positive field determination of their asbestos-free characteristic.

## 1.6 QUALITY ASSURANCE

- A. The contractor shall use whatever means are necessary to protect the insulation materials and accessories before, during and after installation. No insulation material shall be installed that has become damaged in any way. The contractor shall also use all means necessary to protect work and materials installed by other trades.
- B. If any insulation material has become wet because of transit or job site exposure to moisture or water, the contractor shall not install such material, and shall remove it from the job site. An exception may be allowed in cases where the contractor is able to demonstrate that wet insulation when fully dried out (either before installation, or afterward following exposure to system operating temperatures) will provide installed performance that is equivalent in all respects to new, completely dry insulation. In such cases, consult the insulation manufacturer for technical assistance.

## PART 2 PRODUCTS

### 2.1 PIPE INSULATION ON INDOOR SYSTEMS

- A. Molded pipe insulation shall be manufactured to meet ASTM C585 for sizes required in the particular system.
- B. Molded fibrous glass pipe insulation shall comply with the requirements of ASTM C547. Heavy density Fiberglas pipe insulation with factory applied all-service jacket (ASJ) and Doublesure\* two-component adhesive closure system, or Fiberglas Pipe and Tank Insulation, heavy density fiberglass insulation with end grain adhered to ASJ all service jacket. Joints shall be sealed by butt strips having a two-component sealing system or by applying staples and pressure sensitive tape. When self-sealing lap systems are used, sufficient thickness of insulation shall be used to maintain the outer surface temperature of the operating system below +150°F. Manufacturer's data regarding

thickness constraints in relation to operating temperature shall be followed. When multiple layers are required, all inner layer(s) shall beunjacketed.

- C. Fittings and valves shall be insulated with preformed fiberglass fittings, fabricated sections of fiberglass pipe insulation, fiberglass pipe and tank insulation, fiberglass blanket insulation, or insulating cement. Thickness shall be equal to adjacent pipe insulation. Finish shall match that used on straight sections.
- D. Flanges, couplings, chilled water pump impeller housings, valve bonnets etc, shall be covered with an oversized pipe insulation section sized to provide the same insulation thickness as on the main pipe section. An oversized insulation section shall be used to form a collar between the two insulation sections with sections of insulation being used to fill gaps. Jacketing shall match that used on straight pipe sections. Rough cut ends shall be coated with a suitable vapor resistant mastic.
- E. On cold systems, vapor barrier performance is extremely important. Particular care must be given to vapor sealing the fitting cover or finish to the pipe insulation vapor barrier. Valve stems shall be sealed with caulking to allow free movement of the stem but provide a seal against moisture incursion. All penetrations of the ASJ and exposed ends of insulation shall be sealed with vapor barrier mastic.
- F. On hot systems where fittings are to be left exposed, insulation ends should be beveled away from bolts for easy access.
- G. All insulated, exposed piping inside the building within 8'-0" above the floor shall be additionally jacketed with a multi-ply, fabric reinforced, self adhesive insulation cladding material with a vapor barrier and a thickness of 0.015". Jacketing system shall be Venture Clad Plus #1579CW-E or equal.

## 2.2 SUPPORT FOR PIPE WITH INSULATION

- A. All piping shall be supported in such a manner that neither the insulation nor the vapor/weather barrier is compromised by the hanger or the effects of the hanger. In all cases, hanger spacing shall be such that butt joints may be made outside the hanger.
  - 1. On all size piping of cold systems, the pipe hanger saddles shall be separated away from the pipe by utilizing inserts. The vapor barrier shall be continuous, including material covered by the hanger saddle.
  - 2. On warm water piping systems 3" in diameter or less, insulated with Fiberglas insulation, may be supported by placing saddles of the proper length and spacing, as designated in Owens-Corning Pub. 1-IN-12534, under the insulation.
  - 3. For hot or cold piping systems larger than 3" in diameter, Owens-Corning Calcium Silicate pipe insulation shall be used for high density inserts. Piping saddles for piping larger than 3" shall not be in contact with the piping.
  - 4. Owens-Corning Calcium Silicate pipe insulation may be used to support the entire weight of the piping system provided the hanger saddle is designed so the maximum compressive load does not exceed 100 psi.

5. Where pipe shoes and roller supports are required, insulation shall be inserted in the pipe shoe to minimize pipe heat loss. Where possible, the pipe shoe shall be sized to be flush with the outer pipe insulation diameter.
6. Thermal expansion and contraction of the piping and insulation system can generally be taken care of by utilizing double layers of insulation and staggering both longitudinal and circumferential joints. Where long runs are encountered, expansion joints may be required where single layers of the insulation are being used.
7. On vertical runs, insulation support rings shall be used.

### 2.3 ACCESSORY MATERIALS

- A. Accessory materials installed as part of insulation work under this section shall include (but not be limited to):
  1. Closure Materials - Butt strips, bands, wires, staples, mastics, adhesives; pressure-sensitive tapes.
  2. Field-applied jacketing materials - Sheet metal, plastic, canvas, fiberglass cloth, insulating cement; PVC fitting covers.
  3. Support materials - Hanger straps, hanger rods, saddles.
- B. All accessory materials shall be installed in accordance with project drawings and specifications, manufacturer's instructions, and/or in conformance with the current edition of the Midwest Insulation Contractors Association (MICA) "Commercial & Industrial Insulation Standards".

### 2.4 INSULATION THICKNESSES

- A. Fittings, including valves, flanges, unions, etc. shall be insulated with the same thickness as the required pipe insulation and covered with PVC fitting cover as specified.
- B. Pipe insulation thickness shall be as follows unless noted otherwise on drawings:

<u>Piping System</u>	<u>Pipe Size</u>	<u>Insulation Thickness</u>	<u>Insulation Conductivity BTU-in H-FT<sup>2</sup>-F</u>
Domestic cold water	All sizes	1"	0.28
Domestic hot water and hot water return (140°F and under)	Up thru 1¼ " 1½" and larger	1" 1½"	0.28

Domestic hot water and Hot water return (140°F to 200°F)	Up to 1¼" 1½" and larger	1 ½" 2"	0.28
---	-----------------------------	------------	------

### PART 3 EXECUTION

#### 3.1 SITE INSPECTION

- A. Before starting work under this section, carefully inspect the site and installed work of other trades and verify that such work is complete to the point where installation of materials and accessories under this section can begin.
- B. Verify that all materials and accessories can be installed in accordance with project drawings and specifications and material manufacturers' recommendations.
- C. Verify by inspecting product labeling, submittal data, and/or certifications which may accompany the shipments that all materials and accessories to be installed on the project may comply with applicable specifications and standards and meet specified thermal and physical properties.

#### 3.2 PREPARATION

- A. Ensure that all pipe and fitting surfaces over which insulation is to be installed are clean and dry.
- B. Ensure that insulation is clean, dry, and in good mechanical condition with all factory-applied vapor or weather barriers intact and undamaged. Wet, dirty, or damaged insulation shall not be acceptable for installation. All damaged insulation installed will be removed and replaced by the Contractor at no extra cost to the Owner.
- C. Ensure that pressure testing of piping and fittings has been completed prior to installing insulation.

#### 3.3 INSTALLATION

- A. General
  - 1. Install all insulation materials and accessories in accordance with manufacturer's published instructions and recognized industry practices to ensure that it will serve its intended purpose.
  - 2. Install insulation on piping subsequent to installation of heat tracing, painting, testing, and acceptance tests.
  - 3. Install insulation materials with smooth and even surfaces. Insulate each continuous run of piping with full-length units of insulation, with single cut piece to complete run. Do not use cut pieces or scraps abutting each other. Butt insulation joints firmly to ensure complete, tight fit overall piping surfaces.
  - 4. Maintain the integrity of factory-applied vapor barrier jacketing on all pipe insulation, protecting it against puncture, tears or other damage. All staples



used on cold pipe insulation shall be coated with suitable sealant to maintain vapor barrier integrity.

B. Fittings

1. Cover valves, fittings, and similar items in each piping system using one of the following:
  - a. Mitered sections of insulation equivalent in thickness and composition to that installed on straight pipe runs.
  - b. Insulation cement equal in thickness to the adjoining insulation.
  - c. PVC fitting covers insulated with material equal in thickness and composition to adjoining insulation.

C. Penetrations

1. Extend piping insulation without interruption through walls, floors, and similar piping penetrations, except where otherwise specified.

D. Joints

1. Butt pipe insulation against hanger inserts. For hot pipes, apply 3" wide vapor barrier tape or band over butt joints. For cold piping apply wet coat of vapor barrier lap cement on butt joints, and seal joints with 3" wide vapor barrier tape or band.
2. All pipe insulation ends shall be tapered and sealed, regardless of service.

3.4 FIELD QUALITY ASSURANCE

- A. Upon completion of all insulation work covered by this specification, visually inspect the work and verify that it has been correctly installed. This may be done while work is in progress, to assure compliance with requirements herein to cover and protect insulation materials during installation.

3.5 PROTECTION

- A. Replace damaged insulation which cannot be satisfactorily repaired, including insulation with vapor barrier damage and moisture-saturated insulation.
- B. The insulation contractor shall advise the general and/or the mechanical contractor as to requirements for protection of the insulation work during the remainder of the construction period, to avoid damage and deterioration of the finished insulation work.

3.6 SAFETY PRECAUTIONS

- A. Insulation contractor's employees shall be properly protected during installation of all insulation. Protection shall include proper attire when handling and applying insulation materials, and shall include (but not be limited to) disposable dust respirators, gloves, hard hats, and eye protection.
- B. The insulation contractor shall conduct all job site operations in compliance with applicable provisions of the Occupational Safety and Health Act, as well as with all state and/or local safety and health codes and regulations that may apply to the work.

3.7 ASBESTOS INSULATION

- A. Any existing asbestos insulation on existing piping, valves, equipment, etc. where tie-ins are required, shall be removed by the Owner at Owner's expense. The contractor and Architect/Engineer shall not be responsible for any cost or work involved with removal or encapsulation of asbestos insulation.

END OF SECTION

MAI: 2024-1527

SECTION 22 10 00

PLUMBING PIPING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Domestic water piping system
- B. Natural gas piping system.
- C. Valves.
- D. Acid waste and vent piping (plastic)
- E. Above ground acid waste drain and vent piping system (glass)
- F. Underground acid waste drain and vent piping system (glass)

1.2 REFERENCES: Material and/or equipment specified in this section shall meet or exceed one or more of the property requirements or installation requirements of the following specifications/publications as applicable to the specific product or end use:

- A. ANSI B31.1 - Power Piping.
- B. ANSI B31.2 - Fuel Gas Piping.
- C. ANSI B31.4 - Liquid Petroleum Transportation Piping Systems.
- D. ANSI B31.9 - Building Service Piping.
- E. ASME - Boiler and Pressure Vessel Code.
- F. ASME Sec. 9 - Welding and Brazing Qualifications.
- G. ASME B16.1 - Cast Iron Pipe Flanges and Flanged Fittings Class 25, 125, 250 and 800.
- H. ASME B16.3 - Malleable Iron Threaded Fittings.
- I. ASME B16.4 - Cast Iron Threaded Fittings Class 125 and 250.
- J. ASME B16.18 - Cast Bronze Solder-Joint Pressure Fittings.
- K. ASME B16.22 - Wrought Copper and Bronze Solder-Joint Pressure Fittings
- L. ASME B16.23 - Cast Copper Alloy Solder-Joint Drainage Fittings - DWV.
- M. ASME B16.26 - Cast Bronze Fittings for Flared Copper Tubes.

- N. ASME B16.29 - Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings - DWV.
- O. ASTM A47 - Ferritic Malleable Iron Castings.
- P. ASTM A53 - Pipe, Steel, Black and Hot-Dipped Zinc Coated, Welded.
- Q. ASTM A74 - Cast Iron Soil Pipe and Fittings.
- R. ASTM A106 - Carbon Steel Seamless Pipe.
- S. ASTM A234 - Pipe Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and Elevated Temperatures.
- T. ASTM A536 - Ductile Iron Castings.
- U. ASTM B32 - Solder Metal.
- V. ASTM B42 - Seamless Copper Pipe.
- W. ASTM B43 - Seamless Red Brass Pipe.
- X. ASTM B75 - Seamless Copper Tube.
- Y. ASTM B88 - Seamless Copper Water Tube.
- Z. ASTM B251 - Wrought Seamless Copper and Copper-Alloy Tube.
- AA. ASTM B302 - Threadless Copper Pipe (TP).
- BB. ASTM B306 - Copper Drainage Tube (DWV).
- CC. ASTM C14 - Concrete Sewer, Storm Drain, and Culvert Pipe.
- DD. ASTM C425 - Compression Joints for Vitrified Clay Pipe and Fittings.
- EE. ASTM C443 - Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets.
- FF. ASTM C564 - Rubber Gaskets for Cast Iron Soil Pipe and Fittings.
- GG. ASTM C700 - Vitrified Clay Pipe, Extra Strength, Standard Strength, and Perforated.
- HH. ASTM D1785 - Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
- II. ASTM D2235 - Solvent Cement for Acrylonitrile - Butadiene - Styrene (ABS) Plastic Pipe and Fittings.
- JJ. ASTM D2241 - Poly (Vinyl Chloride) (PVC) Plastic Pipe (SDR-PR).
- KK. ASTM D2466 - Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40.

- LL. ASTM D2513 - Thermoplastic Gas Pressure Pipe, Tubing and Fittings.
- MM. ASTM D2564 - Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings.
- NN. ASTM D2680 - Acrylonitrile-Butadiene-Styrene (ABS) Composite-Sewer Piping.
- OO. ASTM D2683 - Socket-Type Polyethylene Fillings for Outside Diameter-Controlled Polyethylene Pipe.
- PP. ASTM D2729 - Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
- QQ. ASTM D2751 - Acrylonitrile-Butadiene-Styrene (ABS) Sewer Pipe and Fittings.
- RR. ASTM D2846 - Chlorinated Polyvinyl Chloride (CPVC) Pipe, Fittings, Solvent Cements and Adhesives for Potable Hot Water Systems.
- SS. ASTM D2855 - Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings.
- TT. ASTM D3033 - Type PSP Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
- UU. ASTM D3034 - Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
- VV. ASTM D3309 - Polybutylene (PB) Plastic Hot Water Distribution System.
- WW. ASTM F477 - Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
- XX. ASTM F493 - Solvent Cements for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe and Fittings.
- YY. ASTM F891, Schedule 40 Cellular Core PVC-DWV Pipe.
- ZZ. AWS A5.8 - Brazing Filler Metal.
- AAA. AWWA C105 - Polyethylene Encasement for Ductile Iron Piping for Water and Other Liquids.
- BBB. AWWA C110 - Ductile - Iron and Gray - Iron Fittings 3 in. through 48 in., for Water and Other Liquids.
- CCC. AWWA C111- Rubber-Gasket Joints for Ductile Iron and Gray-Iron Pressure Pipe and Fittings.
- DDD. AWWA C151 - Ductile-Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water or Other Liquids.
- EEE. AWWA C606 - Grooved and Shouldered Joints.
- FFF. AWWA C651 - Disinfecting Water Mains.
- GGG. CISPI 301 - Cast Iron Soil Pipe and Fittings for Hubless Cast Iron Sanitary Systems.

HHH. CISPI 310 - Joints for Hubless Cast Iron Sanitary Systems.

III. CAN-3 B281 - Aluminum Drain, Waste, and Vent Pipe and Components.

JJJ. NCPWB - Procedure Specifications for Pipe Welding.

KKK. NFPA 54 - National Fuel Gas Code.

LLL. NFPA 58 - Storage and Handling of Liquefied Petroleum Gases.

### 1.3 QUALITY ASSURANCE

- A. Valves: Manufacturer's name and pressure rating marked on valve body.
- B. Welding Materials and Procedures: Conform to ASME Code and applicable state labor regulations.
- C. Welders Certification: In accordance with ASME Sec 9.
- D. All grooved joint couplings, fittings, valves, and specialties shall be the products of a single manufacturer. Grooving tools shall be of the same manufacturer as the grooved components.
- E. All castings used for coupling housings, fittings, valve bodies, etc. shall be date stamped for quality assurance and traceability.

### 1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site.
- B. Accept valves on site in shipping containers with labeling in place. Inspect for damage.
- C. Provide temporary protective coating on cast iron and steel valves.
- D. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.
- E. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

## PART 2 PRODUCTS

### 2.1 SANITARY, STORM AND VENT SEWER PIPING, BURIED WITHIN 5 FEET OF BUILDING (Must be approved by governing authorities)

- A. Gravity Cast Iron Pipe: ASTM A74 service weight.
  - 1. Fittings: Cast iron.
  - 2. Joints: Hub-and-spigot, CISPI HSN compression type with ASTM C564 neoprene gaskets.

- B. Gravity Cast Iron Pipe: CISPI 301, hubless, service weight
    - 1. Fittings: Cast iron.
    - 2. Joints: ASTM C564, neoprene gasket system.
  - C. Gravity Schedule 40 PVC Pipe: ASTM D2729 and ASTM F891 DWV non-pressure cellular core.
    - 1. Fittings: PVC.
    - 2. Joints: ASTM D2855, solvent weld with ASTM D2564 solvent cement.
  - D. Gravity 10" and larger. Schedule 40 PVC gravity sewer pipe with integral bell and spigot joints.
    - 1. Fittings: PVC
    - 2. Joints: ASTM D3212 flexible elastomeric seals.
  - E. Forced PVC Pipe:
    - 1. 4" and Larger - ASTM D2241, DR18-Class 150 AWWA C900.
    - 2. Fittings: ASTM D2466 PVC
    - 3. Joints: ASTM D3139, integral bell and gasket seal installed with concrete thrust block or ASTM D2855, solvent weld with ASTM D2564 solvent cement.
- 2.2 SANITARY, STORM AND VENT PIPING, ABOVE GRADE (Must be approved by governing authorities)
- A. Gravity Cast Iron Pipe: ASTM A74, service weight.
    - 1. Fittings: Cast iron.
    - 2. Joints: ASTM C564, hub and spigot, neoprene gasket system.
  - B. Gravity Cast Iron Pipe: CISPI 301, hubless, service weight.
    - 1. Fittings: Cast iron.
    - 2. Joints: Neoprene gaskets and stainless steel clamp-and-shield assemblies.
  - C. Gravity Steel Pipe: ASTM A53 Schedule 40, galvanized.
    - 1. Cast Iron Fittings: ASME B16.1, flanges and fittings; ASME B16.4, screwed fittings.
    - 2. Malleable Iron Fittings: ASME B16.3, screwed type. ASTM A47.
    - 3. Ductile Iron Fittings: Grooved end, ASTM A536.
    - 4. Mechanical Grooved Couplings: Ductile iron, galvanized. (as specified for Forced Drains)
  - D. PVC Pipe: ASTM D2729 (when approved by the Architect/Engineer).
    - 1. Fittings: PVC.
    - 2. Joints: ASTM D2855, solvent weld with ASTM D2564 solvent cement.
  - E. CPVC Pipe: ASTM D2846 (When approved by the Architect/Engineer).
    - 1. Fittings: ASTM D2846, CPVC
    - 2. Joints: ASTM D2846, solvent weld with ASTM F493 solvent cement.
  - F. Forced larger than 3": Steel Pipe: ASTM A53, Schedule 40, galvanized.
    - 1. Fittings: Galvanized steel.
    - 2. Joints: Grooved mechanical couplings.

3. IPS Grooved Piping System.
  - a. Victaulic mechanical pipe couplings, fitting, valves and other grooved components may be used as an option to welding, threading or flanged methods. All grooved components shall be of one manufacturer and shall conform to local code approval and/or as listed by ANSI B31.1, B31.9, ASME UL/FM IAPMO or BOC. Grooved end product manufacturer to be ISO-9001 certified.
  - b. Roll or cut grooved ends as appropriate to pipe material, wall thickness, pressures, size and method of joining. Pipe ends shall be grooved in accordance with manufacturer's current listed standards conforming to ANSI/AWWA C-606.
  - c. Mechanical couplings shall be Victaulic style 107H "Installation-Ready" or approved manufacturer, rigid coupling. Victaulic style 177 "Installation-Ready", and style 77 or 75 or equal coupling shall be used where system flexibility is desired at pumps and other mechanical equipment to reduce noise and vibration. Noise and vibration reduction is achieved by installing (3) style 77 or 75 or equal flexible couplings near the vibration source. Couplings shall be of cast ductile iron conforming to ASTM A536, grade 65-45-12.

2.3 DOMESTIC WATER PIPING, BURIED BEYOND 5 FEET OF BUILDING (Must be approved by governing authorities)

- A. Ductile Iron Pipe: ANSI/AAWWA C151/A21.51 rated 350 psi with Class 350 fittings.
  1. ANSI thickness Class 50 minimum, nominal pipe wall thickness .27" minimum, rated 350 psi at laying condition Type 1.
  2. Cement lined as per AWWA C104 (ANSI A21.4)
  3. Pipe Joints: Push on, ANSI/AWWA C1533/A21.53, with Tyton gaskets.
  4. Fitting Joints: Mechanical, compact, ANSI/AWWA C153/A21.53, with stainless steel or Corten anti-rotation bolts and sacrificial zinc anode cap on each bolt.
  5. Coating: Exterior of pipe and fittings, asphaltic coating as per ANSI/AWWA.
  6. Polyethylene encasement as per ANSI/AWWA C105/A21.5.
  7. Concrete thrust blocks, installation, etc. as per published engineering and construction standards of Michigan Department of Transportation and local codes.
  8. All material and installation shall be in accordance with manufacturer's recommendations.
- B. Copper Tubing: 2" and smaller - ASTM B88, Type K soft temper.
  1. Fittings: ASME B16.18 cast bronze or ASME B16.22 wrought copper and bronze.
  2. Joints: AWS A5.8, BCuP silver braze if allowed by code, otherwise ASTM B32 solder, lead free Grade 95-5 tin-antimony or tin-silver, with melting range of 430 to 535 degrees F.
- C. Polyethylene Pipe 1½" or smaller
  1. Pipe - Polyethylene (PE) flexible plastic, ASTM D2239 rated 160 psi minimum.
  2. Fittings - PE barbed insert fittings.



3. Joints - Stainless steel clamps over barbed insert fittings.

D. PVC Pipe:

1. 2½" and 3" - ASTM D2241, SDR 21 - Class 200 AWWA C900.
2. 4" and Larger - ASTM D2241, DR18-Class 150 AWWA C900.
3. Fittings: ASTM D2466, PVC
4. Joints: ASTM D3139, integral bell and gasket seal installed with concrete thrust block or ASTM D2855, solvent weld with ASTM D2564 solvent cement.

