

PROJECT MANUAL

RENOVATIONS TO PALMERTON WEIGHT ROOM
3525 Fireline Road
Palmerton, Carbon County, PA 18071

PALMERTON AREA SCHOOL DISTRICT
680 Fourth Street
Palmerton, Carbon County, PA 18071

February 16th, 2024

ALLOY5 ARCHITECTURE [Architect]
530 West Broad Street
Bethlehem, PA 18018

SNYDER HOFFMAN ASSOCIATES [Electrical, Plumbing]
1005 W. Lehigh Street
Bethlehem, PA 18018

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SECTION 00.0115 - LIST OF DRAWINGS

The List of Drawings indicated on the Drawing Cover Sheet G0.00, form a part of this Contract, as set forth in the accompanying Conditions of the Contract for Construction.

ADDITIONAL DIGITAL DATA FILES

Non-editable version of the Building Information Model (BIM) for visualization use only. NOT TO BE USED FOR BIDDING PURPOSES. This model is being provided as an example of the final Coordination BIM digital data files the Architect will furnish to Contractor for use in preparing the coordination BIM as specified in SECTION 013117 – COORDINATION DRAWINGS.

END OF SECTION 00.0115

REQUEST FOR BIDS – RENOVATIONS TO PALMERTON WEIGHT ROOM

Palmerton Area School District will receive sealed bids for the renovations to Palmerton Field House located at 3525 Fireline Road Palmerton, PA 18071. Work includes General Construction, Electrical Construction, and Plumbing Construction.

Sealed bids are to be delivered to: Mr. Ryan Kish, Business Administrator, 680 Fourth Street Palmerton, PA 18071 no later than **3:00 PM, prevailing time Wednesday, March 13th, 2024**. Bids will be publicly opened and read at the District Office Building, 680 Fourth Street Palmerton, PA 18071 no later than **3:15 PM, prevailing time Wednesday, March 13th, 2024**.

A Non-mandatory Pre-Bid is scheduled for **Wednesday, February 28th, 2024, at 3:00PM** at the project site. Additional walk throughs can be scheduled by calling Joe Faenza, Director of Facilities between the hours of 7am and 3pm at 610-703-0584.

Documents pertinent to the Work will be made available by end of day **Friday, February 23rd, 2024**. Documents are open to public inspection and can be viewed and obtained at the office of the Architect, Alloy5 Architecture – 530 West Broad Street, Bethlehem, PA 18018. You may also contact the project manager, Michelle Mozingo, directly by email at mmozingo@alloy5.com. Electronic bid documents will be made available.

All bids must be accompanied by a bid security in the amount of ten percent (10%) of the base bid. Performance Bond and a Labor Material and Payment Bond will be required from the lowest responsible bidders.

This project is subject to the provisions of the Commonwealth of Pennsylvania Prevailing Wage Act.

Mr. Ryan Kish, Business Administrator
Palmerton Area School District

Run Days: Friday, 2/16
 Monday, 2/19
 Monday, 2/26

QUALIFCATIONS QUESTIONNAIRE

Submitted To: Palmerton Area School District

For consideration with regard to: Renovations to Palmerton Weight Room

Date: _____, _____

1. Companies that wish to bid on this Project must submit this Qualification Statement with their bids.
2. Only Companies which are determined to be responsible contractors under applicable law will be designated as qualified bidders.
3. The Instructions to Bidders govern the Owner’s consideration of this completed Qualification Statement and any other requirements that will be considered in making an award.
4. All prospective bidders must complete this form by answering all questions, and supplying all requested documents, using the spaces indicated (with additional pages if necessary) and attaching documents as required and submit the completed form with their bid by the deadline established in the Invitation to Bid.

I. Capability

1. Form of organization (sole proprietorship, partnership, corporation, etc.)

2. Years the organization has been in business as a contractor under its present name.

3. List of all affiliated or subsidiary organizations and companies.

8. The officers, administrators, managers and superintendents who will be assigned to the project - identification of qualifications, with specific attention to years in present position, years of construction experience, and magnitude and type of work.

9. Any work the organization has performed for Palmerton Area School District.

10. Other public work, including specifically school projects, that the organization has performed in Pennsylvania (up to ten most recent projects). For each, identify the name and address of owner, location of project, nature of contract (prime, sub, etc.), contract amount, change orders, final contract amount, if completed on-time, kind of work, and nature of project.

- 11. Other projects, including specifically school projects, involving single-prime contracts on which the organization has served as a prime contractor (up to ten most recent projects). For each, identify the name and address of owner, location of project, nature of contract (prime, sub, etc.), contract amount, change orders, final contract amount, if completed on time, kind of work, and nature of project.

- 12. Other projects, including specifically school projects, for the type of construction that is to be undertaken, performed by the organization at any time. For each, identify the name and address of owner, location of project, nature of contract (prime, sub, etc.), contract amount, kind of work, and nature of project.

- 13. Projects constructed with Critical Path Method (CPM) or some other form of computerized project scheduling and capabilities that otherwise can be provided. For each, identify the name and address of owner, location of project, nature of contract (prime, sub, etc.), contract amount, kind of work, and nature of project.

14. Projects awarded but which the organization failed to complete. Identify dates, name and address of owner, name and location of project and kind of work, and the reasons the project was not completed.

15. Equipment owned that will be utilized on the project by type, size or capacity, years of service, and condition.

16. Leased equipment that will be utilized on the project by type, size or capacity, years of service, and condition.

- 17. Portion of the contract to the nearest ten percent (10%) that the bidder expects to perform using its own labor and equipment.

II. Financial Integrity

- 1. Attach the most recent audited and CPA certified financial statement, with certification, date of preparation, name and address of preparer (financial information can be treated as confidential if placed in a sealed envelope and marked as such).
- 2. Net working capital (current assets over current liabilities) and date of determination.

- 3. Identification of credit lines, with information on the total lines, amounts drawn down and amounts remaining.