2.4 SANITARY FORCE MAIN PIPING, BURIED WITHIN 5 FEET OF BUILDING

A. Ductile Iron Pipe: AWWA C151. Bituminous outside coating AWWA C151. Cement Mortar Lining AWWA C104.

1. Pipe Thickness Class: 50
2. Pipe Pressure Rating: 350 psi minimum for 8" through 12", 250 psi minimum for 14" and larger.
3. Fittings: Ductile iron, standard size, AWWA C110; compact size, AWWA C153.
  - a. Coating: Bituminous Coating, AWWA C110.
  - b. Lining: Cement Mortar Lining, AWWA C104.
4. Joints: Tied restrained joints.
5. Concrete thrust blocks, installation, etc. as per published Engineering and Construction Standards of Michigan Department of Transportation, and local codes.

2.5 DOMESTIC WATER PIPING, BURIED WITHIN 5 FEET OF BUILDING (Must be approved by governing authorities)

A. Ductile Iron Pipe: ANSI/AAWWA C151/A21.51 rated 350 psi. with Class 350 fittings.

1. ANSI thickness Class 50 minimum, nominal pipe wall thickness .27" minimum, rated 350 psi at laying condition Type 1.
2. Cement lined as per AWWA C104 (ANSI A21.4)
3. Pipe Joints: Push on, ANSI/AWWA C1533/A21.53, with Tyton gaskets.
4. Fitting Joints: Mechanical, compact, ANSI/AWWA C153/A21.53, with stainless steel or Corten anti-rotation bolts and sacrificial zinc anode cap on each bolt.
5. Coating: Exterior of pipe and fittings, asphaltic coating as per ANSI/AWWA.
6. Polyethylene encasement as per ANSI/AWWA C105/A21.5.
7. Concrete thrust blocks, installation, etc. as per published engineering and construction standards of Michigan Department of Transportation and local codes.
8. All material and installation shall be in accordance with manufacturers recommendations.

B. Copper Tubing: 2" and smaller - ASTM B88, Type K, soft temper.

1. Fittings: ASME B16.18 cast bronze or ASME B16.22 wrought copper and bronze.
2. Joints: AWS A5.8, BCuP silver braze.

3. No joints shall be located under floor unless standard pipe lengths are not long enough for the entire length of bury, then joints shall be kept to a minimum.

C. PVC Pipe

1. 3" - ASTM D2241, SDR 21- Class 200 AWWA C900.
2. 4" thru 12" - ASTM D2241, DR18 - Class 150, DR18 - AWWA C900.
3. Fittings ASTM D2466, PVC.
4. Joints: ASTM D2855, solvent weld with ASTM D2564 solvent cement.

2.6 DOMESTIC WATER PIPING, ABOVE GRADE INSIDE BUILDING (Must be approved by governing authorities)

A. Domestic water piping 6" and smaller shall be: Copper tubing: ASTM B88, Type L, hard drawn, seamless.

1. Fittings: ASME B16.18 cast bronze tee tap or ASME B16.22 wrought copper and bronze.
2. Fittings 1-1/2" and smaller: ASME B16.18 cast bronze or ASME B16.22 wrought copper, with 301 stainless steel internal components, EPDM seals, and push-to-connect ends. Victaulic Permalynx.
3. Joints: ASTM B32, solder, lead free Grade 95-A tin - antimony or tin and silver with melting range 430 to 535 degrees F or AWS A5BcuP silver braze.
4. Fittings 2" and smaller: At the Contractor's option, Schedule 10S stainless steel pipe with Vic-Press 304 fittings and couplings may be used in lieu of soldered copper. The seal material shall be UL classified in accordance with ANSI/NSF61 for Potable Water service.
5. Joints 2" thru 8" may be mechanical pipe couplings of a bolted type with a central cavity design pressure-responsive gasket along with grooved end copper or bronze fittings as available, as manufactured by Victaulic.
  - a. Copper Tube, ASTM B-88 (Type K or L) - Roll grooved only, at copper-tube dimensions. (Flaring to accommodate alternate sized couplings is not permitted).
  - b. Mechanical Couplings - Shall be Victaulic Style 607H "Installation-Ready" rigid couplings for copper consisting of a ductile iron cast housing, with offsetting angle-pattern bolt pads, a synthetic rubber gasket of a central cavity pressure-responsive design, with ASTM A449 plated nuts and bolts to secure unit together.
  - c. Coupling Housings - Shall be cast of ductile iron conforming to ASTM A-536 (Grade 65-45-12), with a copper colored enamel paint coating.
  - d. Gaskets - Shall be molded of synthetic rubber in a Flush-Seal configuration conforming to the copper tube size (CTS) outside diameter and coupling housing, of elastomers having properties as designated in ASTM D-2000. Reference shall always be made to the latest published Selection Guide for Gaskets for proper gasket selection for the intended service.
  - e. Water Service - Gasket supplied for water services from -30°F to +230°F Grade "E" EPDM compound molded of materials conforming to ASTM D-2000, designation 2CA615A25B24F17Z, recommended for hot water service within the specified temperature range, plus a variety of dilute acids, oil-free air, and many chemical services. Not recommended for petroleum services.

- 1) Gaskets supplied with Style 607H couplings shall be grade EHP for water services from -30°F to +250°F.
  - 2) Gaskets shall be UL classified in accordance with ANSI/NSF61 for Potable Water service.
  - 3) Meets the low lead requirements of NSF-372.
  - f. Flange Adapters - Shall be Victaulic Style 641 Vic-Flange or equal adapters 2"-6", ductile iron ASTM A-536, engaging directly into roll grooved copper tube and fittings and bolting directly to ANSI Class 125 cast iron and Class 150 steel flanged components; installer to supply standard flange bolts. Flange casting shall have a corresponding gasket.
  - g. Fittings - Fittings shall be full flow (smooth turn elbows) copper fittings conforming with ASME B16.22 or cast bronze to ASME B16.18; with grooves designed to accept grooved end couplings at copper-tube dimensions. (Flaring to accommodate alternate sized couplings is not permitted). Victaulic Copper-Connection.
- B. Domestic water piping larger than 6" shall be: Steel pipe: ASTM A53, Schedule 40, galvanized.
1. Fittings: Galvanized steel.
  2. Joints: Grooved mechanical couplings.
  3. IPS Grooved Piping System
    - a. Victaulic mechanical pipe couplings, fitting, valves and other grooved components may be used as an option to welding, threading or flanged methods. All grooved components shall be of one manufacturer and shall conform to local code approval and/or as listed by ANSI B31.1, B 31.9, ASME, UL/FM IAPMO or BOC. Grooved end product manufacturer to be ISO-9001 certified.
    - b. Roll or cut grooved ends as appropriate to pipe material, wall thickness, pressures, size and method of joining. Pipe ends shall be grooved in accordance with manufacturer's current listed standards conforming to ANSI/AWWA C-606.
    - c. Mechanical couplings shall be Victaulic style 107H "Installation Ready" or 07 (zero-flex) or equal, rigid coupling or style HP-70 or equal rigid coupling for high pressure service. Victaulic style 177 "Installation Ready" and style 77 or 75 or equal coupling shall be used where system flexibility is desired at pumps and other mechanical equipment to reduce noise and vibration. Noise and vibration reduction is achieved by installing (3) style 77 or 75 or equal flexible couplings near the vibration source. Couplings shall be of cast ductile iron conforming to ASTM A536, grade 65-45-12.
    - d. Mechanical reducing couplings shall be Victaulic style 750 or equal for pipe runs for reduction on pipe sizes 4" thru 8".
    - e. Meets the low lead requirements of NSF-372.

## 2.7 PIPE HANGERS AND SUPPORTS

- A. Refer to Section 22 05 00.

## 2.8 FLANGES, UNIONS, AND COUPLINGS

- A. Pipe Size 2 Inches and Under:
1. Ferrous pipe: 150 psig malleable iron threaded unions.

2. Copper tube and pipe: 150 psig bronze unions with soldered joints. (Solder shall be lead free.)
- B. Pipe Size Over 2 Inches:
1. Ferrous pipe: 150 psig forged steel slip-on flanges; 1/16 inch thick preformed neoprene gaskets.
  2. Copper tube and pipe: 150 psig slip-on bronze flanges; 1/16 inch thick preformed neoprene gaskets.
- C. Grooved and Shouldered Pipe End Couplings:
1. Unions and flanges for servicing and disconnect are not required in installations using grooved joint couplings. (The couplings shall serve as disconnect points.)
  2. Housing: Two ductile iron clamps to engage and lock, designed to permit some angular deflection, contraction, and expansion where required; electroplated steel bolts, nuts, and washers conforming with ASTM A449; galvanized for galvanized pipe.
  3. Sealing gasket: "C" shape or FlushSeal composition sealing gasket.
  4. Gaskets shall be UL classified in accordance with ANSI/NSF-61 for Potable water service.
  5. Basis of Design: Victaulic Company, Style 607H (Installation-Ready for Copper Tubing) and Style 107H or 177 (Installation-Ready for Steel Piping).
- D. Dielectric Connections: Dielectric nipples shall be non-conducting for connection of dissimilar materials. Dielectric nipples shall be similar to Victaulic Style 647 or Style 47. A brass adapter dielectric union is not acceptable.

## 2.9 GATE VALVES

- A. Up to and including 3 Inches: Bronze body, bronze trim, non-rising stem, handwheel, inside screw, single wedge or disc, solder or threaded ends.
- B. Over 3 Inches: Iron body, bronze trim, rising stem, handwheel, OS&Y, single wedge, flanged or grooved ends. Basis of Design: Victaulic Series 771V.

## 2.10 GLOBE VALVES

- A. Up to and including 3 Inches: Bronze body, bronze trim, rising stem, handwheel, inside screw, renewable composition disc, solder or screwed ends, with back seating capacity (repackable under pressure).
- B. Over 3 Inches: Iron body, bronze trim, rising stem, handwheel, OS&Y, plug-type disc, flanged ends, renewable seat and disc.

## 2.11 BALL VALVES

- A. Up to and including 3 Inches:
1. Bronze one piece body, stainless steel ball, Teflon seats and stuffing box ring, lever handle and balancing stops, solder or threaded ends with union.
  2. Brass two piece body, chrome plated brass ball and stem, PTFE seats and seals, lever handle, and Vic-Press ends. Victaulic Series P589.

- B. Over 1-1/2 Inches: Cast ductile iron steel body, chrome plated steel ball, teflon seat and stuffing box seals, lever handle, or gear drive handwheel for sizes 10 inches and over, flanged or grooved ends. Basis of Design: Victaulic Series 726.

#### 2.12 PLUG VALVES

- A. Up to and including 3 Inches:
  - 1. Elastomer coated ductile iron disc with integrally cast stem, copper-tube dimensioned grooved ends, lever handle or gear operator. Basis of Design: Victaulic Series 608.
  - 2. Bronze body, bronze tapered lubricated plug, teflon packing, threaded ends.
- B. Over 3 Inches:
  - 1. Cast iron body and lubricated plug, flanged ends.
  - 2. Elastomer coated ductile iron plug with integrally cast stem, ductile iron body and bonnet, welded-in nickel seat, lever handle or gear operator. Basis of Design: Victaulic Series 377.
    - a. For installation on IPS / Steel pipe sizes with Victaulic Style 307 transition coupling.

#### 2.13 BUTTERFLY VALVES

- A. Bronze body
  - 1. Elastomer coated ductile iron disc with integrally cast stem, copper-tube dimensioned grooved ends, lever handle or gear operator. Basis of design: Victaulic Series 608.
  - 2. Stainless steel disc, resilient replaceable seat, threaded ends, extended neck, 10 position lever handle.
- B. Cast or ductile iron body, chrome plated ductile iron disc, resilient replaceable pressure responsive EPDM seat, wafer or lug ends or grooved ends if Victaulic grooved fittings are used, with extended neck and 10 position lever handle. (Stem shall be offset from the disc centerline to provide full 360-degree circumferential seating). Sizes 6" and larger furnish gear drive handwheel. Basis of Design: Victaulic MasterSeal™.

#### 2.14 FLOW CONTROL VALVES

- A. Construction: DZR brass (Ametal) or bronze body with union on inlet and outlet, temperature and pressure test plug on inlet and outlet with blowdown/backflush drain.
  - 1. Body material shall be ISO 6509 compliant.
- B. Calibration: Control flow within 3.5 percent of selected rating, over operating pressure range of 10 times minimum pressure required for control.
- C. Manual (Multiple Turn Balancing Valves): Victaulic Series 786/787/78K circuit balancing valve.
- D. If called for on drawings, furnish Victaulic or Griswold flow control valve. Flow control valve shall automatically control flow rates with  $\pm 5\%$  accuracy. Valve control mechanism shall consist of a stainless steel cartridge with a ported cup

and coil/helical spring to avoid corrosion. Four operating ranges shall be available with minimum range requiring less than 2 psig to actuate the mechanism. Manufacturer shall provide independent laboratory tests verifying accuracy and performance. Griswold flow control valve shall have a 5 year warrantee to guarantee all materials and workmanship. See drawings for flow rate of valve.

2.15 SWING CHECK VALVES

- A. Up to and including 3 Inches: Bronze swing disc, solder or screwed ends.
- B. Over 3 Inches: Iron body, stainless steel or bronze trim, swing disc, renewable disc and seat, grooved or flanged ends. Basis of Design: Victaulic Series 712.

2.16 SPRING LOADED CHECK VALVES

- A. Iron body, bronze trim, stainless steel spring, renewable composition disc, screwed, wafer, or flanged ends.
- B. Ductile iron body, stainless steel spring and shaft aluminum-bronze disc with elastomer seal or elastomer coated ductile iron disc with welded-in nickel seat, grooved ends. Basis of Design: Victaulic Series 716.

2.17 WATER PRESSURE REDUCING VALVES

- A. Up thru 3 Inches: Bronze body, stainless steel and thermoplastic internal parts, fabric reinforced diaphragm, strainer, double union ends.
- B. Over 3 Inches: Cast iron body, bronze fitted, elastomeric diaphragm and seat disc, flanged.
- C. Valve shall be as manufactured by Bell and Gossett.

2.18 RELIEF VALVES

- A. Furnish and install as shown on plans a diaphragm-assist operated bronze body ASME rated and nameplated safety relief valve with fail-safe disc to assure normal operation under emergency conditions. The valve shall have a low blowdown differential and shall be designed to relief system pressure in excess of the operating pressure specified for the system, within the maximum operating limitations of the valve. The ASME safety relief valve shall be engineered to prevent the system fluid from entering the spring chamber under normal operating conditions. The permanent valve nameplate shall display the BTUH and relief pressure ratings certified by the National Board of Boiler and Pressure Vessel Inspectors. Valve shall be as manufactured by Bell and Gossett.

2.19 STRAINERS

- A. Size 3 inch and Under: Screwed brass body for 175 psig working pressure, Y pattern with 1/32 inch stainless steel perforated screen.
- B. Size 4 inch: Flanged iron body for 175 psig working pressure, Y pattern with 3/64 inch stainless steel perforated screen.

- C. Size 5 inch and Larger: Flanged iron body for 175 psig working pressure, basket pattern with 1/8 inch stainless steel perforated screen.
- D. Grooved-End Strainers: Size 2 inch through 12 inch, 300 psig working pressure, Y-pattern with 1/16 or 1/8 inch stainless steel perforated screen. Victaulic Series 732.

## 2.20 INSERTS

- A. Inserts: Malleable iron case of steel shell and expansion plug for threaded connection with lateral adjustment, top slot for reinforcing rods, lugs for attaching to forms; size inserts to suit threaded hanger rods.

## 2.21 CONCRETE FOR THRUST RESTRAINT AND COLLARS

- A. Concrete: Class A Concrete conforming to Divisions 500 and 700 of the SCDOT Standard Specifications.
  1. Compressive strength of 3,000 psi at 28 days.
  2. Air entrained.
  3. Water cement ratio of 0.488 with rounded aggregate and 0.532 with angular aggregate.
  4. Maximum slump of 3.5 inch for vibrated concrete and 4 inch for non-vibrated concrete.
  5. Minimum cement content of 564 pounds per cubic yard for vibrated concrete and 602 pounds per cubic yard for non-vibrated concrete.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify that excavations are to required grade, dry, and not over-excavated.

### 3.2 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel or groove plain end ferrous pipe.
- B. Remove scale and dirt, on inside and outside, before assembly.
- C. Prepare piping connections to equipment with flanges or unions.
- D. Unions and flanges for servicing and disconnect are not required in installations using grooved joint couplings. (The couplings shall serve as disconnect points.)

### 3.3 PLUMBING PIPING INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Dielectric nipples for connection of dissimilar materials. A brass adaptor dielectric union is not acceptable.

- C. Route piping in orderly manner and maintain gradient.
- D. Install piping to conserve building space and not interfere with use of space.
- E. Group piping whenever practical at common elevations.
- F. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
  - 1. For water systems, use adequate numbers of Victaulic Style 77 flexible couplings in header piping to accommodate thermal growth and contraction, and for the elimination of expansion loops. (In accordance with Victaulic instructions and as approved by the engineer). Where expansion loops are required, use Victaulic Style 77 couplings on the loops.
- G. Provide clearance for installation of insulation and access to valves and fittings.
- H. Provide access where valves and fittings are not exposed. Coordinate size and location of access doors.
- I. Establish elevations of buried piping outside the building to ensure not less than 4'-0" of cover for sewers and not less than 5'-6" of cover for domestic water piping.
- J. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to weld.
- K. Provide support for utility meters in accordance with requirements of utility companies.
- L. Prepare pipe, fittings, supports, and accessories not prefinished, ready for finish painting.
- M. Underground sewers shall be a minimum of 3" in diameter. Sewers located within building shall have a minimum slope of 1/4" per foot for piping 3" and smaller and a minimum slope of 1/8" per foot for piping 4" and larger.
- N. All junctions of drainage piping shall be made with combination "Y" and 1/8 bend fittings.
- O. Install bell and spigot pipe with bell end upstream.
- P. Terminate plumbing vents 12" minimum above roof. Furnish and install weather cap on top of all vent pipes.
- Q. Install valves with stems upright or horizontal, not inverted.
- R. Solder or "sweat" joints shall be used for all copper and brass fittings, valves and tubing, using the soldering flux and methods recommended by the manufacturer of the tubing and fittings. Solder shall be silver solder for buried piping. No lead solder shall be used on any potable water piping.



- S. Pipe vents from gas pressure reducing valves to outdoors and terminate in weather proof hood.
- T. Equipment using gas and related piping shall be installed in compliance with NFPA 54 and 58, as applicable.
- U. Install ductile iron pipe and fittings in accordance with AWWA C600 and manufacturer's instructions.
- V. Steel Rods, Bolt, Lugs, and Brackets: Coat buried steel with one coat of coal tar coating before backfilling.
- W. Maintain minimum 10-foot horizontal separation and 18 inch vertical separation of water main from sewer piping or as required by local code.

### 3.4 PLUMBING PIPING APPLICATION

- A. Use grooved mechanical couplings and fasteners in accessible locations, risers and pipe chases with Architect/Engineer's approval.
  - 1. Grooved joints shall be installed in accordance with the manufacturer's latest published installation instructions. Grooved ends shall be clean and free from indentations, projections, and roll marks in the area from pipe end to groove. Gaskets shall be of an elastomer grade suitable for the intended service, and shall be molded and produced by the coupling manufacturer. The grooved coupling manufacturer's factory trained representative shall provide on-site training for contractor's field personnel in the use of grooving tools and installation of grooved joint products. The representative shall periodically visit the jobsite and review contractor is following best recommended practices in grooved product installation. (A distributor's representative is not considered qualified to conduct the training or jobsite visit(s).)
- B. Install unions downstream of valves and at equipment or apparatus connections. Unions are not required in installations using grooved mechanical joint couplings. (The couplings shall serve as unions and disconnect points).
- C. Install brass male adapters each side of valves in copper piped system. Sweat solder adapters to pipe.
- D. Install gate, ball, or butterfly valves for shut-off and to isolate equipment, part of systems, or vertical risers. All branch piping take-offs from mains, risers, or branch piping shall have valves installed to allow isolation of branch piping.
- E. Install globe, ball, or butterfly valves for throttling, bypass, or manual flow control services.
- F. Provide spring loaded check valves on discharge of water pumps.
- G. Provide plug valves in gas systems for shut-off service. Provide removable or fixed handle for each plug valve.

- H. Provide flow controls in water recirculating systems where indicated.

### 3.5 INSTALLATION OF INSERTS

- A. Install in accordance with manufacturer's instructions.
- B. Provide inserts for placement in concrete formwork.
- C. Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.
- D. Provide hooked rod to concrete reinforcement section for inserts carrying pipe over 4 inches.
- E. Where concrete slabs form finished ceiling, locate inserts flush with slab surface.
- F. Where inserts are omitted, drill through concrete slab from below and provide through-bolt with recessed square steel plate and nut flush with top of slab.

### 3.6 PIPE HANGERS AND SUPPORTS

- A. Support horizontal piping as scheduled.
- B. Install hangers to provide minimum ½ inch space between finished covering and adjacent work.
- C. Place hangers within 12 inches of each horizontal elbow.
- D. Use hangers with 1½ inch minimum vertical adjustment.
- E. Support horizontal cast iron pipe adjacent to each hub, with 5 feet maximum spacing between hangers.
- F. Support vertical piping at every floor. Support vertical cast iron pipe at each floor at hub.
- G. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
- H. Support riser piping independently of connected horizontal piping.
- I. Provide copper plated hangers and supports for copper piping.
- J. Design hangers for pipe movement without disengagement of supported pipe.
- K. Prime coat and finish paint exposed steel hangers and supports. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed. Hangers and supports located in mechanical spaces are considered exposed.

### 3.7 ERECTION TOLERANCES

- A. Establish invert elevations, slopes for drainage to minimum 1/8 inch per foot for piping 4" and larger, 1/4" per foot for piping 3" and smaller. Maintain gradients.
- B. Slope water piping and arrange to drain at low points.

### 3.8 SERVICE CONNECTIONS

- A. Provide new sanitary and storm sewer services. Before commencing work, check invert elevations required for sewer connections, confirm inverts and ensure that these can be properly connected with slope for drainage and cover to avoid freezing. Contractor shall pay all fees, cost, etc. to local authorities for tap-ins, inspections, etc. as required.
- B. Provide new water service complete with reduced pressure backflow preventer, double check valve assembly or water meter with by-pass valves as required by the local authorities.
- C. Provide sleeve in wall for service main and support at wall with reinforced concrete bridge. Caulk enlarged sleeve and make watertight with pliable material. Anchor service main inside to concrete wall.
- D. Contractor shall pay all fees, costs, etc. to local authorities for tap-ins, inspections, etc. as required.
- E. Provide new gas service complete with gas meter and regulators. Provide regulators on each line serving gravity type appliances, sized in accordance with equipment. Gas company is responsible for installation of gas service and meter. Contractor shall be responsible for all coordination, etc. Contractor shall inform the gas company of gas load for service for the building and meter size by the gas company. Owner shall pay all gas company charges for gas service directly to the gas company.