4. Identification of the contractor's surety for the required performance bond, total bonding capacity and available bonding capacity. Also list bonding company A.M. Best Rating and Financial Rating for compliance with project requirement. The qualifications of the bonding company should be a surety company designated as acceptable surety in Circular 570, as amended by the Audit Staff of the Bureau of Government Financial Operations U.S. Treasury Department.

III. Conduct

1. All felony convictions, all bidding related offenses, and all misdemeanor convictions involving moral turpitude of the organization, its affiliates, its owners holding more than a specified percentage interest, its officers, and its administrators, managers, and superintendents that will be assigned to the project.

2. Debarments, suspensions, and denials of pre-qualification of the organization for any federal, state, local or governmental contracting.

3. Construction-related disputes of any kind including lawsuits, arbitrations, mechanics liens, and other claims that the organization has been involved in. Provide a summary of each item.

4. Proceedings of an administrative enforcement nature of whatever kind, including environmental, wage and hour, prevailing wage, employment discrimination, or other kind of proceeding. Provide a summary of each item.

5. List any prevailing wage disputes, investigations or complaints filed against the firm or any officers.

6. Unpaid obligations to local, state, or federal taxing authorities, including but not limited to income, withholding and unemployment taxes.

- 7. Cancellation, termination or rescission of contracts of insurance or suretyship.

- 8. Provide all other information requested in accordance with Instructions to Bidders or any other information requested by Owner as part of its investigation.

IV. Safety and Training

- 1. Provide a copy of your Workmen’s Compensation Experience Modification Factor for the past three (3) years.
- 2. Identify any safety violations, accidents or injuries on any projects over the last five (5) years.

- 3. Provide a summary and proof of any training or other programs that are available, endorsed or paid by your company and made available to employees.

4. Provide a summary of your safety training and compliance programs.

V. Ethics Act

1. The owners of the Firm and their immediate family members, namely, parents, spouse, child, brother or sister are not related by blood or marriage to and have no business relationships with Members of the Board of School Directors, Superintendent, Assistant Superintendent or Business Administrator of the Palmerton Area School District except as follows:

If familial or business relationship(s) exist, please identify.

When the Bidder is an individual proprietor:

WITNESS:

Signature of Witness

_____ (SEAL)

Signature of Proprietor

Print Name of Proprietor

When the Bidder is a partnership:

Print Name of Partnership

Address

City, State, Zip Code

Phone Number with Area Code

WITNESS:

Signature of Witness

_____ (SEAL)

General Partner

When the Bidder is a corporation:

Print Name of Corporation

Address

City, State, Zip Code

Phone Number with Area Code

ATTEST:

Secretary/Assistant Secretary/
Treasurer/Assistant Treasurer or
other authorized representative

BY: _____ (SEAL)

President/Vice President or
other authorized representative

Print Name of Corporate Representative

(CORPORATE SEAL)

END OF SECTION 00.1153

LETTER OF INSURER

DATE: _____

TO: Mr. Ryan Kish, Business Administrator
Palmerton Area School District
680 Fourth Street
Palmerton, PA 18071

Dear Ryan Kish:

The undersigned insurance agent, licensed to do business in the Commonwealth of Pennsylvania and authorized to issue this letter on behalf of the following insurance company or companies:

hereby represent that if

(insert name of Bidder)

is awarded the contract for the construction of the project, as is described in the Contract for Construction, then the above-named insurance company or companies will issue insurance, naming the Palmerton Area School District and its Architect as additional insured, for the coverages in the amounts required by the Contract Documents, as set forth in Article 11 of the General Conditions.

(Name of Agent)

By: _____
(Authorized Representative)

END OF SECTION 00.1155

SECTION 00.2000 - INSTRUCTIONS FOR PROCUREMENT**1. BIDS:**

- a. Bids to be entitled for consideration shall be made in accordance with the following instructions.

2. BID FORMS:

- a. Submit bids in duplicate on the Bid Form issued with Bidding Documents with blank spaces fully filled in. Owner reserves right to waive any informality in bids received. If there should be any discrepancy between the words and the numbers on the bid form, the written words shall be considered as being the bid price.

3. DELIVERY OF BID:

- a. Deliver bids to location designated in Invitation to Bids at or before time specified therein. Submit bids in opaque sealed envelope marked **BID** and bearing title of project and name of bidder.

4. BID SECURITY:

- a. A Certified Check, Cashier's Check or Bid Bond issued by a bonding company authorized to operate in the Commonwealth of Pennsylvania, in an amount equal to 10% of the largest possible total bid and made payable to the Owner must accompany each bid. This shall be considered as the amount of liquidated damages, and not a penalty, which the Owner will sustain by the failure or refusal of the bidder to execute and deliver the Contract and Performance and Payment Bonds, should the contract be awarded him.
- b. If the bidder defaults in executing and delivering the contract and the Performance and Payment bonds within ten (10) days after written notification from the Architect of the award of the Contract to him, then the Check or Bid Bond shall become the property of the Owner.
- c. Bids shall remain in effect for a period of one-hundred and twenty (120) days after the time established for receipt thereof, and during this time the Owner may accept or reject the bids as he so elects. If the bid is not accepted within the one-hundred and twenty days (120) days after the time set for submission of bids, or if the successful bidder executes and delivers said Contract and the Performance and Payment Bonds, then the Check or Bid Bond will be returned.

5. PERFORMANCE BOND, LABOR AND MATERIALS PAYMENT BOND AND INSURANCE:

- a. Bid shall include cost of Bonds and Insurance, and the Bonds and Insurance shall be furnished as stated herein. The Performance Bond and a Labor and Material Payment Bond of the successful bidders shall be executed by a surety company, authorized to conduct business in the Commonwealth of Pennsylvania and acceptable to the Owner. Each bond shall be in an

amount equal to one hundred percent (100%) of the Contract Price. The Performance Bond and the Labor and Material Payment Bond may be in one or in separate instruments in accordance with local laws and are to be delivered to the Owner. Failure or neglecting to deliver said bonds, as specified, shall be considered as having abandoned the Contract and the Bid Security will be retained as liquidated damages.