### 3.9 NATURAL GAS PIPING

- A. Natural gas piping located outdoors shall be prime painted and finish painted with rust prohibitor paint that includes zinc. Color shall be selected by the Architect.
- B. Natural gas piping supports shall occur on 8'-0" centers and at changes in direction.
- C. Natural gas piping installed outdoors on the roof shall be supported at a minimum of 3½" above roof level.
- D. Roof supports shall be a manufactured support similar to PHP-SS8 or equal by Miro.

### 3.10 POLYETHYLENE ENCASEMENT

- A. Encase Ductile Iron piping in polyethylene where indicated on drawings to prevent contact with surrounding backfill material.

- B. Install in accordance with AWWA C105, Method A.
- C. Terminate encasement 3 to 6 inches above ground where pipe is exposed.

3.11 CONCRETE THRUST RESTRAINT

- A. Provide valves, tees, bends, caps, plugs and dead ends with concrete thrust blocks as indicated on drawings.
- B. Pour concrete thrust blocks against undisturbed earth. Locate thrust blocks at each elbow or change of pipe direction to resist resultant force and so pipe and fitting joints will be accessible for repair.
- C. Do not encase fitting joints and flanges.

END OF SECTION

MAI: 2024-1527

SECTION 23 05 00

HVAC REQUIREMENTS

PART 1 GENERAL

1.1 RELATED SPECIFICATIONS AND DOCUMENTS

- A. Drawings and related specifications for this project including General and Supplementary Conditions, Division 1, General Requirements, Instructions to Bidders, Addenda's, etc. apply to and are considered a part of Division 23 - Mechanical Work.
- B. Information in this division is intended to clarify or make additions to the requirements set forth in the General Conditions, Supplementary Conditions, and Division I of these specifications. Any conflict between this Division 23 and other sections or divisions of the specifications or drawings shall be brought to the attention of the Architect/Engineer in writing as a request for addendum prior to the bid opening.
- C. Furnish all equipment, materials, articles, items, operations or methods listed, mentioned or scheduled on drawings, these specifications, manufacturer's installation instructions and include all labor, materials, equipment and incidentals necessary for their complete installation and operation.
- D. All information contained in this section applies to all sections within Division 23 as if it was part of each section.

1.2 DRAWINGS AND SPECIFICATIONS

- A. The drawings and these specifications are intended to supplement each other and any material or labor called for in one shall be furnished even if not specifically mentioned in both. Any material or labor which is neither shown on the drawings nor listed in this specification, but is normally incurred or required for completion of work shall be furnished. If there is a discrepancy between the drawings and specifications, the more stringent of the two shall be followed.
- B. Drawings are diagrammatic and are intended to show approximate location and general arrangement of systems and equipment. No attempt has been made to show every ell, tee, etc. Drawings shall not be scaled for location of systems, equipment, etc. All dimensions whether given on drawings or scaled shall be verified in field and coordinated with all other trades and existing field conditions. Some ductwork, piping, equipment, etc. locations may require changes in location due to field conditions and coordination with other trades will be made with no additional cost to the Owner. Failure to check will be no reason for additional compensation.
- C. These drawings and the associated specifications are intended to provide complete furnishing, installation and operational HVAC systems as specified. If these drawings and associated specifications have information omitted that would not allow a completely operational system as is the intent of the Engineer, the bidder shall notify the Engineer a minimum one week prior to the bid date to allow for addenda. Once bids have been received, the Contractor shall be responsible for material, labor, etc., to furnish and install a completely operational

mechanical system as is the intent of these drawings and associated specification.

- D. The installation of all systems, equipment, etc., is subject to clarification with submitted shop drawings and field coordination requirements. Equipment outlines shown on drawings or dimensioned on drawings are limiting dimensions. Any equipment that reduces the indicated clearances or exceeds specified or scheduled equipment dimensions shall not be used.
- E. The Architect/Engineer and Owner reserve the right to make minor changes in the location of equipment, piping, ductwork, etc. at the time of rough-in without additional cost to the Owner.
- F. The Mechanical Trades Contractor shall have completed for his portion of work, at least one installation of size and type comparable to this project and has been in satisfactory operation for at least two complete years. The Mechanical Trades Contractor shall also have a developed service department capable of negotiating service contracts with the Owner for systems herein specified.

### 1.3 AUTOCAD BACKGROUND FILES

- A. The Contractor shall include in their bid any cost for requesting AutoCAD backgrounds for their use from the Architect or Engineer. The cost will be \$150.00 for the first plan, and \$50.00 for each additional plan that may be requested for AutoCAD use. A waiver of responsibility for the Architect and Engineer related to Contractor use of the CAD files shall be signed by the Contractor.

### 1.4 MANUFACTURER'S SPECIFICATIONS AND CAPACITIES

- A. Some equipment, materials, etc. that are scheduled on the drawings or listed in any addenda may not be specified in this specification. The manufacturer's specification and capacities shall be considered included and part of this specification whether it is specified in this specification or noted or scheduled on the drawings. The contractor shall remove and replace any "substituted" equipment or material that has been installed or is on site, which in the opinion of the Architect/Engineer does not meet the scheduled equipment or materials manufacturer's capacities or specification at no additional cost to the Owner.

### 1.5 DEFINITIONS

- A. Finished Spaces: Spaces other than mechanical and electrical equipment rooms, furred spaces, pipe and duct shafts, unheated spaces immediately below roof, spaces above ceilings, unexcavated spaces, crawlspaces, and tunnels.
- B. Exposed, Interior Installations: Exposed to view indoors. Examples include finished occupied spaces and mechanical equipment rooms.
- C. Exposed, Exterior Installations: Exposed to view outdoors or subject to outdoor ambient temperatures and weather conditions. Examples include rooftop locations.

- D. Concealed, Interior Installations: Concealed from view and protected from physical contact by building occupants. Examples include above ceilings and in duct shafts.
- E. Concealed, Exterior Installations: Concealed from view and protected from weather conditions and physical contact by building occupants but subject to outdoor ambient temperatures. Examples include installations within unheated shelters.

#### 1.6 LOCAL CONDITIONS

- A. Before submitting proposals, each contractor shall examine these specifications and associated drawings, addenda, etc. and shall examine the site of the project. The bidder shall fully investigate the site of this project, investigate coordination of his work with all other trades and existing conditions and completely satisfy himself as to the conditions to which the work is to be performed before submitting his/her bid. No allowances or considerations will be given at a later date for alleged misunderstanding as to the requirements of the work, materials to be furnished, or conditions required by the nature of this project site and coordination by the neglect on the bidder's part to make such an examination and coordination.
- B. Drawings show approximate location of existing services. The mechanical and electrical trades shall check with local utility companies or municipal agencies for exact location of services which they expect to encounter. The Mechanical Trades Contractor shall be responsible for hiring a company such as "Miss Dig" to stake out and locate all utilities in areas of excavation before commencing any work. The Mechanical Trades Contractor shall verify all elevations and locations of existing underground lines which are to be connected into or routed over or under. This verification shall be done prior to beginning work at this project.

#### 1.7 QUALITY ASSURANCE

- A. All work shall be performed in accordance with all local and state codes, laws and regulations applicable to the work for this project. The contractor shall be responsible for all permits and costs for inspections, etc., and for checking with each utility company supplying service to this project and shall determine from them all, any changes in boxes, meters, valves, service, etc., and shall include all cost for inspections, revisions to services, etc. in his bid as required by local agencies, utilities, etc. No extra payment will be made for such items after the contractor submits his bid.
- B. In addition to all applicable Federal, State and local codes, the standards and codes listed below shall apply to all mechanical work. The reference to codes and standards shall be referenced to the latest edition or revision.
  - 1. Air Diffusion Council (ADC)
  - 2. Air Moving and Conditioning Assoc., Inc. (AMCA)
  - 3. American Boiler Manufacturer's Association (ABMA)
  - 4. American Gas Association (AGA)
  - 5. American National Standard Institute (ANSI)
  - 6. American Refrigeration Institute (ARI)

7. American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE)
  8. American Society of Mechanical Engineers (ASME)
  9. American Society for Testing materials (ASTM)
  10. American Welding Society
  11. ANSI code of Pressure Piping and Unified Pressure Vessels
  12. ASME Boiler and Pressure Vessel Code
  13. Institute of Boiler and Radiator Manuf. (IBR)
  14. National Electrical Manufacturer's Association (NEMA)
  15. Sheet Metal & Air Conditioning Contractors National Association (SMACNA)
  16. Standards of the Hydraulic Institute
  17. Underwriters' Laboratories (UL)
  18. Williams-Steiger Occupational Safety & Health Act (OSHA)
- C. In the event of conflict between drawings, codes, standards or specifications, the most stringent requirement shall apply

#### 1.8 SUBMITTALS AND SHOP DRAWINGS

- A. Submit electronic sets of complete shop drawings for all mechanical equipment and materials associated with Division 23 and associated drawings to the Architect/Engineer for review before fabrication of work or ordering of equipment. Shop drawings shall be submitted at the earliest possible time.
- B. Shop drawings shall be first reviewed by the contractor. Inaccurate shop drawings shall be corrected by the contractor to meet specifications and schedules for this project. The contractor shall then initial the shop drawings as having been reviewed before submitting to the Architect/Engineer. Shop drawings shall have, in addition to the mechanical information, the electrical requirements for minimum circuit amperes and maximum fuse size ratings of the equipment.
- C. Drawings which are rejected must be corrected and returned for Architect/Engineer review before ordering.
- D. Furnish to the job site copies or prints of shop drawings that have been reviewed by the Engineer as soon as possible.
- E. Include a copy of each shop drawing in the Operation and Maintenance Manual.
- F. The checking and reviewing of shop drawings by the Architect/Engineer shall be construed as assisting the contractor and the Architect/Engineer's action does not relieve the contractor from the responsibility for errors or omissions which may exist thereon. The contractor shall be held responsible for errors or omissions that are discovered after approval process and must be made good by the contractor.
- G. The Sheet Metal Contractor, etc. shall include in their bid any cost for requesting AutoCAD backgrounds for their use from the Architect or Engineer at a minimum \$100.00 for the first file, and \$50.00 for each additional file that may be requested for AutoCAD use.

#### 1.9 PERMITS, INSPECTIONS AND TESTS



- A. The Mechanical Trades Contractor shall take out all permits and arrange for necessary inspections and shall pay all assessments, fees and costs, etc., and make all tests as required by applicable codes. At the completion of the project, the Mechanical Trades Contractor shall furnish certificates of inspection and approval and secure final occupancy permit. Record copies shall be included in the Operation and Maintenance manuals.

#### 1.10 RECORD DRAWINGS

- A. Maintain an up-to-date set of "record" drawings showing actual equipment, piping, duct, etc. installation locations. Exact dimensions from column lines for all concealed work and tie-ins with elevations noted shall be included.
- B. Include a set of reproducible drawings and a set of prints in each Operation and Maintenance Manual.
- C. The Engineer reserves the right to request and be furnished any additional information he deems necessary to be shown on the record drawings.

#### 1.11 OWNER'S INSTRUCTIONS

- A. Upon completion of the project, the contractor shall be responsible for instructing the Owner's operating staff, in the presence of the Architect/Engineer's representative, in the proper operation and maintenance of the mechanical systems and equipment. Include a statement signed by the Owner that instructions have been given for proper operation and maintenance of the mechanical systems and equipment.

#### 1.12 GUARANTEES

- A. Furnish a written guarantee, to the Architect/Engineer, that will make the contractor responsible at his own expense for any imperfections in material and/or workmanship which may develop under ordinary use within a period of one (1) year from final Owner's acceptance of the work.
- B. Furnish all written guarantees from equipment and/or material manufacturers which shall include the operating and performance conditions and capabilities upon which they are based.
- C. Permanent equipment that is used for temporary heat or cooling shall be guaranteed for one (1) year from the date of final acceptance of the project.

#### 1.13 PORTABLE AND DETACHABLE PARTS

- A. Retain all portable and detachable parts of installation such as keys, spare accessories, operating manuals, etc. include in the Operation and Maintenance Manual.

#### 1.14 OPERATION AND MAINTENANCE MANUALS

- A. Furnish to the Architect/Engineer two (2) copies of an approved bound (3 ring binder) book with tabs for sections covering each item of equipment. These notebooks shall include shop drawings, maintenance manuals, operating manuals

and parts lists to instruct the Owner on proper operation and use as well as maintenance for each piece of equipment. These books shall also include contractors', subcontractors' and manufacturers' names, telephone numbers and addresses.

- B. Manuals shall also include sequence of operation, control equipment literature, wiring and control diagrams, certificates of guarantees, certificates of inspection, mechanical system test and balancing reports. The contractor shall accumulate and summarize the control and maintenance sequence in a typewritten sheet to be included in the report.
- C. The manuals must be approved by the Architect/Engineer before final payment to the contractor. The Engineer reserves the right to request and be furnished any additional information that he deems necessary to be included in the manuals.

#### 1.15 RESPONSIBILITIES FOR USE OF SUBSTITUTE MATERIALS

- A. Contractor shall notify Architect/Engineer in writing at least ten (10) calendar days before bids are due for approval to use materials and/or equipment other than that which has been specified or scheduled. If substitute materials and/or equipment are approved and used, it will be this contractor's responsibility to guarantee that the items will function as the specified equipment or materials, will in no way alter the design of the structure or system, and will not require any additional mechanical work such as piping, ductwork, etc. Any additional cost required by substitute materials will be the responsibility of the contractor.
- B. It will be the contractor's responsibility, at his own expense, to remove or replace any non-approved equipment or material or any approved equipment or materials not originally specified or scheduled if equipment and materials do not meet with the satisfaction of the Architect/Engineer.
- C. It shall be the Contractor's (Mechanical Trades) responsibility to coordinate and pay for any Electrical Contractor costs due to any changes in substitute materials and/or equipment's power requirements, which differ from that shown on the design documents.
- D. No consideration will be given to requests for substitute materials because of delivery problems unless the contractor can prove that orders were placed as soon as possible after contract was awarded and that delays were not caused by submittal of unscheduled or unspecified (substituted) materials to the Architect/Engineer.

#### 1.16 COST BREAKDOWN AND EQUIPMENT LIST

- A. The successful bidder shall be responsible for submitting a cost breakdown to the Architect/Engineer and Owner within ten (10) calendar days after date of request of the breakdown. During progress of the work, if changes occur which cause additional cost, the price on such items shall be broken down in accordance with the items listed in the breakdown.
- B. The bidders shall be responsible for submitting a complete list of all equipment manufacturers, makes, models, etc. that will be used for this project with their

proposal. The equipment list shall be typed on the contractor's letterhead and shall be signed by the authorized officer.

1.17 MATERIALS AND EQUIPMENT

- A. Materials and equipment furnished under this project shall have a minimum warranty of one (1) year. All materials and equipment shall be new, of first class quality and shall be furnished, delivered, erected, installed and finished in every detail and shall be so selected and arranged as to fit into the building space. All material or equipment that is not specified but necessary for this project shall be subject to the approval of the Architect/Engineer.
- B. Any materials or equipment not specified or scheduled but similar to that which has had prior approval shall be listed as a substitution and noted on the proposal form as such.
- C. The contractor shall include all miscellaneous materials and labor required to completely install and operate the mechanical systems as is intended by these drawings and specification.

1.18 TEMPORARY HEATING OR COOLING OF SPACE/BUILDING DURING CONSTRUCTION

- A. It is not recommended to use HVAC equipment being furnished for the project for temporary heating and cooling of the space/building during construction. If it is necessary to utilize the HVAC equipment for tempering air, filters shall be placed at face of each return diffuser or grille. Mechanical Contractor shall be responsible for removing temporary; filters at each return diffuser, cleaning return air ductwork and installing new filters within the HVAC equipment before space/building is turned over to the Owner.

1.19 SCHEDULE, COORDINATION AND INSTALLATION OF WORK

- A. The contractor shall carry on work in such a manner as to meet the dates as scheduled by the General Contractor and shall work overtime at no expense to the Owner as required to comply with the schedule. This contractor shall schedule all work with Owner and Architect/Engineer and schedule shut down of systems with Owner.
- B. Examine the site and all drawings and specifications and coordinate work with all other trades before commencing work for this project. Arrange work essentially as shown with the exact layout to be made on the job to suit actual conditions. Precise locations of equipment and materials shall be coordinated and shall be the responsibility of this contractor. Should any conflicts in location occur, and necessary deviations from drawings are required as determined by the Architect/Engineer, the contractor shall make necessary adjustments without additional cost to the Owner. Any damage to HVAC equipment due to HVAC equipment operation during construction shall be paid for by the Mechanical Contractor.
- C. All equipment, piping, ductwork, etc. shall be located and/or routed to allow for the most convenient access for servicing.

- D. Arrange for necessary access doors, panels, etc. to allow servicing of equipment, piping, valves, fire dampers, etc. Perform any cutting and patching as required, made necessary by failure to make proper arrangements.
- E. Indicated equipment connections, sizes and locations shall be verified and connected according to manufacturer's shop drawings and installation instructions. Thoroughly investigate the space provided for equipment and connections before ordering equipment. All equipment shall be selected to fit into the space allowed, including connections with adequate space allowed for operation and maintenance.
- F. All work shall be installed in a neat and workmanlike manner, using skilled personnel thoroughly qualified in the trade or duties that they are to perform. Rough work will be rejected.
- G. Coordinate all equipment deliveries and schedules to allow timely installation. Contractor shall separate equipment into sections and reassemble in building if required by the installation at no extra cost to the Owner.
- H. Furnish a superintendent approved by the Architect/Engineer to oversee and coordinate the work to be performed with all other trades.
- I. Coordinate location of pipes, ductwork, etc. with other building components such as structural components (beams, joists, columns, etc.), electrical components (lighting, conduits, etc.) and architectural components (walls, ceilings, floors, pipe chases, roof, etc.).
- J. Before starting work, Contractor shall verify that available space for proposed pipes, ducts, equipment etc. is adequate for the intended purpose and will result in a first class installation. Irregardless of drawings, responsibility for first class operating systems rests with the Contractor.
- K. Arrange for chases, slots, openings, etc. and other building components to allow for mechanical systems installation. Coordinate cutting and patching of these components to accommodate installation. This contractor shall be responsible for accurately locating for the general trades all chases, shafts, etc. and shall be responsible for all cutting and patching if these chases were not accurate or not coordinated in time with the general trades. Coordinate installation of all sleeves in walls, on floors or other structural or architectural components.
- L. Sequence, coordinate and integrate installation of equipment and materials for efficient work flow during the project. Particular attention should be spent on larger pieces of equipment.
- M. Install equipment and materials with provisions for necessary access for service and maintenance. Allow space for removal of all parts that may require replacement or servicing.
- N. Coordinate installation of required supporting devices and set sleeves in poured-in-place concrete and other structural components as they are constructed.
- O. Coordinate requirements for access panels and doors for mechanical items requiring access that are concealed behind finished surfaces. When access

panels are required, valves and equipment components requiring access shall be located to minimize the number of panels.

- P. Examine the work as it progresses and alert the Architect/Engineer in writing of any instances or obstructions that will prevent this contractor from performing his/her work.

#### 1.20 DELIVERY, STORAGE, AND HANDLING

- A. Deliver pipes and tubes with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe end damage and to prevent entrance of dirt, debris, and moisture.
- B. Furnish and maintain a weatherproof storage facility on the site of adequate size to store miscellaneous equipment and/or materials to prevent exposure to the weather. Location of shed shall be determined by the Owner and Architect/Engineer. The Owner reserves the right to deny storage of materials or equipment in any existing or new buildings.

#### 1.21 COOPERATION WITH ARCHITECT/ENGINEER AND OTHERS

- A. Coordinate all aspects of the mechanical system installation with all other trades, existing conditions, etc.
- B. If the bidder believes that changes in design are required to meet intended design capacities and operation or material and/or equipment is obviously omitted from these specifications and drawings, the bidder shall contact the Architect/Engineer in writing at least ten (10) days before bid date. The acceptance of a bid by the Owner shall be binding and shall indicate that the bidder does not require any changes in design nor additional costs in order to meet the design and performance of the mechanical system as indicated in these specifications and drawings.

#### 1.22 WORK INVOLVING OTHER TRADES

- A. Equipment or materials specified in Division 23 may have to be installed by other trades (such as electrical trades or architectural trades) due to code requirements or union jurisdictional requirements. Where this occurs, this contractor shall include all costs required by other trades to complete the work and hire the respective trade to perform this work.

#### 1.23 PERFORMANCE DATA AND ACCESSIBILITY

- A. All performance data specified in this specification or scheduled on drawings shall be considered actual performance of the equipment after installation. The supplier and installer shall be responsible for suitable allowances to adjust equipment to design capacities when actual operating and installation conditions differ from drawings.
- B. All equipment and materials shall be installed to allow access for servicing and maintenance. Coordinate final location of such equipment and materials that are concealed with required access doors on panels. Allow ample space for replacement or servicing. Extend all grease fittings to an accessible location.

1.24 CUTTING AND PATCHING

- A. Unless noted otherwise, the Mechanical Trades shall be responsible for all cutting, patching and associated work required under Division 23. This work shall be performed by trades normally performing this type of work except drilling of holes shall be done by the contractor requiring same. This includes replacing areas of cutting required by this work with proper reinforcing, termite shielding, materials, finishing, etc. to restore the areas to their original condition, and filling all openings around ducts, piping, etc. with approved fire retardant materials. Regardless, all drilling of holes shall be the responsibility of the Contractor requiring same.
- B. If noted on drawings that the General Trades will be responsible for all cutting and patching, it will be the Mechanical Trades responsibility to notify all General Trades during bidding of all areas requiring cutting and patching. Regardless, all drilling of holes shall be the responsibility of the contractor requiring same.

1.25 WORK IN EXISTING BUILDINGS

- A. Coordinate and schedule all work in existing building with Owner and Architect/Engineer. Systems shall be kept in operation at all times if at all possible. If a system shut-down is required, the contractor shall schedule with the Owner, the time and length of shut-down. A system shall not be shut down without written permission from the Owner.
- B. All existing equipment, piping, ductwork, etc. that is to be removed shall remain the property of the Owner. The contractor shall remove and locate this material that remains the property of the Owner to a location determined by the Owner somewhere on site. If the Owner does not want to maintain possession of the removed material, the contractor shall be responsible for removing material from the site and disposing of this material as necessary to meet all codes and requirements and shall pay all costs as required for any disposal fees, inspections, permits, etc.
- C. All existing piping, equipment, etc. whether shown on drawings or not that is to be removed and/or abandoned and does not remain property of the Owner shall be removed from site.
- D. Any existing piping, valves, mechanical equipment, etc. serving the existing building which are shown or not shown on drawings and are required for systems operation shall remain in use. If these systems require relocation to allow installation of new systems, the contractor shall be responsible for relocating to an Owner and Architect/Engineer approved location. The contractor shall pay all cost for this work and include such cost in his/her bid. (As specified previously, contractor shall be responsible for examining site and include all cost for work required to complete this project.)
- E. When active services, etc. are encountered in this project, the contractor shall furnish and install bracing, support, etc. as required to protect and keep these services active. (As specified previously, these drawings are diagrammatical. The contractor shall be responsible for verification of all existing services, piping, equipment, etc.).