6. MODIFICATION AND WITHDRAWAL:

- a. No bid may be changed, amended or modified by telegram or otherwise after submittal. Bidders may withdraw bids at any time before bid opening, but may not resubmit them.
- b. Negligence by the Bidder in preparing his proposal confers no right of withdrawal or modification of his proposal after such proposal has been opened. No claims on account of mistakes or omissions of any proposal will be considered. Notwithstanding the above, a Bidder may withdraw his proposal within two (2) business days after the Bid opening time in accordance with the Public Contracts - Withdrawal of Bids Law, Act of January 23, 1974, P.L.9, No. 4, 73 P.S. 1601 et seq., as amended. A Bid which has been opened may be withdrawn only in accordance with the causes set forth in said Act and for no other reasons. Strict compliance with said Act is required to withdraw a Bid after opening.

7. BIDDER'S QUALIFICATIONS:

- a. In the submission of his bid, the bidder warrants to the Owner that both he and all trades to be employed by him in the prosecution of the work have been regularly engaged in work of a character similar to that covered by the Drawings and Specifications for at least five (5) years prior to the date of the proposed work.
- b. Bidders shall submit a completed Qualifications Questionnaire and all other information requested after the Bid when requested. A completed Qualifications Questionnaire completed in a manner that demonstrates bad faith and is substantially incomplete shall be rejected. Owner will scrutinize the bidder's information for full disclosure before a bid is awarded. The bidder must demonstrate competency and provide information requested by Owner, Architect, or other representative within 5 days of request. If the Bidder does not submit all of the information requested and or in the format requested within 5 days, the bid may be determined to be non-responsive and may be rejected.
- c. The Owner may make such investigation as is deemed necessary to determine the responsibility of the Bidder, including the ability of the Bidder to perform the work according to the requirements of the Contract Documents. The Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any Bid if by the evidence submitted, or as the result of investigation, such Bidder fails to satisfy the Owner that the Bidder is properly qualified to carry out the obligations of the Contract.
- d. The general construction contractor will be designated as the Lead Contractor for the project. The general construction Bidder's ability to meet, staff and manage the entire project, to schedule the work of its own forces and those of other prime contractors will be especially

critical. In completing his Qualification Questionnaire, the general construction Bidder must demonstrate the capability of meeting the requirements of the Contract Documents related to his role as Lead Contractor

8. BIDDER'S RESPONSIBILITY:

- a. Each bidder shall be held to have examined contract documents and existing conditions at the project site and to have fully informed himself as to conditions and limitations, and shall include to cover cost of all items in Contract in the Bid Sum(s). Bidder may not at any time after the execution of the contract set up any claims based upon insufficient data or incorrect assumptions on its part.
- b. Complete sets of Bidding Documents must be used in preparing Bids; neither Owner nor Architect assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents. Bid Documents consist of one volume of Contract Documents (and all reference standards) and Drawings.
- c. Owner and Architect, in making copies of the Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

9. BIDDER'S WAIVER TO CLAIMS

- a. In the submission of his bid, the bidder agrees to waive any claim they might have against the Owner or Architect and his Consultants arising out of their evaluation or recommendation of any bid.

10. INTERPRETATIONS:

- a. Should Bidder find discrepancies in or omissions from Contract Documents, prior to the submission of the bid, or should he be in doubt as to meaning, he shall notify the Architect, who will send written instructions to all Bidders. Neither Owner nor Architect will be responsible for any oral instructions.

11. SUBSTITUTE MATERIALS AND EQUIPMENT:

- a. Bid shall include furnishing and installing material in strict accordance with Contract Documents. Product substitutions will be allowed during the bidding period.

12. ADDENDA:

- a. Addendum may be issued to modify the Bidding Documents as deemed advisable by Owner or Architect.
- b. Addenda issued during time of bidding shall be listed by the bidder on the Bid Form and will be indicated in the Contract that they will become part thereof.

13. ALTERNATES

- a. The Bidder agrees to modify the base bid by the amounts stated for alternates as requested on the Bid Form and specified in the Bidding Documents.
- b. The Owner may accept any or all of the alternates in any order.
- c. Alternate work shall be completed within the same time frame as indicated on the Contract Documents for associated work. No alternate shall modify the project material allowances unless stated within the allowance description.
- d. If there is no change in the contract amount for any alternate write NO CHANGE or zero (0) in the blank.
- e. If there is no bid for the Alternate write NO BID in the blank. If Owner selects alternate not bid, the bidder may not receive the award.
- f. Enter the amount for each alternate on the line pre-marked as "ADD" or "DEDUCT". Where both the words "ADD" and "DEDUCT" are provided for an alternate, strike through one of the words so that the appropriate work remains.
- g. The failure to enter an amount in the blanks for an alternate shall be treated conclusively as a Bid of zero dollars for the work described in the alternate.

14. REJECTION OF BIDS:

- a. The Owner reserves the right to reject all bids or parts thereof or items therein and to waive any defects, errors, omissions, mistakes, irregularities or informalities in therein, as it may deem best to protect the interest of the Owner.

15. SUBCONTRACTORS:

- a. Successful Bidder will not be permitted to substitute other subcontractors for those named without written consent of Owner and Architect.

16. PRE-BID WALK THROUGH/CONFERENCE:

- a. A bidder's tour/conference of the work area (including major sub-contractors) will be conducted at the project job site as indicated on the Request for Bids.

17. AWARD OF CONTRACT:

- a. If any award is made by the Owner, it will be to the party declared by the Owner to be the lowest responsible bidder by notice of intent to award. Award of Contract will be based upon the base bid and any of the accepted alternates prices. In determining the lowest responsible

bidder, the Owner will consider the bidder's qualifications (Article 7), integrity, efficiency, experience, promptness, current work load, financial capability, performance on recent projects, references from Owners and Architects, potential list of subcontractors, project superintendent, itemized and detailed list of project schedule of values and any other information that the Owner deems necessary and ability to successfully and timely complete the project. The Owner will scrutinize the bidder's information for full disclosure before a bid is awarded. The bidder must demonstrate competency and provide any or all of the above information requested within 5 days of request. If the bidder does not submit all of the information requested and or in the format requested, the bid will be determined to be non-responsive and invalid.