1.26 ACCESS TO EQUIPMENT, HEATING COILS, VALVES, ETC.

- A. Coordinate access panels with type of construction and furnish access panels in areas that are non-accessible. Access panels shall be furnished by this contractor and installed by the General Contractor. The access panels shall be all approved, UL labeled and fire rated and shall be located and sized to allow access to equipment, heating coils, valves, fire dampers, etc.
- B. Where access panels are required, valves, equipment etc. shall be located as to require the least number of access panels.

1.27 EQUIPMENT GUARDS

- A. All rotating or moving parts of equipment that are located so as to be a hazard shall be fully enclosed or properly guarded as to meet or exceed all regulations and OSHA requirements.

1.28 EQUIPMENT CONNECTIONS

- A. Connections to equipment, plumbing fixtures, etc. shall be made in accordance with shop drawings, rough-in dimensions furnished by the manufacturer, codes, etc. and may vary with connections shown on drawings. The contractor shall be responsible for making connections and number of connectors as per shop drawings, codes, etc. at no additional cost to the Owner.

1.29 ELECTRICAL CONNECTIONS

- A. The Electrical Trades shall be responsible for furnishing and installing all electrical equipment, wiring, etc. required for operation of mechanical equipment unless otherwise noted on the drawings. The Mechanical Trades shall furnish detailed information and wiring diagrams to the Electrical Trades for all equipment specified and/or scheduled for this project. In the event that the Mechanical Trades furnishes an "approved equal" or "alternate" that require changes in the original electrical design, the Mechanical Trades shall pay all costs to the Electrical Trades as required to make satisfactory adjustments. All electrical work shall be done in accordance with the latest edition of the National Electric Code.
- B. See the temperature control or building automation system specification (if applicable) for description of electrical contractor work and Division 23 temperature control work.

1.30 MOTORS, MOTOR STARTERS AND DISCONNECTS

- A. Unless otherwise noted on drawings, motors shall be of constant speed 1750 rpm, new NEMA Design B, 40°C rise, horse power rated, open drip-proof except TEFC in dirty atmosphere, induction type motor with service factor of 1.15 and be of sufficient capacity to continuously operate the apparatus to which it is connected under all conditions of operation without exceeding nameplate ratings.
- B. Motors shall be premium efficiency as calculated using IEEE test method 112B.

- C. Motors  $\frac{1}{2}$  Hp. or larger shall be three phase; motors under  $\frac{1}{2}$  Hp. shall be 115 volt, 60 cycle, single phase. Before ordering the motors, the contractor shall verify correct motor voltage with the Electrical Trades and field conditions.
- D. The Mechanical Trades shall furnish, for equipment under Division 23, all special switches, disconnects, starters, alternators, etc. as specified or scheduled to be factory furnished and/or factory installed with the equipment including wiring diagrams, etc. whether it is to be factory installed or field wired. All other motor starters, disconnects, etc. not noted as factory furnished shall be furnished and installed by the Electrical Trades.
- E. Starters that are to be factory furnished with equipment shall be of the combination type and shall be as specified under Electrical Trades Division. Furnish overload protection for each phase.
- F. All wiring methods and materials shall meet NEMA, National Electric Code and State of Michigan Code requirements.
- G. All displays on control panels shall be on face of the panels.
- H. Motors having V-belt shall be furnished with base slide rails or other form of adjustment.

#### 1.31 LUBRICATION AND MAINTENANCE

- A. Contractor shall maintain, oil, lubricate, etc. all equipment furnished under Division 23 until final acceptance by the Owner. Protect all bearings and shafts during installation and thoroughly grease the steel shafts to prevent corrosion. The contractor shall be responsible for any and all damage to bearings, shaft, etc. of Division 23 equipment operated or not until final acceptance by the Owner.

#### 1.32 EXCAVATION AND BACKFILLING

- A. Furnish all excavation, backfilling and removal of excess dirt to accomplish installation of Division 23 mechanical work unless otherwise noted on drawings.
- B. All excavation shall be by open cut from the surface. Contractor shall determine whether excavation shall be by machine or by hand except where existing utilities may be located where excavation shall be by hand. Contractor shall be responsible for all damage to existing facilities and services. Excavation shall be to a depth of at least 6" to allow granular bedding below pipe or duct.
- C. If for any reason the work is suspended, the contractor shall properly protect the excavation and leave the areas unobstructed.
- D. Trench width shall allow sufficient width at centerline of pipe to allow at all times a first class construction/installation method but in no case should be less than 12" larger than the nominal pipe or duct size. This shall especially be true in areas that joints must be connected. Joint holes may have to be made with overhanging sides to make installation safe for workmen.



- E. The excavation shall be at all times finished and backfilled to the required grade after completion and approval of work. Not more than 100 feet of trench shall be excavated and open unless written approval is given by the Architect/Engineer.
- F. The subgrade shall be 4" to 6" below the pipe of granular bedding graded and tamped by hand or mechanical means to the exact elevation required at the bottom of the pipe. Granular materials shall be approved fine aggregate meeting MDOT #2NS specifications. This material shall pass a ½" sieve but will be retained on a #4 sieve. If poor soil conditions exist which will not give proper support to the pipe, duct or structure, furnish granular fill as required to remedy this situation and give proper support.
- G. Furnish and install properly sloped sheet piling, shored and braced in areas that the soil requires this to maintain a proper excavation and prevent any movement of earth which could in any way damage the work under construction. When removing the sheeting and bracing, special care should be taken to prevent any caving of the sides of the excavation and injury to the completed work or adjacent property.
- H. Take all necessary action to keep trenches and other excavation areas free from water at all times. Use such methods as pumping, ditching, well pointing, etc. to prevent water in trench or excavation. Dewatering of trench shall have constant supervision.
- I. Backfill excavation and trenches with approved granular material around sides of pipe and at least 12 inches above the top of the pipe laid not more than in 6 inch layers that are thoroughly tamped to 95% of its maximum density. There shall be no backfilling by any mechanical means until the granular material has been firmly tamped around the entire pipe to 12 inches above the pipe. All material used for backfilling shall be approved by the Architect/Engineer. Wherever trenching crosses walks or roadways or isolated inside of building, backfill top 6'-0" of trench with sand or bank run gravel in layers not to exceed 6 inches in depth and carefully compact by hand or machine. Do not backfill with frozen materials.
- J. No piping shall be covered until it has been tested, inspected and approved. Upon completion of backfilling, grade shall be restored in indicated elevation and left in reasonable condition for finish grade by others unless otherwise noted on drawings.
- K. Before final acceptance of work, all disturbed streets, drives, curbs, walks, parking areas, etc. shall be paved, graveled or other to as near their original condition as possible. All unused excavated material shall be removed from site if directed by the Architect/Engineer.

### 1.33 BASES AND SUPPORTS

- A. This contractor shall be responsible for furnishing all equipment pads and supports for equipment and materials required by Division 23 unless otherwise noted on drawings.
- B. All floor mounted mechanical equipment shall have a reinforced concrete pad furnished unless otherwise noted on drawings. The concrete pads shall be tied to the building floor with expansion bolts located maximum of 4'-0" on centers with

a minimum of four (4) bolts, set before pouring and concealed within the pad. The Mechanical Trades shall verify exact pad or support size with the equipment manufacturer and shall size pad with adequate area to allow sufficient room for installation of vibration isolators, equipment mounting hardware, etc. Concrete pads shall have a 45 degree bevel at the top edge. The contractor shall verify exact location of concrete pads.

- C. Furnish all steel, hanging material, rods, etc. for suspending equipment off floor unless otherwise noted on drawings for equipment to be furnished under Division 23. This includes all structural steel for supporting between beams.
- D. All support structure shall be of strength to safely withstand all stresses and loads to which they will be subjected and shall distribute load properly over the building area. Supports shall be designed to avoid undue strain to equipment and to avoid interference with piping, pipe connections, service and maintenance clearances, etc.
- E. Where equipment is to be floor mounted and requires legs, this contractor shall furnish and install structural steel members or steel pipe and fittings for legs. Fasten and brace to equipment and furnish flange at base to allow bolting to floor.
- F. Where equipment is to be ceiling or wall mounted, furnish necessary platform, structural steel, hardware, etc. as is most suitable for support of this equipment.
- G. All supports shall be approved by the Architect/Engineer.
- H. All piping, ductwork, etc. shall be suspended from structural steel members utilizing rods and approved hanger devices. Do not use metal deck for support. Beam clamps such as the Grinnell Fig. 260 or approved equal shall be used. Sheet metal "straps" shall not be used in place of rods.
- I. The mechanical trades shall be responsible for furnishing and setting in place all mechanical equipment, roof curbs and piping/duct roof curbs. The general trade shall be responsible for the roof work and associated flashing. The mechanical trade shall furnish and install treated wood base blocking as required to level curb and to match roof insulation thickness. Curb shall be as specified, or if not specified should be similar to Pate or Thy-curb with heavy gauge galvanized steel, insulated and with wood nailer. Height of curb scheduled or specified shall be height required to top of curb above finished roof. If height is not specified or noted, a minimum 12" high above finished roof will be required. (pipe support units shall be at height required). Rooftop units will be shipped knocked down with the mechanical trade responsible for assembly on site. Roof curb shall mate with unit and provide support and a watertight installation.

#### 1.34 SLEEVES, PLATES AND COLLARS

- A. Furnish all sleeves, plates and collars for piping, ductwork, etc. passing through walls, floor ceilings, foundations, etc. Coordinate with the General Contractor the exact location and size of required openings. No pipe or duct shall pass through a wall, floor ceiling, etc. without a sleeve. This contractor shall be responsible for sleeve locations and securing sleeves before concrete is formed.

- B. Sleeves for steel pipe shall be standard weight black steel pipe. For walls, foundations and ceilings, sleeve shall be kept flush with finished surfaces. For floors, the sleeve shall be set flush with bottom of concrete construction and be extended up ¼" above concrete floor. Sleeves shall be set in place before construction of walls, floors, ceilings, etc.
- C. Sleeves for copper pipe shall be type "M" hard copper tubing installed typical to that of steel pipe sleeves.
- D. Sleeves for piping shall be sized to allow insulation to run continuous through sleeve whenever possible and to allow not less than ¼" all around bare pipe or insulation.
- E. Sleeves for ducts passing through floors shall be 14 gauge black steel for ducts up to 24" maximum dimension, and 12 gauge black steel for ducts 25" and over maximum dimension. Sleeves shall be kept flush with the finished wall surface.
- F. Where insulated piping passes through walls or floor sleeves, furnish 22 gauge galvanized band around insulation of same length as the sleeve length. Band shall fit snugly over insulation and be held in place by steel metal collars all around insulation to cover openings.
- G. All penetration voids shall be sealed smoke tight with non-combustible materials similar to 3M or Hilti firestop systems to maintain the integrity of the fire rated structure. In a non-fire rated assembly, seal all voids with non-hardening sealant.
- H. Where bare piping 2" and smaller pass through wall or floors, furnish polished chrome plated brass escutcheons, split type. Bare piping 2½" and larger that pass through walls or floor, furnish 22 gauge galvanized steel metal collars so as to cover opening.
- I. Where piping penetrates an outside wall, below grade, utilize a mechanical sleeve, similar to link-seal, with stainless steel nuts and bolts on fasteners.

#### 1.35 RIGGING AND HOISTING

- A. Perform all required rigging, hoisting, transportation, moving, etc. of all equipment, materials, etc. to be furnished and/or installed under Division 23 whether furnished by this contractor or by the Owner or other trades.

#### 1.36 STORAGE FACILITY

- A. Furnish and maintain a weatherproof storage facility on the site of adequate size to store miscellaneous equipment and/or materials to prevent exposure to the weather. Location of shed shall be determined by the Owner and Architect/Engineer. The Owner reserves the right to deny storage of materials or equipment in any existing or new buildings.

#### 1.37 PROTECTION FROM DAMAGE

- A. The contractor shall be responsible for all materials, equipment, etc. and all work installed by himself and shall protect it from damage until final acceptance of this project by the Owner.

- B. Furnish all coverings and protection from dirt, dust, rain, storm, heat, traffic, wear, etc. and all possible injury including that by other workmen. Any equipment, workmanship, materials, etc. damaged prior to final acceptance by the Owner of this project shall be properly repaired at no expense to the Owner.
- C. Protect all plumbing fixtures and other equipment from damage by covering or coating. Any dented, scratched, rusted or marred surface finishes will not be accepted.
- D. Protect all equipment, materials, etc. from freezing.

#### 1.38 COMMON PIPE MATERIALS AND INSTALLATION INSTRUCTIONS

- A. Refer to individual Division 23 piping Sections for pipe, tube, and fitting materials and joining methods.
- B. Pipe Threads: ASME B1.20.1 for factory-threaded pipe and pipe fittings.
- C. Refer to individual Division 23 piping Sections for special joining materials not listed below.
  - 1. Pipe-Flange Gasket Materials: Suitable for chemical and thermal conditions of piping system contents.
    - a. ASME B16.21, nonmetallic, flat, asbestos-free, 1/8-inch (3.2-mm) maximum thickness unless thickness or specific material is indicated.
      - 1) Full-Face Type: For flat-face, Class 125, cast-iron and cast-bronze flanges.
      - 2) Narrow-Face Type: For raised-face, Class 250, cast-iron and steel flanges.
  - 2. Flange Bolts and Nuts: ASME B18.2.1, carbon steel, unless otherwise indicated.
  - 3. Plastic, Pipe-Flange Gasket, Bolts, and Nuts: Type and material recommended by piping system manufacturer, unless otherwise indicated.
  - 4. Solder Filler Metals: ASTM B 32, lead-free alloys. Include water-flushable flux according to ASTM B 813.
  - 5. Brazing Filler Metals: AWS A5.8, BCuP Series, copper-phosphorus alloys for general-duty brazing, unless otherwise indicated; and AWS A5.8, BAg1, silver alloy for refrigerant piping, unless otherwise indicated.
  - 6. Welding Filler Metals: Comply with AWS D10.12 for welding materials appropriate for wall thickness and chemical analysis of steel pipe being welded.
  - 7. Solvent Cements for Joining Plastic Piping:
    - a. ABS Piping: ASTM D 2235.
    - b. CPVC Piping: ASTM F 493.
    - c. PVC Piping: ASTM D 2564. Include primer according to ASTM F 656.
    - d. PVC to ABS Piping Transition: ASTM D 3138.
  - 8. Fiberglass Pipe Adhesive: As furnished or recommended by pipe manufacturer.

#### 1.39 PIPE HANGERS AND SUPPORTS

- A. Hangers and saddles shall be Modern Pipe Support Corp., Grinnel/Anvil, Autogrip, or M-CO. Inserts shall be of the type to receive a machine bolt head or nut after installation, permit horizontal adjustment, and shall be flush with the

surface. For copper pipe with steel hangers, clean and wrap pipe with two layers of plastic insulating tape at point of contact. Roller supports shall be adjustable type with insulated standoff. Rods shall be used for suspended installation. Sheet metal "straps" shall not be used in place of rods.

- B. Hangers for piping with vapor barrier sealed insulation shall be multipurpose pipe saddles fitting over the insulation. Wire or perforated strap iron will not be permitted for pipe supports. Do not support hangers from roof deck. Furnish and install all support steel as required to suspend from structural steel joist or beams. Hangers shall be clevis or split ring type with vertical adjustment and beam clamp similar to Grinnell/Anvil Fig. 260, with maximum spacing per ASHRAE Standards:

Pipe Size	Steel Pipe	Copper Pipe	PVC Pipe	Rod Size
½ to ¾ inch	6 feet	5 feet	4 feet	3/8"
1 inch	7 feet	5 feet	4 feet	3/8"
1 ¼ inch	7 feet	7 feet	4 feet	3/8"
1½ inch	7 feet	7 feet	4 feet	1/2"
2 inch	10 feet	8 feet	4 feet	1/2"
2½ inch	11 feet	9 feet	4 feet	5/8"
3 inch	11 feet	9 feet	4 feet	5/8"
3 ½ inch	13 feet	11 feet	4 feet	5/8"
4 inch	14 feet	12 feet	4 feet	3/4"
5 inch	14 feet	12 feet	4 feet	3/4"
6 inch	14 feet	--	4 feet	3/4"
8 inch	16 feet	--	4 feet	7/8"
10 inch	16 feet	--	4 feet	7/8"
12 inch	20 feet	--	4 feet	1"
14 inch	20 feet	--	4 feet	1¼"
16 inch	20 feet	--	4 feet	1¼"
18 inch	20 feet	--	4 feet	1¼"

- C. Conform to ASME B31.9, ASTM F708, MSS SP58, MSS SP69 and MSS SP89.
- D. Hangers for Hot Pipe Sizes ½ to 1½ Inch: Malleable iron, adjustable swivel, split ring.
- E. Hangers for Cold Pipes sizes ½" to 1½" and Hot and Cold Pipe Sizes 2 Inches and Over: Carbon steel, adjustable, clevis.
- F. Hangers for Hot Pipe Sizes thru 4 Inches: Carbon steel, adjustable, clevis.
- G. Hangers for Hot Pipe Sizes 5 Inches and Over: Adjustable steel yoke, cast iron roll, double hanger.
- H. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods.
- I. Multiple or Trapeze Hangers for Hot Pipe Sizes 6 Inches and Over: Steel channels with welded spacers and hanger rods, cast iron roll.
- J. Wall Support for Pipe Sizes up thru 3 Inches: Cast iron hook.

- K. Wall Support for Pipe Sizes 4 Inches and Over: Welded steel bracket and wrought steel clamp.
- L. Wall Support for Hot Pipe Sizes 6 Inches and Over: Welded steel bracket and wrought steel clamp with adjustable steel yoke and cast iron roll.
- M. Vertical Support: Steel riser unistrut clamps at high, mid, and low locations.
- N. Floor Support for Cold Pipe all sizes and Hot Pipe Sizes up thru 4 Inches: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
- O. Floor Support for Hot Pipe Sizes 5 Inches and Over: Adjustable cast iron roll and stand, steel screws, and concrete pier or steel support.
- P. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.
- Q. Hanger Rods: Mild steel threaded both ends, threaded one end, or continuous threaded.
- R. Inserts: Malleable iron case of steel shell and expander plug for threaded connection with lateral adjustments, top slot for reinforcing rods, lugs for attaching to forms, size inserts to suit threaded hanger rods.

#### 1.40 PIPING, DUCTWORK AND EQUIPMENT SUPPORT

- A. Attachments of mechanical equipment to structural members are the responsibility of the installing trade. Structural members shall not be field cut, welded or otherwise modified without approval of the Architect/Engineer. Attachment to steel joist shall be made at panel points. When routing piping or ductwork perpendicular to joist, a support shall be provided at every steel joist; when parallel to joist, a support shall be provided at no more than 6' on centers or two panel bays. Structural members shall not be overloaded as a result of attachments. Attachment/equipment loading for all trades resulting in total load greater than an equivalent uniform 5 psf for any member shall be submitted to the Architect/Engineer for review. Mechanical Trades may contact the project Structural Engineer as required for panel point location assistance and welder certification requirements. Electrical Trades are still responsible for design, layout, and fabrication and installation of electrical supports and support attachment methods. Mechanical Trades shall submit attachment methods to the Structural Engineer for review.
- B. Install products in accordance with manufacturer's instructions.
- C. Do not fasten supports to pipes, ducts, mechanical equipment, and conduit.
- D. Do not use spring steel clips and clamps.
- E. Do not use powder-actuated anchors.
- F. Do not drill or cut structural members without permission from Architect/Engineer.

- G. Fabricate supports from structural steel or steel channel. Rigidly weld members or use hexagon head bolts to present neat appearance with adequate strength and rigidity. Use spring lock washers under all nuts.

1.41 PIPING SYSTEMS SHUT OFF VALVES

- A. Shut off valves shall be installed at all branch lines off main piping, or where mains divide/separate to serve different areas, to allow isolation of all branch piping and systems they serve such as air handling units, areas or wings of the building, etc.

1.42 CLEANING AND FINISHING

- A. During construction period, remove all debris, rubbish, tools, equipment, unused materials, etc. as required or requested by the Architect/Engineer. All cost for cleanup and removal will be the responsibility of the contractor.
- B. Upon completion of the project and before final acceptance by the Owner, the entire installation shall be thoroughly cleaned, all rubbish and unused material removed to the satisfaction of the Architect/Engineer. All dust and dirt shall be removed from all equipment, piping, ductwork, etc.
- C. Thoroughly clean all heating units, fans and fan wheels, diffusers and grilles, air handler plenums and air filter frames, etc. using compressed air if necessary.
- D. Finish paint all equipment, materials, piping, etc. as noted on drawings or listed in this specification. Match Owner's existing color scheme. Any Division 23 equipment which has been scratched or damaged shall be finished equal to the original finish.

1.43 DUCTWORK MANUAL BALANCING DAMPERS

- A. All duct branch take off's to diffusers, grilles, regulators, etc. shall have manual balancing dampers installed to allow balancing of outlets.

1.44 EQUIPMENT/SYSTEMS START-UP

- A. Furnish and schedule manufacturer's start-up service for all equipment and systems. These start-up services shall be performed in the presence of, and to the satisfaction of the Owner and Architect/Engineer.

1.45 EQUIPMENT/SYSTEMS SIGN-OFF

- A. The Mechanical Trades shall furnish written sign-offs on all systems stating that the equipment and systems have been checked, tested, started and that their operation has been verified correct through the entire range of operation that can be expected through the seasons.

1.46 SUBSTANTIAL COMPLETION

- A. Contractor shall submit a letter to the Architect/Engineer advising that all work has been completed in accordance with plans and specifications and the project is ready for a final walk-thru.

BAY CITY PUBLIC SCHOOLS- 2020 BOND PROJECTS SERIES 3  
TOILET ROOM RENOVATIONS FOR BAY CITY WESTERN MS / HS  
BAY CITY, MICHIGAN

PROJECT NO. 2019113.33

END OF SECTION

MAI: 2024-1527



SECTION 23 05 53

HVAC IDENTIFICATION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Nameplates.
- B. Tags.
- C. Stencils.
- D. Pipe Markers.

1.2 PRODUCTS INSTALLED BUT NOT FURNISHED UNDER THIS SECTION

- A. Medical Gas Systems: Supply of pipe labels for placement by this Section.

1.3 REFERENCES: Material and/or equipment specified in this section shall meet or exceed one or more of the property requirements or installation requirements of the following specifications/publications as applicable to the specific product or end use:

- A. ANSI or equal standards for the Identification of Piping Systems.

PART 2 PRODUCTS

2.1 NAMEPLATES

- A. Description: Laminated three-layer plastic with engraved black letters on light contrasting background color. Furnish and install on all mechanical equipment.

2.2 TAGS

- A. Metal Tags: Brass with stamped letters; tag size minimum 1½ inch diameter with smooth edges.
- B. Chart: Typewritten letter size list in anodized aluminum frame.

2.3 STENCILS

- A. Stencils: With clean cut symbols and letters of following size:
  - 1. ¾ to 1¼ inch Outside Diameter of Insulation or Pipe: 8 inch long color field, ½ inch high letters.
  - 2. 1½ to 2 inch Outside Diameter of Insulation or Pipe: 8 inch long color field, ¾ inch high letters.
  - 3. 2½ to 6 inch Outside Diameter of Insulation or Pipe: 12 inch long color field, 1¼ inch high letters.
  - 4. 8 to 10 inch Outside Diameter of Insulation or Pipe: 24 inch long color field, 2½ inch high letters.
  - 5. Over 10 inch Outside Diameter of Insulation or Pipe: 32 inch long color field, 3½ inch high letters.

6. Ductwork and Equipment: 2½ inch high letters.

B. Stencil Paint shall be semi-gloss enamel, colors conforming to ASME A13.1.

#### 2.4 PIPE MARKERS

A. Color: Match existing or conform to ANSI/OSHA standards.

B. Plastic Pipe Markers: Factory fabricated, flexible, semi-rigid plastic, preformed to fit around pipe or pipe covering; minimum information indicating flow direction arrow and identification of fluid being conveyed.

C. Plastic Tape Pipe Markers: Flexible, vinyl film tape with pressure sensitive adhesive backing and printed markings.

D. Underground Plastic Pipe Markers: Bright colored continuously printed plastic ribbon tape, minimum 6 inches wide by 4 mil thick, manufactured for direct burial service.

#### 2.5 CEILING TACKS

A. Description: Steel with ¾ inch diameter color coded head.

B. Color code as follows:

1. Yellow - HVAC equipment
2. Red - Fire dampers/smoke dampers
3. Green - Plumbing valves
4. Blue - Heating/cooling valves

### PART 3 EXECUTION

#### 3.1 PREPARATION

A. Degrease and clean surfaces to receive adhesive for identification materials.

B. Prepare surfaces as required by manufacturer's installations for stencil painting.

#### 3.2 INSTALLATION

A. Install plastic nameplates with corrosive-resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.

B. Install tags with corrosion resistant chain.

C. Install plastic pipe markers in accordance with manufacturer's instructions.

D. Install plastic tape pipe markers complete around pipe in accordance with manufacturer's instructions.

E. Install underground plastic pipe markers 6 to 8 inches below finished grade, directly above buried pipe.

- F. Identify each piece of equipment with plastic nameplates. Small devices, such as in-line pumps, may be identified with tags.
- G. Identify control panels and major control components outside panels with plastic nameplates.
- H. Identify thermostats relating to terminal boxes or valves with nameplates.
- I. Identify valves in main and branch piping with tags.
- J. Tag automatic controls, instruments, and relays. Key to control schematic.
- K. Identify piping, concealed or exposed, with plastic tape pipe markers or stenciled painting. Identify service, flow direction, and pressure. Install in clear view and align with axis of piping. Locate identification not to exceed 10 feet on straight runs including risers and drops, adjacent to each valve and tee, at each side of penetration of structure or enclosure, and at each obstruction.
- L. Identify ductwork with stenciled painting. Identify with air handling unit identification number and area served. Locate identification at air handling unit, at each side of penetration of structure or enclosure, and at each obstruction.
- M. Provide ceiling tacks to locate valves or dampers above T-bar type panel ceilings. Locate in corner of panel closest to equipment.
- N. Identify access points at the exterior of all fire, smoke, or combination fire/smoke dampers with a permanent label, having letters not less than ½" in height, reading fire damper, smoke damper or fire/smoke damper respectively.

END OF SECTION

MAI: 2024-1527

SECTION 23 30 00

AIR DISTRIBUTION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Metal ductwork
- B. Nonmetal ductwork.
- C. Casing and plenums.
- D. Single wall spiral duct and fittings
- E. Insulated double wall spiral duct and fittings
- F. Buried ductwork.
- G. Kitchen hood exhaust ductwork.
- H. Dampers.
- I. Duct cleaning.
- J. V.A.V. box with electric heat.
- K. Roof hoods, exhaust fans, grilles and louvers.
- L. Return air fan.
- M. Boiler stack and breeching.
- N. Water heater stack and breeching.
- O. Chemical resistant ductwork.
- P. Operating Room ceiling supply and return air systems.

1.2 REFERENCES: Material and/or equipment specified in this section shall meet or exceed one or more of the property requirements or installation requirements of the following specifications/publications as applicable to the specific product or end use:

- A. ASTM A36 - Structural Steel.
- B. ASTM A90 - Weight of Coating on Zinc-Coated (Galvanized) Iron or Steel Articles.
- C. ASTM A167 - Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
- D. ASTM A366 - Steel, Sheet, Carbon, Cold Rolled, Commercial Quality.

- E. ASTM A480 - General Requirements for Flat-Rolled Stainless and Heat Resisting Steel Plate, Sheet, and Strip.
- F. ASTM A525 - General Requirements for Steel Sheet.
- G. ASTM A527 - Steel Sheet, Zinc Coated (Galvanized) by Hot Dip Process, Lock Forming Quality.
- H. ASTM A568 - Steel, Sheet, Carbon, and High-Strength, Low Alloy, Hot-Rolled and Cold-Rolled.
- I. ASTM A569 - Steel, Carbon (0.15 Maximum, Percent), Hot-Rolled Sheet and Strip, Commercial Quality.
- J. ASTM B209 - Aluminum and Aluminum-Alloy Sheet and Plate.
- K. AWS D9.1 - Welding of Sheet Metal.
- L. NBS PS 15 - Voluntary Product Standard for Custom Contact-Molded Reinforced-Polyester Chemical Resistant Process Equipment.
- M. NFPA 54 - National Fuel Gas Code.
- N. NFPA 70 - National Electric Code.
- O. NFPA 90A - Installation of Air Conditioning and Ventilating Systems.
- P. NFPA 90B - Installation of Warm Air Heating and Air Conditioning Systems.
- Q. NFPA 91 - Installation of Blower and Exhaust Systems for Dust, Stock and Vapor Removal or Conveying.
- R. NFPA 96 - Installation of Equipment for the Removal of Smoke and Grease-Laden Vapors from Commercial Cooking Equipment.
- S. SMACNA - HVAC Air Duct Leakage Test Manual.
- T. SMACNA - HVAC Duct Construction Standards - Metal and Flexible.
- U. SMACNA - Fibrous Glass Duct Construction Standards.
- V. UL 33 - Heat Responsive Links for Fire Protection Systems.
- W. UL 181 - Factory-Made Air Ducts and Connectors.
- X. UL 555 - Fire Dampers and Ceiling Dampers.

### 1.3 SCOPE

- A. The work covered by this specification consists of furnishing all labor, equipment, materials and performing all operations required, for the correct and complete fabrication and installation of ductwork in accordance with the applicable project specifications, drawings, codes, regulations and standards.

#### 1.4 PERFORMANCE REQUIREMENTS

- A. No variation of duct configuration or sizes will be permitted except by written permission from the Engineer. Size round ducts installed in place of rectangular ducts in accordance with ASHRAE table of equivalent rectangular and round ducts.

#### 1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with SMACNA - HVAC Duct Construction Standards - Metal and Flexible as a minimum. Where requirements are specified in this specification, or noted on drawings above the minimum SMACNA Standards, the more stringent specified and noted requirements and practices shall be followed.
- B. Maintain one copy of document on site.

#### 1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years experience.
- B. Installer: Company specializing in performing the work of this section with minimum five years experience.

#### 1.7 REGULATORY REQUIREMENTS

- A. Construct ductwork to NFPA 90A and SMACNA standards, latest edition.

#### 1.8 ENVIRONMENTAL REQUIREMENTS

- A. Do not install duct sealants when temperatures are less than those recommended by sealant manufacturers.
- B. Maintain temperatures during and after installation of duct sealants.

#### 1.9 SPECIAL INSPECTION FOR SMOKE CONTROL (per Michigan Building Code 1704.14)

- A. Special Inspection for Smoke Control: Smoke control systems shall be tested by a special inspector.
- B. Testing scope: The test scope shall be as follows:
  - 1. During erection of ductwork and prior to concealment for the purposes of leakage testing and recording of device location.
  - 2. Prior to occupancy and after sufficient completion for the purposes of pressure difference testing, flow measurements, and detection and control verification.
- C. Qualifications: Special inspection agencies for smoke control shall have expertise in fire protection engineering, mechanical engineering and certification as air balancers.

### PART 2 PRODUCTS

## 2.1 DUCT - SHEET METAL HVAC DUCTWORK

- A. Galvanized Steel Ducts: ASTM A525 and ASTM A527 galvanized steel sheet, lock-forming quality, having G60 zinc coating of in conformance with ASTM A90.
- B. Fasteners: Rivets, bolts, or sheet metal screws.
- C. Sealant:
  - 1. Non-hardening, water resistant, fire resistive, compatible with mating materials; liquid used alone or with tape, or heavy mastic. All ductwork joints, connections, etc. shall be sealed.
- D. Duct Hangers: Rod and trapeze duct support shall be used for all ductwork with one dimension 18" or larger. Smaller duct may be installed with strap hanger system using SMACNA Standard as minimum.
  - 1. Hanger Rod: ASTM A36; steel; threaded both ends, threaded one end, or continuously threaded, with steel angle trapeze and non-eccentric beam clamps.
  - 2. Hanger rods, angles trapeze sizing and spacing shall meet SMACNA standards, and local and state building codes for duct sizes being supported.
  - 3. Straps and hanger attachment system sizing, spacing, and installation shall meet SMANCA Standards, local and state building codes, etc. for duct size and supports.
  - 4. Duct hangers shall not be supported from metal deck. Furnish and install all support steel as required to suspend with beam clamps similar to Grinnell Fig. 260 from structural steel joists or beams.

## 2.2 DUCTWORK FABRICATION

- A. Fabricate and support in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible as a minimum. Where requirements are specified in this specification, or noted on drawings above the minimum SMACNA Standards, the more stringent specified and noted requirements and practices shall be followed. Provide duct material, gages, reinforcing, and sealing for operating pressures not less than 6" w.c. on upstream side (higher pressure side) of variable air volume boxes. Return air duct, exhaust air duct and downstream side of variable air volume boxes (low pressure side) shall be constructed to not less than 2" w.c.
- B. Construct T's, bends, and elbows with radius of not less than 1½ times width of duct on centerline. Where not possible, and engineer's written approval is obtained, rectangular elbows may be used, provided turning vanes are utilized. Where acoustical lining is indicated, provide turning vanes of perforated metal with glass fiber insulation.
- C. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.
- D. Fabricate continuously welded round and oval duct fittings two gages heavier than duct gages indicated in SMACNA Standard. Joints shall be minimum 4 inch cemented slip joint, brazed or electric welded. Prime coat welded joints.

- E. Provide standard 45 degree lateral wye takeoffs unless otherwise indicated where 90 degree conical tee connections may be used.
- F. Duct Sealant
- G. All ductwork including supply air, outside air, return air, exhaust air and relief air ductwork shall have joints sealed.
  - 1. Ductwork designed at SMACNA 6" pressure shall meet SMACNA Class "A" seal requirements.
  - 2. Ductwork designed at SMACNA 2" pressure shall meet SMACNA Class "C" seal requirements.

### 2.3 MANUFACTURED DUCTWORK AND FITTINGS

- A. Manufacture in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible as a minimum. Where requirements are specified in this specification, or noted on drawings above the minimum SMACNA Standards, the more stringent specified and noted requirements and practices shall be followed. Provide duct material, gages, reinforcing, and sealing for operating pressures not less than 6" w.c. unless otherwise noted on drawings.
  - 1. Flat Oval Ducts:
    - a. Machine made from round spiral lockseam duct with light reinforcing corrugations; fittings manufactured of at least two gages heavier metal than duct.
  - 2. Double Wall Insulated Flat Oval Ducts:
    - a. Machine made from round spiral lockseam duct with light reinforcing corrugations, galvanized steel outer wall, 1 inch (25 mm) thick fiberglass insulation, perforated galvanized steel inner wall; fittings manufactured with solid inner wall.
  - 3. PVC Coated Steel Ducts:
    - a. UL 181, Class 1, galvanized steel duct coated with polyvinyl chloride plastic, 4 mil (0.1 mm) thick on outside and 2 mil (0.05 mm) thick on inside.
  - 4. Double Wall Insulated Round Ducts:
    - a. Round spiral lockseam duct with galvanized steel outer wall, 1 inch (25 mm) thick fiberglass insulation, perforated galvanized steel inner wall; fitting with solid inner wall.
  - 5. Transverse Duct Connection System:
    - a. SMACNA rated rigidly class connection, interlocking angle and duct edge connection system with sealant, gasket, cleats, and corner clips for not less than 6" w.c. operating pressure unless otherwise noted on drawings.

### 2.4 SINGLE WALL SPIRAL DUCT AND FITTINGS

- A. General
  - 1. All round and/or flat oval spiral duct and fittings shall be manufactured by a company whose primary business is the manufacture of spiral duct and fittings and who has been in business for at least ten (10) years. All spiral duct and fittings shall be manufactured by the same firm and shall be as shown on the contract drawings.
  - 2. All spiral duct and fittings shall be manufactured from G-60 galvanized steel meeting ASTM A924 and A653 requirements, with a prime coat finish.



B. Construction

1. Branch connections shall be made with 90° conical and 45° straight taps as shown on the drawings. All branch connections shall be made as a separate fitting. Factory or field installation of taps to spiral duct shall not be allowed without written approval of the engineer. Manufacturer's published individual fitting performances shall be on file with the design engineer ten (10) days prior to bid.
2. All elbows shall be fabricated with a centerline radius of 1.5 times the diameter. 90° and 45° elbows in diameters 3" round through 10" round shall be stamped or pleated elbows. All other elbows shall be of the gored type, fabricated in accordance with the following:

<u>DEGREE OF ELBOW</u>	<u>NUMBER OF GORES</u>
less than 36°	2
37° thru 71°	3
72° thru 90°	5

Where it is necessary to use two-piece mitered elbows, they shall have a minimum number of vanes in accordance with the following:

<u>DUCT DIAMETER</u>	<u>NUMBER OF VANES</u>
3" thru 9"	2
10" thru 20"	3
21" and up	5

3. Circumferential and longitudinal seams of all fittings shall be a continuous weld or spot welded and sealed with mastic. All welds shall be painted to prevent corrosion.
4. All field joints up to and including 60" shall be made with a 2" slip-fit or slip coupling. Diameters 62" round and larger shall be joined with 2"x2"x3/16" Vanstone flanges for fittings and solid welded flanges for spiral duct.
5. Proprietary connectors such as manufactured by Ductmate or AccuFlange may also be used in lieu of slip connections or angle flanges.
6. Access doors shall be supplied by the duct manufacturer at all fire and/or smoke dampers.
7. All flanges and access doors shall be factory installed. Shipments of loose flanges, access doors or taps for field installation into spiral duct will not be allowed.

C. Metal Gauges

1. Metal gauges for single wall round ducts shall be as follows:
  - a. Round ducts with maximum 2" W.G. positive static pressure:

<u>DUCT DIAMETER</u>	<u>SPIRAL DUCT</u>	<u>FITTINGS AND LONGITUDINAL SEAM DUCT</u>
3" thru 26"	26	24
28" thru 36"	24	22
38" thru 50"	22	20
52" thru 60"	20	18

62" thru 78" 18 16

b. Round ducts with maximum 2" W.G. negative static pressure:

<u>DUCT DIAMETER</u>	<u>SPIRAL DUCT</u>	<u>FITTINGS AND LONGITUDINAL SEAM DUCT</u>
3" thru 17"	26	24
18" thru 20"	24	22
21" thru 22"	24	20
24" thru 26"	22	20
28" thru 30"	22	18
32" thru 34"	20	18
36" thru 42"	20	16
44" thru 48"	20	18(note 1 & 3)
50" thru 60"	18	18(note 2 & 3)

Notes:

1. Reinforce with 1"x1"x1/8" girth rings every 6 feet.
2. Reinforce with 1 1/4" x 1 1/4" x 3/16" girth rings every 4 ft.
3. When companion flange joints are used as reinforcement, 44" to 48" diameter shall be 2"x2"x3/16" and 50" to 60" diameter shall be 2 1/2"x2 1/2" x 3/16".

D. Manufacturers

1. All spiral duct fittings shall be as manufactured by SEMCO Incorporated or approved equal.

2.5 INSULATED DUAL WALL SPIRAL DUCT AND FITTINGS

A. General

1. All round and/or flat oval spiral duct and fittings shall be manufactured by a company whose primary business is the manufacture of spiral duct and fittings and who has been in business for at least ten (10) years. All spiral duct and fittings shall be manufactured by the same firm and shall be as shown on the contract drawings.
2. All spiral duct and fittings shall be manufactured from G-60 galvanized steel meeting ASTM A924 and A653 requirements, and shall have double wall construction with internal 1" fiberglass insulation, perforated galvanized liner, and exterior prime coat finish.

B. Construction

1. Branch connections shall be made with 90° conical and 45° straight taps as shown on the drawings. All branch connections shall be made as a separate fitting. Factory or field installation of taps to spiral duct shall not be allowed without written approval of the engineer. Manufacturer's published individual fitting performances shall be on file with the design engineer ten (10) days prior to bid.
2. All elbows shall be fabricated with a centerline radius of 1.5 times the diameter. 90° and 45° elbows in diameters 3" round through 10" round shall be stamped or pleated elbows. All other elbows shall be of the gored type, fabricated in accordance with the following:

<u>DEGREE OF ELBOW</u>	<u>NUMBER OF GORES</u>
------------------------	------------------------

less than 36°	2
37° thru 71°	3
72° thru 90°	5

Where it is necessary to use two-piece mitered elbows, they shall have a minimum number of vanes in accordance with the following:

<u>DUCT DIAMETER</u>	<u>NUMBER OF VANES</u>
3" thru 9"	2
10" thru 20"	3
21" and up	5

3. Circumferential and longitudinal seams of all fittings shall be a continuous weld or spot welded and sealed with mastic. All welds shall be painted to prevent corrosion.
4. All field joints up to and including 60" shall be made with a 2" slip-fit or slip coupling. Diameters 62" round and larger shall be joined with 2"x2"x3/16" Vanstone flanges for fittings and solid welded flanges for spiral duct.
5. Proprietary connectors such as manufactured by Ductmate or AccuFlange may also be used in lieu of slip connections or angle flanges.
6. Access doors shall be supplied by the duct manufacturer at all fire and/or smoke dampers.
7. All flanges and access doors shall be factory installed. Shipments of loose flanges, access doors or taps for field installation into spiral duct will not be allowed.
8. The spiral duct shall be double wall and shall be constructed of an outer shell, a 1" thick layer of fiberglass insulation, and an inner metal liner. Insulation shall have a thermal conductivity "K" factor of .26 BTU/hr./sq.ft./°F or less.
9. The inner metal liner for all spiral and longitudinal seam duct shall be perforated metal. All fittings from fan discharge to a point where 35 lineal feet of spiral duct has been used shall have a perforated metal liner. All other fittings shall have a solid metal liner which may be one even gauge lighter than that shown for perforated liners.

C. Metal Gauges

1. Metal gauges for dual wall round ducts shall be as follows:
  - a. Round ducts with maximum 2" W.G. positive static pressure

<u>INSIDE DIAMETER</u>	<u>FITTINGS AND LONGITUDINAL SEAM DUCT</u>			
	<u>SHELL</u>	<u>PERF. LINER</u>	<u>SHELL</u>	<u>PERF. LINER</u>
3" thru 8"	26	26(non-ribbed)	24	24
9" thru 24"	26	26(ribbed)	24	24
26" thru 34"	24	26(ribbed)	22	24
36" thru 48"	22	26(ribbed)	20	22
50" thru 58"	20	26(ribbed)	18	22
60" thru 62"	18	26(ribbed)	16	22
62" thru 76"	18	22(non-ribbed)	16	22

- b. Round ducts with maximum 2" W.G. negative static pressure.

<u>INSIDE DIAMETER</u>	<u>SPIRAL DUCT</u>		<u>FITTINGS AND LONGITUDINAL SEAM DUCT</u>	
	<u>SHELL</u>	<u>PERF. LINER</u>	<u>SHELL</u>	<u>PERF. LINER</u>
3" thru 8"	26	26(non-ribbed)	24	24
9" thru 15"	26	26(ribbed)	24	24
16" thru 20"	24	26(ribbed)	22	24
22" thru 24"	22	26(ribbed)	20	24
26" thru 28"	22	26(ribbed)	18	24
30" thru 32"	20	26(ribbed)	18	24
34" thru 40"	20	26(ribbed)	16	22
42" thru 46"	20	22(non-ribbed)	18(see notes)	22
48" thru 58"	18	22(non-ribbed)	18(see notes)	22

Notes:

1. Reinforce with 1"x1"x1/8" girth rings every 6 feet.
  2. When companion flange joints are used as reinforcement, 44" to 48" diameter shall be 2"x2"x3/16" and 50" to 60" diameter shall be 2½"x2½" x 3/16".
- D. Manufacturers
1. All spiral duct fittings shall be as manufactured by SEMCO Incorporated or approved equal.

2.6 CASINGS

- A. Fabricate casings in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible as a minimum. Where requirements are specified in this specification, or noted on drawings above the minimum SMACNA Standards, the more stringent specified and noted requirements and practices shall be followed. Construct for not less than 6" w.c. unless otherwise noted on drawings.
- B. Mount floor mounted casings on concrete curbs. At floor, rivet panels on 8 inch centers to angles. Where floors are acoustically insulated, provide liner of 18 gage galvanized expanded metal mesh supported at 12 inch centers, turned up 12 inches at sides with sheet metal shields.
- C. Reinforce door frames with steel angles tied to horizontal and vertical plenum supporting angles. Install hinged access doors where indicated or required for access to equipment for cleaning and inspection.
- D. Fabricate acoustic casings with reinforcing turned inward. Provide 16 gage back facing and 22 gage perforated front facing with 3/32 inch diameter holes on 5/32 inch centers. Construct panels 3 inches thick packed with 4.5 lb/cu ft minimum glass fiber media, on inverted channels of 16 gage.

2.7 EQUIPMENT FLEXIBLE DUCT CONNECTIONS (To air moving equipment.)

- A. Fabricate in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible as a minimum. Where requirements are specified in this

specification, or noted on drawings above the minimum SMACNA Standards, the more stringent specified and noted requirements and practices shall be followed.

- B. Connector: Fabric crimped into metal edging strip.
  - 1. Fabric: UL listed fire-retardant neoprene coated woven glass fiber fabric to NFPA 90A, minimum density 30 oz per sq yd.
  - 2. Net Fabric Width: Approximately 3 inches wide.
  - 3. Metal: 3 inch wide 24 gage galvanized steel.