18. EXECUTION OF CONTRACT AND BONDS:

- a. The Owner will notify the lowest responsible bidder notice of intent to award. Upon receipt of the notice, the Contractor shall furnish the Performance Bond and Labor and Material Payment Bond as specified herein, a Certificate of Insurance as outlined in the Supplemental Conditions, a complete list of subcontractors, and the name and qualification statement of the job superintendent who the Contractor intends to use for the duration of this project. Two (2) copies of the Bonds, Certificates of Insurance and the superintendents' qualifications shall be submitted to the Architect's office within ten calendar days following the receipt of the notice of intent to award. All insurance shall be issued by companies authorized to transact business in the Commonwealth of Pennsylvania. In the event the successful bidder shall fail to procure the necessary bonds, insurance and superintendent's qualifications within the required time, the Owner has the option of declaring bidder in default in which case the amount of the bid guarantee shall be forfeited to the Owner (not as a penalty, but as liquidated damages) or, in the alternative, of allowing the successful bidder additional time in which to secure required bonds and insurance. After approval of bonds, insurance, superintendents and other data submitted, the Owner will make an Award of Contract and notify the Contractor of the time and place for contract signing. In the event the bidder fails to provide a properly executed contract to the Owner within 14 days of notice, the Owner has the option of declaring bidder in default in which case the amount of the bid guarantee shall be forfeited to the Owner (not as a penalty, but as liquidated damages).
- b. Bonding shall be provided by Companies listed on the current Federal Register and be 'A' rated or better. Insurance Companies must be rated 'A' or better in A.M. Best Ratings.

19. SUBLETTING OR ASSIGNING OF CONTRACT:

- a. The Contractor shall not sublet, sell, transfer or assign or otherwise dispose of the Contract, or any portion thereof, or of his right, title or interest therein, without the written consent of the Owner.

20. START OF WORK:

- a. The time of completion of this Contract has been established on the basis that the Contractor shall start work thereon the day following receipt of a Notice to Proceed, and it is agreed that the work shall accordingly be commenced on that day.

21. QUESTIONS DURING BIDDING PERIOD:

- a. All bidders shall refer all questions during the bidding period to the Project Manager – Michelle Mazingo, via email at mmozingo@alloy5.com or by phone at 610-419-4055.

22. OPENING OF BIDS:

- a. Bids will be opened and read aloud publicly.

23. PENNSYLVANIA PREVAILING WAGE ACT:

- a. The bidder further agrees that should he enter into a contract to perform all or any portion of the work included herein, he will comply with all provisions of the "Pennsylvania Prevailing Wage Act", Act 442 of August 15, 1961, P.L. 987, as amended, including all rules and regulations therein under.

25. NON - COLLUSION

- a. More than one proposal for the contract from an individual, partnership, corporation, or an association under the same or different name will be grounds for the rejection of all proposals in which such Bidder is interested. Any or all proposals will be rejected if there is reason for believing that collusion exists among any of the Bidders. Participants in such collusion will not be considered in future proposals. A Non - Collusion Affidavit may be required.

END OF SECTION 00.2000

SECTION 00.2113 – INSTRUCTIONS TO BIDDERS**1. DEFINED TERMS**

Terms used in these Instructions to Bidders, which are defined in the Standard General Conditions of the Construction Contract, have the meanings assigned to them in the General Conditions. The term "Bidder" means one who submits a Bid directly to Owner, as distinct from a sub-bidder, who submits a bid to a Bidder. The term "Successful Bidder" means the lowest, qualified, responsible and responsive Bidder to whom Owner (on the basis of Owner's evaluation as hereinafter provided) makes an award. The term "Bidding Document" includes the Advertisement or Invitation to Bid, Instructions to Bidders, the Bid Form, and the Contract Documents (including all Addenda issued prior to receipt of Bids). The numbering system refers to Articles.

2. COPIES OF BIDDING DOCUMENTS

- 2.1 Complete sets of .pdf documents may be obtained, in the number and for the deposit fee, if any, stated in the Advertisement or Invitation to Bid. The fee for Bidding Documents is non-refundable.
- 2.2 Complete sets of Bidding Documents must be used in preparing Bids; neither Owner nor Architect assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents. Bid Documents consist of Contract Documents (and all reference standards), specifications, addenda and drawings. Bidder is responsible to make sure that the set of Bidding Documents is complete and that any printed contract document is legible and represents properly all the information as represented in the PDF file.
- 2.3 Owner and Architect, in making copies of the Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

3. QUALIFICATIONS OF BIDDERS

- 3.1 **The following information must be completed and submitted with the appropriate bid form.**
 - 3.1.1 The qualification questionnaire found in Section 00 11 53. Use additional pages to complete any of the sections if more space is needed.
 - 3.1.2 The Agreement of Surety found in Section 00 11 54.
 - 3.1.3 The Letter of Insurer found in Section 00 11 55.
 - 3.1.4 Executed Non-Collusion Affidavit found in Section 00 45 19.
 - 3.1.5 Executed Bid Bond found in Section 00 43 00.
- 3.2 To demonstrate qualifications to perform the Work, each Bidder must be prepared to submit within five (5) days of Owner's request, written evidence such as financial data, insurance

certificates, previous experience of the Bidder and its assigned personnel, present commitments and any other information that may be requested by the Owner. Each Bid must contain evidence of Bidder's qualification to do business in the state where the Project is located, or covenant to obtain such qualification prior to award of the Contract. Owner reserves the right to reject Bidder if he cannot satisfy all of the Qualification Requirements, including those listed in the Technical Specifications.