## 2.8 FLEXIBLE INSULATED DUCTS

- A. All flexible ducts used to connect diffuser, grilles, etc. shall be similar to Flexmaster USA, Inc.; Type #3. Flex duct shall be insulated type consisting of a factory fabricated assembly of a trilaminate of aluminum foil, fiberglass and polyester. It shall be mechanically locked without adhesive into a formed aluminum helix on the ducts outside surface and shall withstand a minimum 6" w.c. operating pressure. The duct material shall be factory wrapped in a thick blanket of fiberglass insulation with a "C" factor of .25 or less. The insulation shall be encased in a fire retardant polyethylene protective vapor barrier with a perm rating of not over 0.1 grains per square foot per hour per inch of mercury. The flexible duct shall be constructed in accordance with and be listed as UL 181 Class I air duct and comply with NFPA 90A and 90B and have a flame spread of not over 25 and a smoke developed of not over 50. The flexible duct shall have a minimum pressure rating of 12" w.c. through a temperature range of -20°F to 250°F. Flexible duct shall be UL rated.
- B. Maximum length of flexible duct shall be 5'-0" to each outlet unless indicated otherwise on drawing.
- C. Flexible duct shall be installed without bends unless so indicated on drawing.

## 2.9 DUCT SPIN-IN FITTINGS

- A. Low pressure spin-in fittings (take-offs from main duct to flexible duct) shall be similar to Flexmaster USA, Inc. Model CB-D conical bellmouth fitting with damper and positive locking wing nut. Edges of the take-off opening in the duct shall be sealed with fire retardant duct sealer.

## 2.10 AIR TURNING DEVICES/EXTRACTORS

- A. Multi-blade device with blades aligned in short dimension, steel construction, with individually adjustable blades and mounting straps.

## 2.11 BACKDRAFT DAMPERS.

- A. Gravity Backdraft Dampers, Size 18 x 18 inches or Smaller, Furnished with Air Moving Equipment: Air moving equipment manufacturers standard construction.
- B. Multi-Blade, Parallel Action Gravity Balanced Backdraft Dampers: 16 gage thick galvanized steel with center pivoted blades of maximum 6 inch width, with felt or flexible vinyl sealed edges, linked together in rattle-free manner with 90 degree

stop, steel ball bearings, and plated steel pivot pin; adjustment device to permit setting for varying differential static pressure.

2.12 EXHAUST FANS

- A. See schedules on drawings and furnish all.

2.13 DIFFUSERS AND GRILLES

- A. See schedules on drawings and furnish all.

2.14 LOUVERS

- A. See schedule on drawings and furnish all.

- A. Motors

1. Motors shall be mounted integral to an isolated fan assembly furnished by the unit manufacturer. Motors shall be mounted inside the unit casing. Motors shall be mounted on a slide base to permit adjustment of drive belt tension.
2. Motor shall conform with requirements of Section 23 05 00 of these specifications.

- B. Drives

1. Drives shall be constant speed with fixed pitch sheaves.
2. Drives shall be selected at 1.5 service factor.

PART 3 EXECUTION

3.1 DUCT INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install and seal ducts in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible as a minimum. Where requirements are specified in this specification, or noted on drawings above the minimum SMACNA Standards, the more stringent specified and noted requirements and practices shall be followed. Note: All ductwork joints, fittings, etc. shall be sealed.
- C. Duct Sizes are inside clear dimensions. For lined ducts, maintain sizes inside lining.
- D. Provide openings in ductwork for pitot tube where required for testing of systems, complete with metal can with spring device or screw to ensure against air leakage. Where openings are provided in insulated ductwork, install insulation material inside a metal ring.
- E. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.
- F. Use crimp joints with bead for joining round duct sizes 8 inch and smaller with crimp in direction of air flow.
- G. Use double nuts and lock washers on threaded rod supports.

- H. Slope underground ducts to plenums or low pump out points at 1/8" per foot. Provide access doors for inspection.
- I. Tape joints of PVC coated metal ductwork with PVC tape.
- J. Insulate buried supply duct runs with two inch thick insulation styrofoam covered with plastic vapor barrier.
- K. Connect flexible ducts to metal ducts mechanically without adhesives. Connect outlets to low pressure ducts with flexible duct held in place with strap or clamp.
- L. Coordinate duct locations with available space, route ducts around obstructions as required, and review duct changes with Engineer, all before starting construction.
- M. Set plenum doors 6 to 12 inches above floor. Arrange door swings so that fan static pressure holds door in closed position.
- N. Provide residue traps in kitchen hood exhaust ducts at base of vertical risers with provisions for clean out. Use stainless steel for ductwork exposed to view and stainless steel or carbon steel for ducts where concealed.
- O. During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.
- P. Install manual balancing dampers in ductwork at all branch take-offs, all diffuser and grille take offs, etc.
- Q. Install roof exhaust fans on minimum 18" high roof curbs but not less than 12" higher than parapet walls within 10'-0" of fan.

### 3.2 DUCT CLEANING

- A. Clean duct system and force air at high velocity through duct to remove accumulated dust. To obtain sufficient air, clean half the system at a time. Protect equipment which may be harmed by excessive dirt with temporary filters, or bypass during cleaning.

A. .

### 3.3 DIFFUSER AND GRILLE INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Check location of outlets and inlets and make necessary adjustments in position to conform with architectural features, symmetry, and lighting arrangement.
- C. Install diffusers to ductwork with air tight connection.
- D. Provide balancing dampers on duct take-off to diffusers, grilles and registers, whether dampers are specified as part of the diffuser, grille or register assembly.
- E. Paint ductwork visible behind air outlets and inlets matte black.

- F. Diffuser/grille color shall be selected from the full range of manufacturer available colors and finishes.

END OF SECTION

MAI: 2024-1527



SECTION 26 00 00

BASIC ELECTRICAL REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Basic electrical Requirements specifically applicable to Division 26 & 28 Sections, in addition to Division 1 - General Requirements.
- B. Information in this section is intended to clarify or make additions to the requirements set forth in the General Conditions, Supplementary Conditions and Division 1 of these specifications. Any conflict between Division 26 & 28 and those in the General Conditions or within the Division 26 drawings, Supplementary Conditions and Division 1 shall be brought to the attention of the Architect/Engineer in writing as a request for addendum prior to the bid opening.
- C. Furnish all equipment, materials, articles, items, operations or methods listed, mentioned or scheduled on drawings, these specifications, manufacturer's installation instructions and include all labor materials, equipment and incidentals necessary for complete installation and operation.
- D. All information contained in this section applies to all sections within Division 26 as it was part of each section.
- E. Final walk-thru. Electrical Contractor shall submit in writing to the Architect's office or the Construction Manager advising that all of the Division 26 & 28 work has been completed in accordance with the plans and specifications. The intent is to acknowledge the Contractor is ready for a walk-thru. Open items that are part of the required construction work should be completed prior to the final walk-thru to avoid developing a so called construction completion list. The engineer reserves the right to reschedule the final walk-thru as determined accordingly.
- F. Pre-bid questions. All pre-bid questions, clarifications, etc. must be submitted in writing to the Architect Office or the Construction Manager. All phone calls, faxes or e-mails from bidders and manufacturers, etc. directly received by the Engineers office during the bidding phase will be deferred back to the Architect Office or the Construction Manager.
- G. Electrical Contractor shall review all of the project plans and specifications and not rely solely on the electrical drawings to establish a project bid. Refer to the structural and mechanical drawings for final mechanical equipment locations. Mechanical drawings shall govern over the electrical drawing locations.
- H. Unit Pricing: Contractor shall furnish pricing as listed in the Bid Proposal Forms.

- I. The Contractor shall include in their bid any cost for requesting AutoCAD backgrounds for their use from the Architect or Engineer. The cost will be \$150.00 for the first plan, and \$50.00 for each additional plan that may be requested for AutoCAD use. A waiver of responsibility for the Architect and Engineer related to Contractor use of the CAD files shall be signed by the Contractor.

## 1.2 LAYOUT OF THE WORK

- A. Examine the site and all the drawings before proceeding with the layout and installation of this work. Verify all door swings and clearances to cabinets, etc., before locating switch and outlet boxes. Locate conduit, boxes, etc., essentially as shown on the drawings but in exact layout determined on the job to suit actual conditions. Confer and cooperate with the other trades on the job so all parts will be installed in proper relationship. Precise locations of parts to coordinate with other work is the responsibility of the Contractor.
- B. The Electrical Trades shall complete all cutting and patching for the electrical work, unless noted or specified otherwise. Division 26 & 28 Contractor shall be responsible to coordinate with the site Restoration Contractor for the new underground electrical work.
- C. Arrange exposed work as closely as practicable to wall or ceiling surfaces in an accurate alignment. Locate concealed work so fittings, connectors and other projections will clear surfaces. Exposed work is defined as non-finished spaces, such as mechanical/electrical rooms or as indicated on architectural room schedules. All finished spaces, installation shall be concealed. Refer to Architectural drawing for room finish schedules.
- D. During the bidding phase, if any design or discrepancy issues are discovered between the electrical drawings, specifications and other project plans, the contractor shall notify the Architect/Engineer. The intent is to resolve any issues during the bidding phase. For pertinent issues, addendums will be issued accordingly. After entering into a contract, it shall be considered there are no identified conflicts.

## 1.3 INTERFERENCES

- A. The Electrical Contractor shall examine the plans of mechanical trades, the architectural and structural drawings and shall notify the Architect/Engineer to resolve such interference or discrepancy. The Electrical Contractor bid shall not be based solely on the Electrical Plans and Specifications. Contractor shall obtain and review all project documents. The Contractor shall make such changes or off-sets as required so that the work shall be properly located and coordinated with the other trades. Failure to comply with the foregoing will not relieve contractor's responsibilities of making such changes. Such changes shall be completed at no additional cost to the Owner.
- B. All changes in location of equipment, fixtures, distribution equipment, receptacles, etc., from those shown on plans, shall be made without charge

when directed by the Architect/Engineer before installation. At this time, an agreement shall be made if such a change is an additional cost to the owner.

- C. The Electrical Contractor shall confer with other trades regarding location and size of pipes, equipment, fixtures, conduit, duct openings, switches, outlets, etc., in order that there may be no interference in the installation of the work of any trades or delay in the progress of any work.
- D. The Electrical Contractor shall be responsible for confirming final receptacle, data, and switch heights at countertop and casework locations with the architectural details. Architectural details shall govern final locations and mounting heights. Failure to coordinate will not relieve the contractor of making changes as required, at no cost to the owner.
- E. Any changes made, necessary through failure to make proper arrangement to avoid interference, shall not be considered as extra.
- F. The Electrical Contractor shall cooperate with those performing work under other divisions in his preparation of interference drawings, to the extent that the location of plumbing piping, heating piping, and/or ventilation ducts, with respect to the installation of other trades, shall be mutually agreed on by those performing work under other divisions.
- G. In the event the described work on the drawings doesn't match requirements described in the specification, the more stringent shall be provided.
- H. Electrical Contractor shall review the Architectural drawings for work station, casework details and section drawings that show raceway details. Furnish the raceway as noted and detailed.
- I. Contractor shall carefully review the Code sections pertaining to safe working clearances to avoid piping, ducts interferences and other equipment. Install the electrical equipment to meet Code requirements. Adjust the locations shown as required.

#### 1.4 MATERIALS AND WORKMANSHIP

- A. All materials and equipment furnished for installation on this project shall be new and in strict accordance with this specification. All packaged materials shall be delivered in the original containers which show the manufacturer's name and the identifying designations as to size, quality, etc. Materials delivered to the job in unmarked or mutilated packages will be immediately inspected by the Contractor. Materials or equipment judged as "damaged" by the Contractor's own inspection shall be immediately addressed with the supplier. All electrical equipment shall bear the Underwriter's Label.
- B. All work shall be performed in a professional manner under the supervision of the electrical project manager. The project manager shall be considered the main point of contact for the Architect/Owner's daily communication.

- C. Should any dispute arise as to the quality or fitness of the materials or workmanship, Architect, Owner, Engineer and Electrical Contractor shall mutually agree work is non-acceptable and shall be reworked at no additional cost to the Owner.
- D. Division 26 & 28 equipment schedule descriptions shall govern if it is found that the manufacturer's catalog numbering shown on the drawing is not current, or changed by the manufacturer without notification. Division 26 & 28 Contractor shall notify the Architect/Engineer with any conflicts during the bidding phase to get clarifications. After entering into a Contract, it shall be considered the equipment schedules provide the information to meet the intended specifications for quality and performance.

#### 1.5 GUARANTEES

- A. All equipment and work performed under Division 26 & 28 shall be guaranteed for one (1) year from time of substantial completion of project, unless directed otherwise in Division 1.

#### 1.6 VOLUNTARY ALTERNATES

- A. The Architect/Engineer will only accept voluntary alternate as a bid deduct. Alternate must maintain the same level of quality to meet the design intent. Voluntary alternates must be submitted with the bid for review by the Owner. Failure to comply will be no reason to accept any voluntary alternates after entering into a contract.

#### 1.7 OWNERS ACCEPTANCE OF EQUIPMENT

- A. Refer to Division 1.
- B. Upon the Owner's written acceptance, the Electrical Contractor's guarantee period shall begin and the Owner shall accept the responsibility for operation and maintenance and the Contractor's liability shall be limited to the conditions covered in the guarantee as described in these specifications.

#### 1.8 REFERENCES

- A. Conform to requirements of 2015 Michigan Building Code, 2023 National Electrical Code, 2023 Michigan Electrical Code Rules Part 8, 2017 ICC/ANSI A117.1 and local code requirements.

#### 1.9 SUBMITTALS

- A. Submit electronic shop drawing files.
- B. Proposed Products List: Include Products specified in the following Sections:
  - 1. Section 26 09 23 - Lighting Control Devices
  - 2. Section 26 24 16 - Panelboards
  - 3. Section 26 27 26 - Wiring Devices

4. Section 26 51 00 - Interior Lighting
  5. Section 28 46 13 - Fire Alarm System
- C. Submit shop drawings and product data grouped to include complete submittals of related systems, products, and accessories in single submittals.
  - D. Mark dimensions and values in units to match those specified.
  - E. Shop drawings shall be reviewed and checked by the Electrical Contractor for specification compliance prior to release for the Engineer's review. Failure to comply will be no cause or reason for additional costs to the Owner with project delays.
  - F. Electrical distribution submittal shall include cut sheets for each piece of equipment. Written description is not acceptable.
  - G. Bill of materials shall be submitted as part of O&M Manual. Bill of Materials is not considered a shop drawing.

#### 1.10 REGULATORY REQUIREMENTS

- A. Conform to applicable Building Code.
- B. Conform to requirements of 2015 Michigan Building Code, 2023 National Electrical Code, 2023 Michigan Electrical Code Rules Part 8, 2017 ICC/ANSI A117.1 and local code requirements.
- C. Equipment: U.L. tested and approved for its purpose.
- D. The Electrical Contractor shall obtain and pay for all permits and inspection fees. Provide the Owner with final inspection documents from authorities having jurisdiction.
- E. State of Michigan, Bureau of Fire Services for Emergency Lighting and Fire Alarm Plan Review.
- F. Equipment: Conform to requirements of 2015 Michigan Building Code, 2023 National Electrical Code, 2023 Michigan Electrical Code Rules Part 8, 2017 ICC/ANSI A117.1 and local code requirements.
- G. Life Safety NFPA 101 - The State of Michigan current adopted edition.
- H. Fire Alarm Code NFPA 72 - The State of Michigan current adopted edition.
- I. 2015 Michigan Energy Code.
- J. ASHRAE 90.1 2013 Edition.
- K. 2019 School Rules.

1.11 PROJECT/SITE CONDITIONS

- A. Install Work in locations shown on drawings, unless prevented by project conditions.
- B. All bidders shall personally inspect the site and acquaint themselves with all existing conditions involved in execution of this contract, and make all necessary measurements. No "extra" will be considered for additional work required because of bidder's failure to do so.

1.12 TEMPORARY SERVICES

- A. Division 26 Trades shall provide and maintain wiring for all interior construction lighting and power to meet OSHA Standards. Division 26 Trade shall provide and maintain all required lamps and guards. Contractor's power tools, cords, etc. shall be in strict accordance with National Electrical Code 2023, Article 590.
- B. Electrical Contractor shall pay for all temporary internet and power for their office and or construction trailer.
- C. Electrical Contractor shall be responsible to review Division 1 requirements to provide project temporary lighting and power requirements for the construction and demolition phases.

1.13 RECORD DRAWINGS

- A. The Electrical Contractor shall furnish as-constructed drawings, including all Addendums, Bulletins and associated Field Directed Changes included as part of the record drawings.

1.14 OPERATION AND MAINTENANCE MANUALS

- A. Verbal instruction and written operational instructions are to be given on all equipment and systems under this contract. A time is to be scheduled with the Architect/Engineer and Owner for these instructions and a time submitted in writing for instructions at the facility.
- B. Two (2) bound sets of Operating and Maintenance Manuals are to be submitted to the Architect/Engineer for approval. Manuals are to include complete parts list and maintenance procedures as well as operating instructions on all equipment supplied under Division 26 & 28.

END OF SECTION

MAI: 2024-1527

SECTION 26 05 05

SELECTIVE DEMOLITION FOR ELECTRICAL

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Electrical demolition per plans and specifications.
- B. Conduit supports.

1.2 RELATED SECTIONS

- A. All drawings and specification sections apply to work in this section. Furnish all items, articles, materials, equipment, operations or methods that are mentioned, listed or scheduled on drawings or are in this specification including all labor, equipment, materials and miscellaneous incidentals necessary and/or required for the completion of this project. The work covered under this section of the specifications is in no way complete within itself but is supplementary to the entire specification and drawings.

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

- A. Materials and equipment for patching and extending work: As specified in individual Sections.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Electrical Contractor shall examine the project documents and visit the site as they deem necessary prior to submitting a bid. Do not rely solely on the Electrical Plans for all demolition requirements. Review all Project Documents prior to submitting a bid.
- B. The demolition information is provided to assist with labor costs associated with the electrical systems removal. The Electrical Contractor shall be responsible to confirm all quantities and the information provided.
- C. Upon removal of the existing ceiling, the Electrical Trades shall immediately notify the construction manager, Architect and Engineer in writing regarding existing conduits scheduled to remain that are not properly supported. Conduit evaluation shall be conducted with the Owner, Architect and Engineer. Failure for the Electrical Trades to submit a written conduit support condition will obligate the trade to support the conduits to meet current Code methods at no additional cost to the Owner.

3.2 PREPARATION

- A. Confirm with the Architect's Office and/or Construction Manager Project Schedules and review the Architectural, Structural and Mechanical drawings prior to commencing demolition.

### 3.3 DEMOLITION

- A. As noted or shown on the demolition plans, remove the lighting. Use care during the demolition phase to avoid damage or any glazed block, tile or brick veneered walls. Electrical Contractors are responsible to confirm all quantities and information provided.
- B. Electrical Trades shall remove all existing fire alarm devices as noted and associated conduits and surface mounted raceways. Patch to match. Temporarily support device and reinstall.
- C. Electrical Trades shall transport all of the electrical salvaged materials to the Owner and include all transportation costs.
- D. Remove all unused conduits and wiring serving lighting and power being removed from the finished ceiling space. Remove all abandoned low voltage cables from accessible portions in accordance with NEC Sections 760.25(A), 640(A), 645.3(A), 725.3(B), 770.3(A), 800.3(C), 820.3(A) and 830.3(A). Include costs in bid to walk the ceiling spaces with the Construction Manager and the Owner for visual assessment of abandoned cables.
- E. Electrical Contractors are responsible to confirm all demolition quantities. Make pre-bid site visit arrangements as deemed necessary.

END OF SECTION

MAI: 2024-1527



SECTION 26 05 19

LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Building wire and cable.
- B. MC cable
- C. Non-metallic "NM" sheath cable.

1.2 RELATED SECTIONS

- A. All drawings and specification sections apply to work in this section. Furnish all items, articles, materials, equipment, operations or methods that are mentioned, listed or scheduled on drawings or are in this specification including all labor, equipment, materials and miscellaneous incidentals necessary and/or required for the completion of this project. The work covered under this section of the specifications is in no way complete within itself but is supplementary to the entire specification and drawings.

1.3 REFERENCES

- A. Conform to requirements of 2015 Michigan Building Code, 2023 National Electrical Code, 2023 Michigan Electrical Code Rules Part 8, 2017 ICC/ANSI A117.1 and local code requirements.

1.4 PROJECT CONDITIONS

- A. Verify that field measurements are as shown on Drawings.
- B. Conductor sizes are based on copper.
- C. Routing shown on Drawings is approximate unless dimensioned. Field route as required to best suit Project Conditions.
- D. Where wire and cable routing is not shown, and only a load destination is shown, determine exact routing and lengths required.

1.5 COORDINATION

- A. Coordinate Work under provisions of Division 1.
- B. Determine required separation between cable and other work.
- C. Determine cable routing to avoid interference with other work.

1.6 REGULATORY REQUIREMENTS

- A. Conform to requirements of 2015 Michigan Building Code, 2023 National Electrical Code, 2023 Michigan Electrical Code Rules Part 8, 2017 ICC/ANSI A117.1 and local code requirements.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and indicated.

## PART 2 PRODUCTS

### 2.1 BUILDING WIRE AND CABLE

- A. Description: Single conductor insulated wire.
- B. Conductor: Copper.
- C. Insulation Voltage Rating: 600 volts.
- D. Insulation: ANSI/NFPA 70, Type THW, THHN/THWN, XHHW-2.

### 2.2 MC CABLE

- A. Factory assembled multiple insulated conductors enclosed in armor of interlocking metal corrugated sheath.
- B. Provide all clips and supports.

### 2.3 NON-METALLIC SHEATH CABLE

- A. Use "NM" "Romex" cable. Not acceptable for this project.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify that mechanical work likely to damage wire and cable has been completed.

### 3.2 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Use stranded conductors for control circuits.
- C. Use conductor size not smaller than 12 AWG for power and lighting circuits.
- D. Use 10 AWG conductors for 20 ampere, 120 volt branch circuits longer than 100 feet.
- E. Use 10 AWG conductors for 20 ampere, 277 volt branch circuits longer than 200 feet.
- F. Pull all conductors into raceway at same time.