- 3.3 In determining the lowest responsible Bidder, the Owner will consider the Bidder's integrity, efficiency, experience of the Bidder and its assigned personnel, promptness, current work load, financial capability, performance on recent projects, references from Owners, Architects and Engineers, potential list of sub-contractors, schedule of values, and ability to successfully and timely complete the Project. The Owner will scrutinize the apparent low Bidder's information for full disclosure before intent to award is issued. The apparent low Bidder must demonstrate competency and provide any or all of the above information requested within five (5) days of request. Owner reserves the right to reject Bid if all the information is not received on time and/or does not satisfy the Owner's evaluation process.
- 3.4 In addition to all the requirements specified in Articles 3.1, 3.2 and 3.3 regarding qualifications of Bidders, the Owner will evaluate bidders using the following additional criteria:
- 3.4.1 The Bidder and its assigned personnel, must have successfully performed a minimum of 3 previous public projects within the last 5 years of similar type or a contract value of at least seventy percent (70%) of the amount of the bidder's base bid. Provide references including telephone number and contact person.
 - 3.4.2 The Bidder shall perform not less than ten percent (10%) of the actual construction Work with staff employed directly by the company. Project management shall NOT be included in this percentage.
 - 3.4.3 The Bidder, or its assigned personnel, must have successfully performed at least 3 public school projects within the last 5 years where they have managed multiple trades and coordinated and scheduled all the activities for projects as per 3.4.1. Provide references including telephone number and contact person.
 - 3.4.4 An agreement of Surety certifying that the Surety Company is committed to provide the bidder with a Performance Bond and Payment Bond each in the amount of one hundred percent (100%) of the contract amount. The Surety Company must have an AM Best rating of A- or better and a financial rating of Class X or higher.
 - 3.4.5 The Bidder's performance on previous projects including claims, litigation, coordination of work, staffing and timely completion. If it is determined that the bidder does not have a good track record on previous projects, the Owner reserves the right to reject the bid.
 - 3.4.6 The Bidder shall also refer to Articles 11 and 16.

4. EXAMINATION OF CONTRACT DOCUMENTS AND SITE

- 4.1 It is the responsibility of each Bidder, before submitting a Bid, to:
- (1) Examine the Contract Documents thoroughly.
 - (2) Visit the site to become familiar with local conditions that may affect the cost, progress, performance, or furnishing the Work.
 - (3) Consider federal, state, and local laws and regulations that may affect cost, progress, performance, or furnishing of the Work.
 - (4) Study and carefully correlate Bidder's observations with the Contract Documents.
 - (5) Notify Architect of any conflicts, errors, or discrepancies discovered in the Contract Documents.

4.1.1 REVIEW OF DRAWINGS AND SPECIFICATIONS

- A. Bidders shall thoroughly examine and be familiar with the Specifications and Drawings. The failure or omission of any Bidder to receive or examine any form, instrument, document, or visit the site and acquaint himself with conditions there existing, shall in no way relieve any Bidder from obligation with respect to his Bid. By submitting a Bid, the Bidder agrees and warrants that he has examined the site and the Specifications and Drawings and, where Specifications and/or Drawings require in any part of the Work a given result to be produced, that the Specifications and Drawings are adequate and the required result can be produced under the Specifications and Drawings. No claim for any extra will be allowed because of alleged impossibilities in the production of the results specified or because of inadequate or improper plans and specifications and whenever a result is required, the successful Bidder shall furnish any and all extras and make any changes needed to produce the required result for the sum stated in the form of proposal.
- B. Should any Bidder find discrepancies, duplications or omissions in the documents or have doubt as to the meaning expressed by the Contract Documents, he shall make inquiry at once in writing to the Architect. Where changes, corrections or clarifications to Contract Documents are deemed necessary by the Architect, he will issue written Addenda accordingly. Addenda shall be a part of the Contract Documents. No oral, telephone or letter instructions will be considered as having effect upon the Contract Documents; Addenda only shall constitute change to them. Bidders and Sub-bidders are urged to make early examination of Contract Documents and make inquiries about them if necessary, even though prices may not be determined until late in the bidding period.
- 4.2 The site will be available for visits at the pre-bid conference and at the other specific designated dates and times determined at the pre-bid.
- 4.3 Information and data reflected in the Contract Documents with respect to Underground Facilities at or contiguous to the site is based upon information and data furnished to Owner and Architect by owners of such Underground Facilities or others, and Owner and Architect do not assume responsibility for the accuracy or completeness thereof. Contractor shall verify the location of all underground utilities prior to any excavation.

- 4.4 General Contractor is responsible, on behalf of the Owner, for providing the physical markings of all existing utilities including those on site as indicated on the drawings or that may be identified in the field. The locations shown on the drawings are approximate. The Bidder must include in his proposal the cost for hand-dug test holes, or other means, to ascertain the precise position of such underground facilities on the site owned by the Owner. This verification should be performed for any utilities to be relocated, removed, modified or that may otherwise interfere with planned work. The utilities in the public right of way will be identified and marked by the appropriate facility owner as per the requirements of the PA One Call Act as amended. Physical layout is to be performed in full compliance with the PA One Call PA Act 287 of 1974 as amended by Act 18 of 1996.
- 4.5 The Owner and Architect will not be responsible for the adequacy of data furnished to prospective Bidders on subsurface conditions, Underground Facilities and other physical conditions. This information is provided based on information available. Bidder assumes responsibility for verifications, adjustments and modifications that may be required since this is generally recognized as inherent to the work of the Contract Documents.
- 4.6 Before submitting a Bid, each Bidder will, at Bidder's expense, make or obtain any additional examinations, investigations, explorations, tests and studies and obtain any additional information and data which pertain to the physical conditions (surface, subsurface and Underground Facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing the Work and which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price and other terms and conditions of the Contract Documents.
- 4.7 On request in advance, Owner will provide each Bidder access to the site to conduct such explorations and tests, as each Bidder deems necessary for submission of a Bid. Bidder shall fill all holes, clean up and restore the site to its former condition upon completion of such explorations.
- 4.8 The lands upon which the Work is to be performed, rights-of-way and easements for access thereto and other lands designated for use by the Bidder in performing the Work are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities or storage of materials and equipment are to be provided by Bidder. Easements for permanent structures or permanent changes in existing structures are to be obtained and paid for by Owner unless otherwise provided in the Contract Documents.
- 4.9 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of the bid documents and, that without exception, the Bid is premised upon performing and furnishing the Work required by the Contract Documents and such means, methods, techniques, sequences or procedures of construction as may be indicated in or required by the Contract Documents, and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