- G. Protect exposed cable from damage.
- H. Support cables above accessible ceiling, using spring metal clips or plastic cable ties to support cables from structure. Do not rest cable on ceiling panels.
- I. Use suitable cable fittings and connectors.
- J. Neatly train and lace wiring inside boxes, equipment, and panelboards.
- K. Clean conductor surfaces before installing lugs and connectors.
- L. Splices are not permitted.
- M. All power wiring shall be installed in conduit. Low-voltage wiring shall utilize the channel trays-hooks or free-air method, or other cable management methods that meet industry standards as noted on the drawings. Conduit drops for fire alarm devices, card readers, power assisted doors, and voice/data outlets shall be required. Electrical Trades shall be responsible for coordinating with the Owner's low-voltage system and drawings for required raceway. Low voltage cables installed in accessible ceiling space need not to be in conduit. However, the cables must be properly secured to the ceiling structure.
- N. Refer to Section 26 09 23 for Occupancy Sensors wiring.
- O. Refer to Section 28 46 13 for Fire Alarm System wiring.
- P. If the Electrical Trades Contractor elects, at their option, to combine homerun circuits installed in a single conduit, the derating 2023 NEC 310.15(b) Table must be utilized for allowable conductor ampacity values. If the derating method is utilized, then furnish and install properly derated cables and properly sized conduits to meet Code. Electrical Trades Contractor shall be responsible to obtain inspection from the Electrical Inspector and pay all supplemental inspection and/or requested plan review fees.
- Q. Shared neutrals for lighting and power circuits are not permitted.
- R. MC cable shall only be acceptable as the final connection to light fixtures installed in accessible ceilings. Maximum cable shall not exceed 6 feet. MC cable shall not be used for homeruns or feeders.

### 3.3 INTERFACE WITH OTHER PRODUCTS

- A. Identify each conductor with its circuit number or other designation indicated on Drawings.

### 3.4 FIELD QUALITY CONTROL

- A. Perform field inspection and testing to assure proper operation.
- B. Inspect wire and cable for physical damage and proper connection.

- C. Measure tightness of bolted connections and compare torque measurements with manufacturer's recommended values.
- D. Verify continuity of each branch circuit conductor.

END OF SECTION

MAI: 2024-1527

SECTION 26 05 26

GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Grounding electrodes and conductors.
- B. Equipment grounding conductors.
- C. Bonding.

1.2 RELATED SECTIONS

- A. All drawings and specification sections apply to work in this section. Furnish all items, articles, materials, equipment, operations or methods that are mentioned, listed or scheduled on drawings or are in this specification including all labor, equipment, materials and miscellaneous incidentals necessary and/or required for the completion of this project. The work covered under this section of the specifications is in no way complete within itself but is supplementary to the entire specification and drawings.

1.3 REFERENCES

- A. Conform to requirements of 2015 Michigan Building Code, 2023 National Electrical Code, 2023 Michigan Electrical Code Rules Part 8, 2017 ICC/ANSI A117.1 and local code requirements.

1.4 PERFORMANCE REQUIREMENTS

- A. Resistance: Meet the NEC Code requirements.

1.5 PROJECT RECORD DOCUMENTS

- A. Accurately record actual locations of grounding electrodes.

1.6 REGULATORY REQUIREMENTS

- A. Conform to requirements of 2015 Michigan Building Code, 2023 National Electrical Code, 2023 Michigan Electrical Code Rules Part 8, 2017 ICC/ANSI A117.1 and local code requirements.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and indicated.

PART 2 PRODUCTS

2.1 MECHANICAL CONNECTORS

- A. As scheduled on the drawings.

2.2 WIRE

- A. Material: As scheduled on the drawings.
- B. Foundation Electrodes: Size to meet NFPA 70 requirements.
- C. Grounding Electrode Conductor: Size to meet NFPA 70 requirements.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install Products in accordance with manufacturer's instructions.
- B. Provide bonding to meet Regulatory Requirements.
- C. Equipment Grounding Conductor: Provide a separate grounding conductor for lighting and power circuits as noted or specified on the drawings.

3.2 FIELD QUALITY CONTROL

- A. Inspect grounding and bonding system conductors and connections for tightness and proper installation.

END OF SECTION

MAI: 2024-1527

SECTION 26 05 29

HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Conduit and equipment supports.
- B. Anchors and fasteners.

1.2 RELATED SECTIONS

- A. All drawings and specification sections apply to work in this section. Furnish all items, articles, materials, equipment, operations or methods that are mentioned, listed or scheduled on drawings or are in this specification including all labor, equipment, materials and miscellaneous incidentals necessary and/or required for the completion of this project. The work covered under this section of the specifications is in no way complete within itself but is supplementary to the entire specification and drawings.

1.3 REFERENCES

- A. Conform to requirements of 2015 Michigan Building Code, 2023 National Electrical Code, 2023 Michigan Electrical Code Rules Part 8, 2017 ICC/ANSI A117.1 and local code requirements.

1.4 REGULATORY REQUIREMENTS

- A. Conform to requirements of 2015 Michigan Building Code, 2023 National Electrical Code, 2023 Michigan Electrical Code Rules Part 8, 2017 ICC/ANSI A117.1 and local code requirements.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and indicated.

PART 2 PRODUCTS

2.1 PRODUCT REQUIREMENTS

- A. Materials and Finishes: Provide adequate corrosion resistance.
- B. Provide materials, sizes, and types of anchors, fasteners and supports to carry the loads of equipment and conduit. Consider weight of wire in conduit when selecting products.
- C. Anchors and Fasteners:
  - 1. Concrete Structural Elements: Use expansion anchors.
  - 2. Steel Structural Elements: Use beam clamps.
  - 3. Concrete Surfaces: Use self-drilling anchors and expansion anchors.

4. Hollow Masonry, Plaster, and Gypsum Board Partitions: Use toggle bolts and hollow wall fasteners.
5. Solid Masonry Walls: Use expansion anchors.
6. Sheet Metal: Use sheet metal screws.
7. Wood Elements: Use wood screws.

### PART 3 EXECUTION

#### 3.1 INSTALLATION

- A. Attachments of electrical equipment to structural members are the responsibility of the installing trade. Structural members shall not be field cut, welded or otherwise modified without approval of the Architect/Engineer. Attachment to steel joist shall be made at panel points whenever possible. Structural members shall not be overloaded as a result of attachments. Attachment/equipment loading for all trades resulting in total load greater than an equivalent uniform 5 psf for any member shall be submitted to the Architect/Engineer for review. Electrical Trades are still responsible for design, layout, and fabrication and installation of electrical supports and support attachment methods. Electrical Trades shall submit attachment methods to the Structural Engineer for review.
- B. Install products in accordance with manufacturer's instructions.
- C. Do not fasten supports to pipes, ducts, mechanical equipment, and conduit.
- D. Do not use spring steel clips and clamps.
- E. Do not use powder-actuated anchors.
- F. Do not drill or cut structural members without permission from Architect/Engineer.
- G. Fabricate supports from structural steel or steel channel. Rigidly weld members or use hexagon head bolts to present neat appearance with adequate strength and rigidity. Use spring lock washers under all nuts.
- H. Install surface-mounted cabinets and panelboards with minimum of four anchors.
- I. Use sheet metal channel to bridge studs above and below cabinets and panelboards recessed in hollow partitions.

END OF SECTION

MAI: 2024-1527



SECTION 26 05 33.13

CONDUIT FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Metal conduit.
- B. Liquidtight flexible non-metallic conduit.
- C. Electrical metallic tubing.
- D. Fittings and conduit bodies.
- E. MC Cable.

1.2 REGULATORY REQUIREMENTS

- A. Conform to requirements of 2015 Michigan Building Code, 2023 National Electrical Code, 2023 Michigan Electrical Code Rules Part 8, 2017 ICC/ANSI A117.1 and local code requirements.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and indicated.

1.3 RELATED SECTIONS

- A. All drawings and specification sections apply to work in this section. Furnish all items, articles, materials, equipment, operations or methods that are mentioned, listed or scheduled on drawings or are in this specification including all labor, equipment, materials and miscellaneous incidentals necessary and/or required for the completion of this project. The work covered under this section of the specifications is in no way complete within itself but is supplementary to the entire specification and drawings.

1.4 REFERENCES

- A. ANSI C80.1 - Rigid Steel Conduit, Zinc Coated.
- B. ANSI C80.3 - Electrical Metallic Tubing, Zinc Coated.
- C. ANSI C80.3 - Rigid Aluminum Conduit.
- D. ANSI/NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.
- E. Conform to requirements of 2015 Michigan Building Code, 2023 National Electrical Code, 2023 Michigan Electrical Code Rules Part 8, 2017 ICC/ANSI A117.1 and local code requirements.

1.5 DESIGN REQUIREMENTS

- A. Conduit Size: ANSI/NFPA 70.

1.6 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of Division 1.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect, and handle Products to site.
- B. Accept conduit on site. Inspect for damage.
- C. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.

1.8 PROJECT CONDITIONS

- A. Verify routing and termination locations of conduit prior to rough-in.
- B. Conduit routing shown is diagrammatic, field route conduit to avoid interferences.

1.9 REGULATORY REQUIREMENTS

- A. Conform to requirements of 2015 Michigan Building Code, 2023 National Electrical Code, 2023 Michigan Electrical Code Rules Part 8, 2017 ICC/ANSI A117.1 and local code requirements.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and indicated.

PART 2 PRODUCTS

2.1 CONDUIT REQUIREMENTS

- A. Minimum Size:  $\frac{3}{4}$  inch unless otherwise specified.
- B. Wet and Damp Locations: Use rigid conduit or liquid-tight non-metallic flexible conduit.
- C. Dry Locations:
  - 1. Concealed: Use electrical metallic tubing.
  - 2. Exposed: Use electrical metallic tubing.
  - 3. Use minimum  $\frac{3}{4}$ " conduit for TV outlet and fire alarm drops.
  - 4. Use flexible metal conduit for final wiring connections to motors, VFD units, light fixtures in accessible ceiling and interior transformers.
  - 5. Use minimum 1" conduit for voice/data wiring.
  - 6. Use minimum  $1\frac{1}{4}$ " conduit for ceiling projectors.

## 2.2 METAL CONDUIT

- A. Rigid Steel Conduit: ANSI C80.1.
- B. Fittings and Conduit Bodies: ANSI C80.5.
- C. Intermediate Metal Conduit (IMC): Rigid Steel.
- D. Fittings and Conduit Bodies: ANSI/NEMA FB 1; material to match conduit.

## 2.3 LIQUID-TIGHT NON-METALLIC FLEXIBLE METAL CONDUIT

- A. Description: Type NM. Manufacturer with a spiral of rigid PVC embedded reinforcement with a flexible PVC wall.
- B. Compatible fittings.
- C. Use for wet or exterior location as final wiring connections to motors or electrical equipment, etc.

## 2.4 ELECTRICAL METALLIC TUBING (EMT)

- A. Description: ANSI C80.3; galvanized tubing.
- B. Fittings and Conduit Bodies: ANSI/NEMA FB 1; set screw type.

## 2.5 MC CABLE

- A. Corrugated steel tubing with integral conductors.
- B. Use MC cable as noted on the drawings and specified in Low Voltage Electrical Power Conductors & Cables Specification 26 05 19.
- C. MC cable is not permitted for homeruns or feeders or branch device drops.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Install nonmetallic conduit in accordance with manufacturer's instructions.
- B. Arrange supports to prevent misalignment during wiring installation.
- C. Support conduit using coated steel or malleable iron straps, lay-in adjustable hangers, clevis hangers, and split hangers.
- D. Group related conduits; support using conduit rack. Construct rack using steel channel; provide space on each for 25 percent additional conduits.

- E. Fasten conduit supports to building structure and surfaces under provisions of Section 26 05 29.
- F. Do not support conduit with wire or perforated pipe straps. Remove wire used for temporary supports.
- G. Do not attach conduit to ceiling support wires.
- H. Arrange conduit to maintain headroom and present neat appearance.
- I. Route conduit parallel and perpendicular to walls or building centerlines.
- J. Route conduit installed above accessible ceilings parallel and perpendicular to walls. Install metal conduit sleeves or fire rated assembly in all fire rated wall as identified on the electrical or architectural life safety plans.
- K. Route conduit in and under slab from point-to-point.
- L. Do not cross conduits in slab.
- M. Maintain adequate clearance between conduit and piping.
- N. Maintain 12 inch clearance between conduit and surfaces with temperatures exceeding 104 degrees F.
- O. Cut conduit square using saw or pipecutter; de-burr cut ends.
- P. Bring conduit to shoulder of fittings; fasten securely.
- Q. Join nonmetallic conduit using cement as recommended by manufacturer. Wipe nonmetallic conduit dry and clean before joining. Apply full even coat of cement to entire area inserted in fitting. Allow joint to cure for 20 minutes, minimum.
- R. Use conduit hubs or sealing locknuts to fasten conduit to sheet metal boxes in damp and wet locations and to cast boxes.
- S. Install no more than equivalent of three 90-degree bends between boxes. Use conduit bodies to make sharp changes in direction, as around beams.
- T. Provide suitable fittings to accommodate expansion and deflection where conduit crosses, control and expansion joints. Use a UL listed expansion joint. If expansion length exceeds the manufactured expansion fitting, the use of PVC coated metallic flexible conduit is an acceptable method.
- U. Provide suitable pull wire in each empty conduit except sleeves and nipples.
- V. Use suitable caps to protect installed conduit against entrance of dirt and moisture.
- W. Ground and bond conduit under provisions of Section 26 05 26.

- X. Identify conduit under provisions of Section 26 05 53.
- Y. Firestop the conduits passing thru fire rated walls. Electrical Contractor shall be responsible to review the Architectural Life Safety drawings for fire rated wall locations.
- Z. The control system contractor shall be responsible to adhere to the mechanical plans and/or temperature control system drawings to establish conduit routes.
- AA. Electrical Contractor shall be required to install new conduit (concealed) in all finished areas for the following, but not limited to: exit lights, clocks, light fixtures, receptacles, sensors, switching, fire alarm manual pull stations, horn/strobe unit and strobe units, etc. Saw cut, channel and patch the walls. Neatly saw cut all existing brick veneer, glazed block or tiled areas to complete the new work. Firestop all conduits passing through fire rated walls, floors or separation barriers. Take the necessary steps to prevent chipping during the saw cutting and or wall channeling operation in the brick veneer, glazed tile or block areas. It shall be acceptable to install conduit from the opposite wall side to minimize brick veneer, glaze block or tile work. In non-finished spaces such as janitor closets, mechanical rooms, hub rooms, electrical rooms and storage rooms, conduit can be surface mounted. Provide flush mounted device boxes in all new wall construction as shown on the architectural drawings. Conduit drops or MC cable shall be concealed in the new walls and as noted and specified on the drawings.
- BB. All power, voice, clock, public address, data, fire alarm, occupancy sensor lighting wiring installed in exposed spaces shall be installed in conduit.
- CC. Low-voltage voice and data device conduit drops shall only be required to be extended into the accessible ceiling space or to a cable tray as noted or specified on the drawings.
- DD. Contractor shall provide separate raceway for the emergency power distribution system.
- EE. Electrical Contractor shall identify emergency power. Identify all of the junction box cover plates with panelboard source ID and circuit number(s). Provide engraved label. Handwritten on the junction box cover plate is not acceptable.
- FF. Provide conduit wall sleeves for low-voltage wiring installation as shown and noted on the drawings. Firestop the conduit openings. Use fire rated wireway as specified or noted on the drawings.

### 3.2 INTERFACE WITH OTHER PRODUCTS

- A. Install conduit to preserve fire resistance rating of partitions and other elements, using materials and methods consistent with facility standards or this project specification. Contractor is responsible to review the Architectural drawings to determine fire rated locations.

BAY CITY PUBLIC SCHOOLS- 2020 BOND PROJECTS SERIES 3  
TOILET ROOM RENOVATIONS FOR BAY CITY WESTERN MS / HS  
BAY CITY, MICHIGAN

PROJECT NO. 2019113.33

MAI: 2024-1527

END OF SECTION

SECTION 26 05 33.16

BOXES FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Pull and junction boxes.
- B. Fire alarm device boxes.
- C. Public address speaker backbox assembly.
- D. Occupancy sensor boxes.

1.2 RELATED SECTIONS

- A. All drawings and specification sections apply to work in this section. Furnish all items, articles, materials, equipment, operations or methods that are mentioned, listed or scheduled on drawings or are in this specification including all labor, equipment, materials and miscellaneous incidentals necessary and/or required for the completion of this project. The work covered under this section of the specifications is in no way complete within itself but is supplementary to the entire specification and drawings.

1.3 REFERENCES

- A. NEMA FB 1 - Fittings and Supports for Conduit and Cable Assemblies.
- B. NEMA OS 1 - Sheet-steel Outlet Boxes, Device Boxes, Covers, and Box Supports.
- C. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
- D. Conform to requirements of 2015 Michigan Building Code, 2023 National Electrical Code, 2023 Michigan Electrical Code Rules Part 8, 2017 ICC/ANSI A117.1 and local code requirements.

1.4 SUBMITTALS FOR REVIEW

- A. Provide submittal as listed in Section 26 01 00.

1.5 REGULATORY REQUIREMENTS

- A. Conform to requirements of 2015 Michigan Building Code, 2023 National Electrical Code, 2023 Michigan Electrical Code Rules Part 8, 2017 ICC/ANSI A117.1 and local code requirements.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and indicated.

## PART 2 PRODUCTS

### 2.1 PULL AND JUNCTION BOXES

#### A. Sheet Metal Boxes

1. NEMA 1 enclosure for interior location.
2. NEMA 3R or 4X for exterior location.
3. Stainless steel for food service area.
4. Non-metallic pull and junction boxes are not permitted for this project unless noted otherwise.

### 2.2 OCCUPANCY SENSORS

- #### A. Refer to the manufacturer for box requirements.

### 2.3 PUBLIC ADDRESS AND TELEVISION DISTRIBUTION SYSTEM

- #### A. Refer to Sections 26 06 50 and 27 13 33.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Install in locations as shown on Drawings, and as required for wire pulling, equipment connections and compliance with regulatory requirements.
- B. Set wall mounted boxes at elevations to accommodate mounting heights indicated.
- C. Electrical boxes are shown on Drawings in approximate locations unless dimensioned.
- D. Orient boxes to accommodate wiring devices oriented as specified in Section 26 27 26.
- E. Maintain headroom and present neat mechanical appearance.
- F. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.
- G. Inaccessible Ceiling Areas: Install outlet and junction boxes no more than 6 inches from ceiling access panel or from removable recessed luminaire.
- H. Install boxes to preserve fire resistance rating of partitions and other elements.
- I. Coordinate mounting heights and locations of outlets for counters, backsplashes, benches in casework and workstations.
- J. Locate outlet boxes to allow luminaires positioned as shown.
- K. Align adjacent wall mounted outlet boxes for switches, etc.



- L. Use flush mounting outlet box in finished areas. Surface mounted boxes are acceptable for non-finished spaces.
- M. Locate flush mounting box in masonry wall to require cutting of masonry unit corner only. Coordinate masonry cutting to achieve neat opening.
- N. Do not install flush mounting box back-to-back in walls; provide minimum 6 inches separation. Provide minimum 24 inches separation in acoustic rated walls.
- O. Secure flush mounting box to interior wall and partition studs. Accurately position to allow for surface finish thickness.
- P. Use stamped steel bridges to fasten flush mounting outlet box between studs.
- Q. Install flush mounting box without damaging wall insulation or reducing its effectiveness.
- R. Use adjustable steel channel fasteners for hung ceiling outlet box.
- S. Do not fasten boxes to ceiling support wires.
- T. Support boxes independently of conduit.
- U. Use gang box where more than one device is mounted together. Do not use sectional box.
- V. Use gang box with plaster ring for single device outlets.
- W. Install in line boxes in the surface mounted raceway system as shown on the drawing.
- X. Large Pull Boxes: Provide screwed cover or hinged enclosure in interior dry locations as noted or specified on the drawing.
- Y. Junction box cover plates installed above the ceiling shall be facing down.

### 3.2 INTERFACE WITH OTHER PRODUCTS

- A. Coordinate installation of outlet box for equipment connected under other sections.
- B. Refer to Section 28 46 13 for fire alarm mounting height.
- C. Install public address speaker backbox at locations noted or shown on the drawings. Confirm final ceiling location to avoid the interferences with light fixtures, fire alarm and HVAC diffusers.

### 3.3 ADJUSTING

- A. Adjust flush-mounting outlets to make front flush with finished wall material.

- B. Install knockout closures in unused box openings.

END OF SECTION

MAI: 2024-1527

SECTION 26 05 83

WIRING CONNECTIONS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Occupancy sensor equipment.

1.2 RELATED SECTIONS

- A. All drawings and specification sections apply to work in this section. Furnish all items, articles, materials, equipment, operations or methods that are mentioned, listed or scheduled on drawings or are in this specification including all labor, equipment, materials and miscellaneous incidentals necessary and/or required for the completion of this project. The work covered under this section of the specifications is in no way complete within itself but is supplementary to the entire specification and drawings.

1.3 REFERENCES

- A. NEMA WD 1 - General Purpose Wiring Devices.
- B. NEMA WD 6 - Wiring Device Configurations.
- C. Conform to requirements of 2015 Michigan Building Code, 2023 National Electrical Code, 2023 Michigan Electrical Code Rules Part 8, 2017 ICC/ANSI A117.1 and local code requirements.

1.4 COORDINATION

- A. Coordinate work under provisions of Division 1.
- B. Obtain and review shop drawings, product data, and manufacturer's instructions for equipment furnished under other sections.
- C. Determine connection locations and requirements.
- D. Sequence rough-in of electrical connections to coordinate with installation schedule for equipment.
- E. Sequence electrical connections to coordinate with start-up schedule for equipment.

1.5 REGULATORY REQUIREMENTS

- A. Conform to requirements of 2015 Michigan Building Code, 2023 National Electrical Code, 2023 Michigan Electrical Code Rules Part 8, 2017 ICC/ANSI A117.1 and local code requirements.

- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and indicated.

## PART 2 PRODUCTS

### 2.1 CORDS AND CAPS

- A. Manufacturers:
  - 1. Hubbell, Pass & Seymour, Leviton or equal.
- B. Attachment Plug Construction: Conform to NEMA WD 1.
- C. Configuration: NEMA WD 6; match receptacle configuration at outlet provided for equipment.
- D. Cord Construction: ANSI/NFPA 70, Type SO multi-conductor flexible cord with identified equipment grounding conductor, suitable for use in damp locations.
- E. Size: Suitable for connected load of equipment, length of cord, and rating of branch circuit over current protection.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify conditions under provisions of Division 1.
- B. Verify that equipment is ready for electrical connection, wiring, and energization.

### 3.2 ELECTRICAL CONNECTIONS

- A. Make electrical connections in accordance with equipment manufacturer's instructions.
- B. Make conduit connections to equipment using metallic flexible conduit for all dry interior locations. Use liquid tight non-metallic flexible conduit with watertight connectors in damp or wet locations and kitchen areas.
- C. Make wiring connections using wire and cable with insulation suitable for temperatures encountered in heat producing equipment.
- D. Provide suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes.
- E. Complete all lighting controls as scheduled, noted and shown on the drawings.

MAI: 2024-1527

END OF SECTION

SECTION 26 09 23

LIGHTING CONTROL DEVICES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Power packs.
- B. Occupancy sensor.
- C. Low voltage push button stations.
- D. CAT 5E wiring.
- E. Low-voltage momentary switching.