5. INTERPRETATIONS AND ADDENDA

- 5.1 All questions about the meaning or intent of the Contract Documents are to be directed as listed below. Interpretations or clarifications considered necessary by the Architect in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by Architect as having received the Bidding Documents. Questions received less than five (5) days prior to the date for opening of Bids may not be answered.
- 5.2 Only questions answered by formal written Addenda will be binding. Oral or other interpretations or clarifications will be without legal effect. Addenda may also be issued to modify the Bidding Documents as deemed advisable by Owner or Architect.
- 5.3 All questions must be submitted in writing as follows. Phone calls are not permitted. All questions must be sent to:

Michelle Mozingo
Alloy5 Architects

mmozingo@alloy5.com

6. BID SECURITY

- 6.1 A proposal shall be rejected unless accompanied by a Bid Security in the amount of ten percent (10%) of the total of the Base Bid and all possible add alternates. Bid Security shall be in the form of a certified check or bank cashier's check payable to Owner or a Bid Bond in the form set forth herein, naming as obligee, the Owner.
- 6.2 The Owner may declare the Bid Security forfeited to the Owner if, following such issuance of a Notice of Intent to Award to the apparent lowest responsible Bidder, such Bidder fails to deliver the items required for complete evaluation and for contract execution required by the Bid Documents and within the time required by the Bid Documents.
- 6.3 If Bid Security is submitted in the form of a Bid Bond, the Bid Bond shall be submitted on the form referenced in the Bidding Documents, and the Attorney-in-Fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of its Power of Attorney, authorizing said Attorney-in-Fact to act on behalf of the surety. The Power of Attorney must be dated the same date as the Bid Bond and both the Bid Bond and Power of Attorney shall have affixed the raised corporate seal of the surety. The Bid Bond form must be executed by a surety licensed and authorized to conduct business as a surety within the Commonwealth of Pennsylvania, have an AM Best rating of 'A-' or higher and a financial rating of Class X or higher and shall be named in the current list of companies holding Certificates of Authority as acceptable sureties on federal bonds and/or as acceptable reinsuring companies as published in Circular 570 (as amended) by the Audit Staff, Bureau of Government Financial Operations, U.S. Treasury Department, and the amount of the bond shall not exceed the underwriting risk of such surety set forth in said circular of revisions thereof. Any bond must be acceptable to Owner.

- 6.4 The Bid Security of Bidders will be returned (unless forfeited as stated above) at the Bidder's request, upon (1) the execution of the Agreement Between Owner and Contractor by Owner, or (2) the rejection of all bids by Owner, or (3) the expiration of the firm bid period set forth in Section 12 of these Instructions to Bidder. The Owner shall not be liable for any interest on bid security which is held in accordance with these Bidding Instructions.

7. NON-COLLUSION AFFIDAVIT

More than one proposal for the contract from an individual, partnership, corporation, or an association under the same or different name will be grounds for the rejection of all proposals in which such Bidder is interested. Any or all proposals will be rejected if there is reason for believing that collusion exists among any of the Bidders. Participants in such collusion will not be considered in future proposals. A Non-Collusion Affidavit shall be executed and submitted with the Bidder's proposal using the form set forth herein.

8. CONTRACT TIME

The Bidder acknowledges that a condition of the Contract is that time is of the essence of the Contract and the number of calendar days within which, or the dates by which, the Work is to be substantially completed and completed and ready for final payment (the Contract Time) are set forth in the Contract Documents and are accepted by the Bidder without exception or conditions.

9. LIQUIDATED DAMAGES

Provisions for liquidated damages are set forth in the Contract Documents.

10. SUBSTITUTE OR "OR-EQUAL" ITEMS

The various materials and products specified in the specifications by name or description are given to establish a minimum acceptable standard of quality and of cost for bid purposes. When proprietary names are used, and there does not follow a "listing" of acceptable approved manufacturers and/or products, then the proprietary named item must be included in the bid proposal without substitution. When proprietary names are used, and there follows a "listing" of acceptable "approved" manufacturers and/or products, then the bidder may base the bid on either the proprietary product or any from the "listing". Bidders may request approval prior to bid opening of non-listed items in accordance with the specifications. When proprietary names are used, and there are alternates on the bid form, then the bidder shall base his bid on the proprietary product or any from the "listing" of approved manufacturers and/or products. The bidder must furnish the specified or listed item regardless of whether or not they were included in his bid. The bidder shall be required to coordinate and pay for any conditions which are required to accommodate the listed or alternate item, including the reimbursement of other affected prime contractors.

No substitutions (alternatives) will be considered prior to receipt of Bids unless written request for approval has been received by the Architect only from prime Contract Bidders at least ten days prior to the date for receipt of Bids. Such requests shall be in accordance with substitution request procedure, and any other requirements at the Architect or Owner's discretion.

In order to prequalify, all alternative Manufacturers' information should be submitted by a prime contract bidder and should include:

- Technical, warranty, and Manufacturer's data specified. A line-by-line comparison of all specified items in the Specification must be made. Submission must be made ten (10) days prior to Bid opening.
 - Architect will review submission and any acceptable substitutions will be listed in an addendum. All manufacturers not specifically approved by addendum shall not be considered.
 - Only manufacturers that are qualified prior to the Bid Opening will be considered acceptable Manufacturers.
- 10.1 The approval of a substitution shall be at the sole determination of the Architect and upon approval of the Owner, if a proposed substitution (alternative) is approved prior to receipt of Bids, such approval will be set forth in an addendum. Bidders shall not rely upon approvals in any other manner. If a proposed substitution is not specifically approved by addendum they are rejected.
- 10.2 No substitutions (alternatives) will otherwise be considered after the Contract award.
- 10.3 No substitutions (alternatives) will be considered for pre-bid approval later than ten (10) days before bids are due.

11. SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 11.1 All subcontractors proposed for the project shall have been in business for a minimum of five (5) years and must have a successful record of completing, at a minimum, five (5) projects of similar size and cost. Subcontractors must also have business insurance, workmen's compensation, adequate resources of man power, tools and equipment and must be defined as an independent contractor by the IRS.
- 11.2 At the Owner's request the identity of certain Subcontractors, Suppliers and other persons or organizations (including those who are to furnish the principal items of material and equipment) is to be submitted to Owner in advance by the apparent Successful Bidder, and any other Bidder so requested. Within five (5) days after the Bid Opening, submit to Owner a list of all such Subcontractors, Suppliers and other such persons or organizations proposed for those portions of the Work for which such identification is required. An experience statement shall accompany such list with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, person or organization if requested by Owner. If Owner and Construction Manager, after due investigation, have reasonable objections to any proposed Subcontractor, Supplier, and other person or organization, then Owner may, before the Notice of Award is given, request the apparent Successful Bidder to submit an acceptable substitute without an increase in Bid Price.
- 11.3 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposed to use acceptable Subcontractors, Suppliers,

and other persons and organizations. Declining to make requested substitutions will not constitute grounds for sacrificing the Bid Security of any Bidder.

12. BID FORM

12.1 THE BID FORM SHALL NOT BE ALTERED. ALTERED BID FORMS MAY BE CONSIDERED NON-RESPONSIVE AND MAY BE REJECTED.

12.2 The Bid Form is included with the Bidding Documents; NO additional copies will be provided.

12.3 All the blanks of the Bid Form must be completed in ink or by type.

12.4 Bids by corporations must be executed in the corporate name by the president or a vice-president (or other corporate officer accompanied by the evidence of authority to sign) and the corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation must be shown below the signature.

12.5 Bids by partnership must be executed in the partnership name and signed by a partner, whose title must appear under the signature, and the official address of the partnership must be shown below the signature.

12.6 All names must be typed or printed below the signature.

12.7 The Bid shall contain an acknowledgement of receipt of all Addenda (the numbers of which must be filled in on the Bid Form). Properly issued Addenda shall be binding upon all Bidders, regardless of whether a Bidder fails to acknowledge receipt.

12.8 The address and telephone number for communications regarding the Bid must be shown.

12.9 If there is a discrepancy between the written words and numerical figures written on the bid form, the written words shall prevail.

13. SUBMISSION OF BIDS

Bids shall be submitted at the time and place indicated in the Advertisement or Invitation to Bid and shall be enclosed in an opaque, sealed envelope, marked with the Project title and, if applicable, the designated portion of the Project for which the Bid is submitted and the name and address of the Bidder and accompanied by the Bid Security and non-collusion affidavit. If the Bid is sent through the mail or other delivery system, the sealed envelope shall be enclosed in another envelope with the notation "BID ENCLOSED" on the face of it. One copy of all Documents required to be submitted at the time of Bid shall be submitted.

14. MODIFICATIONS AND WITHDRAWAL OF BIDS

14.1 Bidders will be given permission to withdraw any proposal after it has been received by the Owner, provided the Bidder or his agent duly authorized to act for him, personally appears at the Owner's Business Office with a written request signed by the Bidder prior to the time set forth

for the opening of the Bids. At the time set for the opening of Bids, the withdrawn proposal will be returned to the Bidder. Such withdrawn proposals will not be opened or read at the Bid opening. Bids may not be modified after submittal.

- 14.2 Bids shall be irrevocable for ninety (90) days after the actual day of opening thereof unless delayed by the required approval of another governmental agency, the sale of bonds or the award of a grant, in which case, Bids shall be irrevocable for 120 days after Bid opening. Extensions of the date for the award of contract may be made by the mutual written consent of Owner and the lowest responsible and responsive Bidder.
- 14.3 Neither the designation of the apparent lowest responsible Bidder, nor the issuance of a Notice of Intent to Award to the Bidder so designated shall operate to release any other Bidder from its Bid. Each such other Bidder, unless earlier released from its Bid by specific action of the Owner, shall remain bound by its Bid until the earlier of (1) the date of actual execution by Owner of the Agreement Between Owner and Contractor with the Bidder whom the Award of Contract has been made, or (2) the expiration of the firm Bid period stipulated above.
- 14.4 Negligence by the Bidder in preparing his proposal confers no right of withdrawal or modification of his proposal after such proposal has been opened. No claims on account of mistakes or omissions of any proposal will be considered. Notwithstanding the above, a Bidder may withdraw his proposal within two (2) business days after the Bid opening time in accordance with the Public Contracts – Withdrawal of Bids Law, Act of January 23, 1974, P.L. 9, No. 4, 73 P.S. §1601 et seq., as amended. A Bid which has been opened may be withdrawn only in accordance with the causes set forth in said Act and for no other reasons. Strict compliance with said Act is required to withdraw a Bid after opening.

15. OPENING OF BIDS

Bids will be opened and (unless obviously non-responsive) read aloud publicly. An abstract of the amounts of the Base Bids and major alternate(s) (if any) will be made available to Bidders after the opening of the Bids.

16. AWARD OF CONTRACT

- 16.1 The Owner's intent is to enter into Contracts with the lowest responsible and qualified Bidders.

Bid forms shall NOT BE ALTERED IN ANY MANNER. Owner reserves the right to reject any and all bids, to waive all informalities or technicalities and to negotiate contract terms with the Successful Bidder, and the right to disregard all nonconforming, non-responsive, unbalanced or conditional bids. Also, Owner reserves the right to reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by Owner. Discrepancies in the multiplication of units of Work and unit prices will be resolved in favor of the correct sum.