1.2 RELATED SECTIONS

- A. All drawings and specification sections apply to work in this section. Furnish all items, articles, materials, equipment, operations or methods that are mentioned, listed or scheduled on drawings or are in this specification including all labor, equipment, materials and miscellaneous incidentals necessary and/or required for the completion of this project. The work covered under this section of the specifications is in no way complete within itself but is supplementary to the entire specification and drawings.

1.3 REFERENCES

- A. ASHRAE 90.1 2013 Energy Code.
- B. Conform to requirements of 2015 Michigan Building Code, 2023 National Electrical Code, 2023 State of Michigan Code Rules Part 8, 2017 ICC/ANSI A117.1 and local code requirements.
- C. 2015 Michigan Energy Code.

1.4 SUBMITTALS

- A. Provide submittal as listed in Section 26 01 00.
- B. Shop Drawings: Occupancy sensor cut sheets, control panel layouts, wiring connections, diagrams, and dimensions. Cut sheets shall either be marked or arrowed components with catalog numbers. Failure to comply will be cause to return the submittals for corrections at no delays or extra costs to the Owner.

1.5 REGULATORY REQUIREMENTS

- A. ASHRAE 90.1 2013.

- B. Conform to requirements of 2015 Michigan Building Code, 2023 National Electrical Code, 2023 State of Michigan Code Rules Part 8, 2017 ICC/ANSI A117.1 and local code requirements.
- C. Products: Furnish products listed or labeled to conform to requirements of 2023 National Electric Code, 2023 State of Michigan Electric Code Rules Part 8, and local authority having jurisdiction.
- D. 2015 Michigan Energy Code.
- E. 2015 Life Safety Code. NFPA 101. Chapter 7 – 7.8.1.2.2 Means of Egress Lighting.

## PART 2 PRODUCTS

### 2.1 SYSTEM COMPLIANCE

- A. System components manufactured in accordance with UL 916 and UL 924 standards where applicable.
- B. System components manufactured in accordance with CFR Title 47, Part 15 standards where applicable.
- C. System components manufactured in accordance with ISED Canada RSS-247 standards where applicable.
- D. System components manufactured in accordance with IFT-008-2015 and NOM-208-SCFI-2016 standards where applicable.
- E. System listed as qualified under DesignLights Consortium Networked Lighting Control System Specification v5.0.
- F. Performance Criteria:
  - 1. Regulatory Requirements:
    - a. Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

### 2.2 OCCUPANCY SENSORS

- A. As scheduled on the drawings.

### 2.3 CAT 5E WIRING

- A. Green jacketed cable color.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Install in accordance with manufacturer's instructions and wiring diagrams.

- B. Contractor shall provide all components, etc. above those specified or shown for a complete installation.

3.2 FUNCTIONAL TESTING

- A. Provide functional testing with 2013 ASHRAE.
- B. Provide certified documents that lighting controls were tested for programming and working conditions.

END OF SECTION

MAI: 2024-1527

SECTION 26 27 26

WIRING DEVICES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Wall switches.
- B. Device plates.

1.2 RELATED SECTIONS

- A. All drawings and specification sections apply to work in this section. Furnish all items, articles, materials, equipment, operations or methods that are mentioned, listed or scheduled on drawings or are in this specification including all labor, equipment, materials and miscellaneous incidentals necessary and/or required for the completion of this project. The work covered under this section of the specifications is in no way complete within itself but is supplementary to the entire specification and drawings.

1.3 REFERENCES

- A. NEMA WD 1 - General Requirements for Wiring Devices.
- B. NEMA WD 6 - Wiring Device -- Dimensional Requirements.
- C. Conform to requirements of 2015 Michigan Building Code, 2023 National Electrical Code, 2023 Michigan Electrical Code Rules Part 8, 2017 ICC/ANSI A117.1 and local code requirements.
- D. ADA - Americans with Disabilities Act - As amended.

1.4 REGULATORY REQUIREMENTS

- A. Conform to requirements of 2015 Michigan Building Code, 2023 National Electrical Code, 2023 Michigan Electrical Code Rules Part 8, 2017 ICC/ANSI A117.1 and local code requirements.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and indicated.

PART 2 PRODUCTS

2.1 WALL SWITCHES

- A. Manufacturers:
  - 1. Pass & Seymour, Hubbell, Leviton or equal.
- B. Description: NEMA WD 1, Heavy-Duty, AC only general-use snap switch.



C. Body and Handle: Stainless steel.

D. Ratings:

1. Voltage: 120/277 volts, AC.
2. Current: 20 amperes.

## 2.1 WALL PLATES

A. Cover Plate: Stainless steel.

B. Use stainless steel cover for food service areas, and healthcare facilities.

C. Use "in use" weather proof metallic covers at exterior locations as indicated on the drawings to meet 2023 NEC Section 406.

D. Provide blank metal cover plates on abandoned boxes.

E. Provide stamped metal cover plate for unfinished spaces.

## PART 3 EXECUTION

### 3.1 EXAMINATION

A. Verify that outlet boxes are installed at proper height.

B. Verify that wall openings are neatly cut and will be completely covered by wall plates.

C. Verify that branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.

### 3.2 PREPARATION

A. Provide extension rings to bring outlet boxes flush with finished surface.

B. Clean debris from outlet boxes.

### 3.3 INSTALLATION

A. Install devices plumb and level.

B. Install switches with OFF position down.

C. Connect wiring device grounding terminal to outlet box with bonding jumper or branch circuit equipment grounding conductor where specified.

D. Install plates on switch, receptacle, and blank outlets in finished areas.

E. Connect wiring devices by wrapping conductor around screw terminal.

F. Install galvanized steel plates on outlet boxes and junction boxes in unfinished areas, above accessible ceilings, and on surface mounted outlets.

- G. Install protective rings on active flush cover service fittings.
- H. Shared neutral are not permitted for lighting and power circuits.

### 3.4 INTERFACE WITH OTHER PRODUCTS

- A. Confirm with architectural drawings for counter casework, etc. details for wiring devices mounting heights.
- B. Install wall switch 48 inches to top of box above finished floor.
- C. Electrical Trades shall review 2017 ICC/ANSI A117.1 for ADA requirements. Obtain a copy as required.
- D. Refer to all other sections of the specification, drawings, and Architectural drawing for specific mounting requirements for clocks, receptacles shown in counters, work stations. Do not rely solely on the electrical drawings for this information. Division 26 & 28 Contractor shall be responsible to review all project documentation and obtain all required information from the district.
- E. Refer to section 28 46 13 and drawing notes for fire alarm device mounting heights.

### 3.5 FIELD QUALITY CONTROL

- A. Inspect each wiring device for defects.
- B. Operate each wall switch with circuit energized and verify proper operation.

### 3.6 ADJUSTING

- A. Adjust devices and wall plates to be flush and level.

END OF SECTION

MAI: 2024-1527

SECTION 26 51 00

INTERIOR LIGHTING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Interior luminaires per schedule.

1.2 RELATED SECTIONS

- A. All drawings and specification sections apply to work in this section. Furnish all items, articles, materials, equipment, operations or methods that are mentioned, listed or scheduled on drawings or are in this specification including all labor, equipment, materials and miscellaneous incidentals necessary and/or required for the completion of this project. The work covered under this section of the specifications is in no way complete within itself but is supplementary to the entire specification and drawings.

1.3 REFERENCES

- A. NEMA WD 6 - Wiring Devices-Dimensional Requirements.
- B. Conform to requirements of 2015 Michigan Building Code, 2023 National Electrical Code, 2023 Michigan Electrical Code Rules Part 8, 2017 ICC/ANSI A117.1 and local code requirements.
- C. NFPA 101 - Life Safety Code, current adopted edition.
- D. 2015 Michigan Energy Code.
- E. ASHRAE 90.1 2013 Edition.
- F. LED Standards LM 79 and LM 80.

1.4 SUBMITTALS FOR REVIEW

- A. Provide submittal as listed in Section 26 01 00.
- B. Shop Drawings: Indicate dimensions and components for each luminaire that is not a standard product of the manufacturer.
- C. Product Data: Provide dimensions, ratings, and performance data.

1.5 REGULATORY REQUIREMENTS

- A. Conform to requirements of 2015 Michigan Building Code, 2023 National Electrical Code, 2023 Michigan Electrical Code Rules Part 8, 2017 ICC/ANSI A117.1 and local code requirements.
- B. Conform to requirements of NFPA 101.

- C. Products: Listed and classified by Underwriters Laboratories, Inc. as suitable for the purpose specified and indicated.
- D. 2015 Michigan Energy Code.

## PART 2 PRODUCTS

### 2.1 LUMINAIRES

- A. Furnish Products as scheduled on the drawings.

### 2.2 LED DRIVERS

- A. LED drivers shall include a factory disconnecting means in accordance with 2023 NEC 410-130G.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Support luminaires independent of ceiling framing.
- B. Locate recessed ceiling luminaires as indicated on reflected ceiling plan.
- C. Install surface mounted luminaires and exit signs plumb and adjust to align with building lines and with each other. Secure to prevent movement.
- D. Exposed Grid Ceilings: Provide auxiliary members spanning ceiling grid members to support surface mounted luminaires. Fasten surface mounted luminaires to ceiling grid members using bolts, screws, rivets, or suitable clips at a minimum of (4) points of attachment to prevent movement.
- E. Install recessed luminaires to permit removal from below.
- F. Install recessed luminaires using accessories and firestopping materials to meet regulatory requirements for fire rating.
- G. Install clips to secure recessed grid-supported luminaires in place at a minimum of (4) points of attachment to prevent movement.
- H. Install accessories furnished with each luminaire.
- I. Make wiring connections to branch circuit using building wire with insulation suitable for temperature conditions within luminaire.
- J. Bond products and metal accessories to branch circuit equipment grounding conductor.
- K. Luminaires specified with factory installed battery drivers shall be wired as noted and shown on the drawings.

### 3.2 FIELD QUALITY CONTROL

- A. Operate each luminaire after installation and connection. Inspect for proper connection and operation.

### 3.3 ADJUSTING

- A. Contract Closeout: Division 1: Adjusting installed work.
- B. Aim and adjust luminaires as indicated or as directed.

### 3.4 CLEANING

- A. Contract Closeout: Cleaning installed work.
- B. Clean electrical parts to remove conductive and deleterious materials.
- C. Remove dirt and debris from enclosures.
- D. Clean photometric control surfaces as recommended by manufacturer.
- E. Clean finishes and touch up damage.

### 3.5 DEMONSTRATION AND INSTRUCTIONS

- A. Replace light fixtures with non-working LED's, broken or discolored lens.

### 3.6 PROTECTION OF FINISHED WORK

- A. Contract Closeout: Protecting installed work.

### 3.7 SCHEDULES

- A. Refer to Drawings.

END OF SECTION

MAI: 2024-1527

SECTION 28 46 13

FIRE ALARM SYSTEM

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Modify existing Simplex 4100ES point addressable main fire alarm panel, devices, and new NAC panels as noted.
- B. Fire alarm system shall not be limited to: Manual pull stations, magnetic door holders, duct smoke detectors, ceiling smoke detectors, audio/visual devices and visual devices. Include all associated code mandated components, wiring for a complete operating system.
- C. Fire alarm ADA signaling devices.
- D. Fire alarm wiring.
- E. The Fire Alarm vendor shall include in their bid any cost for requesting AutoCAD backgrounds for their use from the Architect or Engineer. The cost will be \$150.00 for the first plan, and \$50.00 for each additional plan that may be requested for AutoCAD use. A waiver of responsibility for the Architect and Engineer related to Contractor use of the CAD files shall be signed by the Fire Alarm vendor.
- F. Fire alarm system interface to egress lighting to meet Chapter 7 Life Safety Code Article 7.8 requirements.

1.2 RELATED SECTIONS

- A. All drawings and specification sections apply to work in this section. Furnish all items, articles, materials, equipment, operations or methods that are mentioned, listed or scheduled on drawings or are in this specification including all labor, equipment, materials and miscellaneous incidentals necessary and/or required for the completion of this project. The work covered under this section of the specifications is in no way complete within itself but is supplementary to the entire specification and drawings.

1.3 REFERENCES

- A. Conform to requirements of 2015 Michigan Building Code, 2023 National Electrical Code, 2023 State of Michigan Code Rules Part 8, 2017 ICC/ANSI A117.1 and local code requirements.
- B. NFPA 72 - Current adopted code.
- C. State of Michigan - Bureau of Fire Services for Fire Alarm Plan Review and Inspections.
- D. Local authorities having jurisdiction.

- E. State of Michigan, 2016 School Rules.
  - F. Underwriters Laboratories Inc.
  - G. National Fire Protection Association Standards
    - 1. NFPA 13 – Installation of Sprinkler Systems.
    - 2. NFPA 15 – Water Spray Fixed Systems.
    - 3. NFPA 16 – Deluge Foam Water Systems.
    - 4. NFPA 72 – National Fire Alarm Code.
    - 5. NFPA 101 – Life Safety Code.
    - 6. NFPA 720 – Standard for Installation of CO Detection.
  - H. All equipment shall be approved by Underwriters Laboratories Inc. (UL) for its intended purpose for the following standards as applicable.
    - 1. UL864 UOJZ - Control units for fire protective signaling systems local signaling unit.
      - a. Central station signaling protected premises unit.
      - b. Remote signaling protected premises unit.
    - 2. UL2075 - CO detectors connected to face.
    - 3. UL864 SYZV - Releasing device control unit (water release only).
    - 4. UL268 - Smoke detectors for fire protective signaling systems.
    - 5. UL268A - Smoke detectors for duct application.
    - 6. UL217 - Smoke detectors for single stations.
    - 7. UL521 - Heat detectors for fire protective signaling systems.
    - 8. UL228 - Door holders for fire protective signaling systems.
    - 9. UL464 - Audible signaling appliances.
    - 10. UL1638 - Visual signaling appliances.
    - 11. UL38 - Manually activated signaling boxes.
    - 12. UL346 - Waterflow indicators for fire protective signaling systems.
    - 13. UL1481 - Power supplies for fire protective signaling systems.
- 1.4 AMERICANS WITH DISABILITIES ACT (ADA)
- A. All visual notification appliances and manual pull stations shall comply with the requirements with ADA.
- 1.5 SUBMITTALS
- A. Provide submittal as listed in Section 26 01 00. Submittal cut sheets shall be arrowed or marked with catalog numbers. Failure to comply will be cause for returning submittal for corrections at no delays or extra cost to the Owner.
    - 1. Plan drawings showing the locations (with room names and numbers) of the system components, including any adjustments in the quantities and locations of initiating devices and notification appliances to meet code requirements.
    - 2. Riser diagram showing system components, interconnecting wiring and connections to other building systems and equipment.
    - 3. Wiring diagrams showing manufacturer and field connections at component terminals, complete with conductor color codes and wire numbers.

4. System configuration list showing inputs, outputs, device addresses and custom location labels, device configurations and program logic.
5. Submit bill of materials, and not part of the submittal, with O&M Manuals.
6. Catalog pages showing system components.
7. System battery sizing calculations.
8. Power supply, amplifier and circuit sizing calculations.
9. Door hold-open power supply sizing calculations.

- B. Shop Drawings: Provide control panel layout and system wiring diagram showing each device and wiring connection required.

#### 1.6 PROJECT RECORD DOCUMENTS

- A. Record actual locations for complete fire alarm system.

#### 1.7 OPERATION AND MAINTENANCE DATA

- A. Submit as specified.
- B. Operation Data: Operating instructions.
- C. Maintenance Data: Maintenance and repair procedures.

#### 1.8 REGULATORY REQUIREMENTS

- A. Conform to requirements of 2015 Michigan Building Code, 2023 National Electrical Code, 2023 State of Michigan Code Rules Part 8, 2017 ICC/ANSI A117.1 and local code requirements.
- B. NFPA 72 - Current adopted edition.
- C. NFPA 101 - Life Safety Code, current adopted edition.
- D. State of Michigan, Bureau of Fire Services for Plan Review and Inspections.
- E. Local authorities having jurisdiction.
- F. State of Michigan, 2016 School Rules.
- G. NFPA 90A Current Adopted Edition.
- H. NFPA 92A Current Adopted Edition.
- I. NFPA 92B Current Adopted Edition.
- J. All equipment shall be approved by Underwriters Laboratories Inc. (UL) for its intended purpose for the following standards as applicable.
  1. UL864 UOJZ - Control units for fire protective signaling systems local signaling unit.
    - a. Central station signaling protected premises unit.
    - b. Remote signaling protected premises unit.
  2. UL2075 - CO detectors connected to face.



3. UL864 SYZV - Releasing device control unit (water release only).
4. UL268 - Smoke detectors for fire protective signaling systems.
5. UL268A - Smoke detectors for duct application.
6. UL217 - Smoke detectors for single stations.
7. UL521 - Heat detectors for fire protective signaling systems.
8. UL228 - Door holders for fire protective signaling systems.
9. UL464 - Audible signaling appliances.
10. UL1638 - Visual signaling appliances.
11. UL38 - Manually activates signaling boxes.
12. UL346 - Waterflow indicators for fire protective signaling systems.
13. UL1481 - Power supplies for fire protective signaling systems.

#### 1.9 SCOPE OF WORK

- A. This bid package shall include temporary support of noted fire alarm devices and recertification of the system.

#### PART 2 PRODUCTS

##### 2.1 MANUFACTURERS

- A. EX, Siemens, 4100ES.
- B. Engineered service distribution (ESD) is not a requirement with non-proprietary system.

##### 2.2 OPERATION

- A. The operation of any manual pull station, flow switch, tamper switch, smoke detector, duct smoke detector, shall cause the sounding of all alarm horns on a temporal pattern basis, sequential flashing of system strobes, activate common alarm relay contacts on the control panel and indicate on the control panel's LCD display the zone and type of device sounding the alarm.
- B. Refer to the current adopted NFPA 72 Fire Alarm Code for the allowable detector distance and location from the pair of doors.
- C. The operation of the panel mounted alarm silencing switch will turn off all horns but the strobes will continue to flash until the device actuating the alarm is reset to its normal position and the panel mounted system reset button is operated, at which time the system will return to its normal standby (supervisory) mode.
- D. Any system trouble condition such as an open circuit or ground condition will activate a common trouble LED and indicate on the control panel LCD display the exact zone, circuit or internal panel condition causing the trouble condition. Correction of the trouble source will return the panel to its normal standby mode.
- E. Initiating device circuits shall be two-wire style B, and horn or strobe circuits shall be two-wire style Y utilizing end of line resistors for circuit supervision.

All wiring to initiating and signaling devices shall be looped and continuous to the end of line resistor on its respective circuit. T-tapping is not permissible.

- F. The fire alarm control panel shall communicate with each addressable initiating and control divide individually via shielded twisted pair signaling line circuits.
- G. Each signaling line circuit shall be capable of accessing up to 127/250 addressable devices.
- H. Each signaling line circuit shall allow up to 10,000 feet of wire length to the furthest addressable device.
- I. Communications shall be completely digital and shall include parity data bit error checking routines for address codes and check sum routines for the data transmission protocol.
- J. Each device shall be uniquely identified by the device address.
- K. There shall be no limit to the number of initiating devices which may be activated simultaneously.
- L. Each device shall be individually annunciated at the panel. Annunciation shall include the following conditions for each device.
  - 1. Alarm, supervisory or trouble condition.
  - 2. Open, short or ground.
  - 3. Device failure or incorrect device installed.

### 2.3 DEVICES (all point addressable type that is compatible to the main panel)

- A. **Audio/Visual Units:** Provide horn and strobe units with 24VDC horn and ADA approved strobe for mounting to a 4" square box.
- B. **Strobes:** As shown for proper illuminance, clear Lexan lens with red "FIRE" or international fire symbol lettering, capable of being synchronized, and capable of wall or ceiling mounting.
- C. **Audio/Visual and Visual Units:** For ceiling installation shall include vertical lettering. Horizontal lettering is not acceptable.
- D. Fire alarm panel contact for egress lighting interface to meet Chapter 7 Life Safety Code Article 7.8 requirements.

### 2.4 FIRE ALARM WIRING

- A. Use (1) pair #18/2 twisted shielded for initiating devices unless directed otherwise by the manufacturer.
- B. Use (1) pair #14 for power duct smoke detectors as directed by the manufacturer.
- C. Use (1) pair #14 for horn/strobe circuits as directed by the manufacturer.

- D. Use (2) pair #18 for control to remote alarm and test station with duct smoke detector.
- E. All fire alarm wiring shall be in compliance with NEC Article 760.
- F. Fire alarm supplier to provide circuiting to comply with voltage drop and load calculations per Code requirements.
- G. All wire sizes indicated are minimum.

### PART 3 EXECUTION

#### 3.1 INSTALLATION

- A. Install fire alarm wiring in conduit for device shown storage room, mechanical rooms and similar space. Use 5'-0" minimum conduit drop in for physical protection.
- B. All junction boxes for fire alarm raceway system shall be painted red labeled "FIRE ALARM". Junction boxes installed in theatrical space where the project requires a black room finish scheme, label the junction box "fire alarm".
- C. Provide and install the fire alarm system in strict accordance with the plans and specifications, codes and manufacturer's instructions.
- D. Fully test the fire alarm system in accordance with NFPA 72, Chapter 7.
- E. Fire alarm vendor shall be responsible to certify the sound coverage for the entire facility.
- F. Audio/visual and visual units shall be installed in accordance with Michigan Building Code under the fire protection system section or NFPA 72 Fire Alarm Code wall mounted appliance shall be mounted such that the entire lens is not less than 80 inches, and not greater than 96 inches above the finished floor. Ceiling mounted device is an acceptable method. Ceiling mounting devices are designated with a C subscript letter.
- G. Electrical Trades shall complete the entire fire alarm system in accordance with plans and specifications.
- H. All fire alarm wiring installation that may be required to be installed through non-accessible ceiling spaces, and cannot be installed in conduit or cable tray, free air method will be acceptable for those spaces. Open wiring is acceptable method. Properly secure to ceiling structure, use J hooks or D-rings. The cable shall be plenum rated for this application.
- I. Ceiling mounted fire alarm device locations are shown diagrammatic. The design requirement shall be to install the device centered in the classrooms, corridor, offices, etc. Confirm the location with lighting, speaker, HVAC diffusers, to avoid interferences.
- J. Complete interface wiring from fire alarm panel to egress lighting.

3.2 MANUFACTURER/DISTRIBUTOR SERVICES

- A. The following supervision shall be provided by a factory trained service technician from the distributor of the fire alarm equipment.
- B. A pre-installation visit to the job site to review equipment submittals and to verify the method by which the system is to be wired.
- C. Upon completion of wiring, final checkout and certification of the system shall be made under supervision of this technician.
- D. At that time of the formal checkout, technician shall give operational instructions to the Owner.

3.3 WARRANTY

- A. Provide a one-year guarantee from date of system acceptance by the Owner.

3.4 CLOSE-OUT

- A. Provide O&M manuals, warranty letter, as-built drawings and inspection sign-off.

END OF SECTION

MAI: 2024-1527