- 16.2 In evaluating Bids, Owner will consider the qualifications of such Bidders (see Article 3), whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- 16.3 Owner may consider the qualifications and experience of Subcontractors, Suppliers, and other persons or organizations proposed for any portions of the Work requested by Owner. Owner also may consider the operating costs, maintenance requirements, performance data and guarantees of major items of materials and equipment proposed for incorporation in the Work when such data is required to be submitted prior to the Notice of Award.
- 16.4 Owner may conduct such investigations as Owner deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualification and financial ability of Bidders, Subcontractors, Suppliers, and other persons or organizations to perform and furnish the Work in accordance with the Contract Documents to Owner's satisfaction within the prescribed time.
- 16.5 If the Contract is to be awarded, Owner will give the Successful Bidder a Notice of Intent to Award within ninety (90) days after the day of Bid Opening unless delayed by the required approval of another governmental agency.
- 16.6 The Owner reserves the right to waive non-material defects in any bid if it determines that it is in its best interest to do so. The Owner reserves the right to reject all bids.

17. CONTRACT SECURITY & INSURANCE

The General Conditions and the Supplementary Conditions set forth Owner's requirements as to Performance, Payment Bonds and Insurance requirements.

- 17.1 The apparent low bidder must provide Payment and Performance Bonds in the form included in the Contract Documents within 10 days of the issuance of Notice of Intent to Award. Other bond forms will not be accepted. Failure of the apparent low bidder to provide original executed Payment and Performance Bonds in the required form within the required time will result in forfeiture of the Bid Security.

18. SIGNING OF AGREEMENT

When Owner issues Intent to Award to the Successful Bidder, the Bidder shall within ten (10) days thereafter, deliver to the Owner, four (4) original copies of the required Bonds and Insurance Certificates. Within ten (10) days thereafter, the Architect will deliver four (4) agreements to Bidder. The Bidder shall sign the agreements and return all original documents to the Architect. The Architect will forward the agreements to the Owner for signature. The Owner will return one (1) signed agreement to the Bidder and Architect.

19. RETAINAGE

Retainage will be in accordance with the Contract Documents.

20. PREVAILING WAGES

Pennsylvania Prevailing Wage Predetermination rates will apply to this Project. The Bidder shall keep an accurate record showing the name, craft and actual hourly rate of wage paid to each workman employed by him and such record shall be preserved for two years from date of payment. The records shall be open at all reasonable hours to the inspection of the public body awarding the Contract and to the Secretary of the Department of Labor and Industry. The Architect assumes no responsibility to verify or document records of the Bidder or Contractor(s). Any failure of the Contractor or notification to the same in regards to wage rates or payment will require the Owner to withhold payments until the record is resolved.

21. COMPETENT WORKMEN

No person shall be employed to perform any work under the Contract if they are not legally eligible to be employed under applicable state and federal law or if they are not a trained, competent workman or mechanic, as applicable. For purposes of this Section, no workman or mechanic, as applicable, shall be regarded as competent unless he shall be duly skilled in the applicable branch of labor.

21.1 The Commonwealth of Pennsylvania enacted Act 127 of 2012, known as the Public Works Employment Verification Act ("the Act") which requires all public work contractors and subcontractors to utilize the Federal Government's E-Verify system to ensure that all employees performing work on public work projects are authorized to work in the United States.

The Department defines a "Public Work" to be construction, reconstruction, demolition, alteration and/or repair work other than maintenance work, done under contract and paid for in whole or in part out of the funds of a public body where the estimated cost of the total project is in excess of twenty-five thousand dollars (\$25,000) but shall not include work performed under a rehabilitation or manpower training program.

The Department of General Services' Public Works Employment Verification Compliance Program is responsible for the administration, education and enforcement of the Public Works Employment Verification Act 127 of 2012. It provides contractors and subcontractors with educational outreach, conducts investigations when complaints are received and random audits to ensure compliance with the requirements of this Act.

Please direct your questions to the Public Works Employment Verification Compliance Office

Mail: Department of General Services Public Works
Employment Verification Compliance Office Room 105 Tent Bldg.
18th & Herr Streets
Harrisburg, PA 17125
Fax: 717-214-3669

Statement of Policy as published in the Pennsylvania Bulletin, December 29, 2012, and effective January 1, 2013. Public Works Employment Verification Form attached.

- 21.2 Before commencing the Work, Contractor shall supply the Owner with state and federal criminal history reports and child abuse clearances for all employees, agents and subcontractors who will be on the Owner's property. The original clearances must be presented to the Owner prior to each employee, agent or subcontractor coming on the Owner's property. All such clearances shall be dated no earlier than one year prior to the date of presentation to the Owner. The Owner shall retain a copy of all such clearances in its file. Notwithstanding any other provision of the Contract, violation of this provision shall constitute grounds for immediate termination of the contract by the Owner.
- 21.3 The attached form, "Commonwealth of Pennsylvania Sexual Misconduct/Abuse Disclosure Release", has been developed by the Pennsylvania Department of Education, pursuant to Act 168 of 2014, to be used by school entities and independent contractors of school entities and by applicants who would be employed by or in a school entity in a position involving direct contact with children to satisfy the Act's requirement of providing information related to abuse or sexual misconduct. As required by Act 168, in addition to fulfilling the requirements under section 111 of the School Code and the Child Protective Services Law ("CPSL"), an applicant who would be employed by or in a school entity in a position having direct contact with children, must provide the information requested in SECTION 1 of this form and a written authorization that consents to and authorizes the disclosure by the applicant's current and former employers of the information requested in SECTION 2 of this form. The applicant shall complete one form for the applicant's current employer(s) and one for each of the applicant's former employers that were school entities or where the applicant was employed in a position having direct contact with children (therefore, the applicant may have to complete more than one form). Upon completion by the applicant, the hiring school entity or independent contractor shall submit the form to the applicant's current and former employers to complete SECTION 2. A school entity or independent contractor may not hire an applicant who does not provide the required information for a position involving direct contact with children.

The Owner will require all contractors to comply with this requirement.

22. PENNSYLVANIA HUMAN RELATION ACT 222:

- 22.1 Human Relations Act: The provisions of the Pennsylvania Human Relations Act, Act 222 of October 27, 1955 (P.L. 744) (43 P.S. Section 951, et. Seq.) of the Commonwealth of Pennsylvania prohibit discrimination because of race, color, religious creed, ancestry, age, sex, national origin, handicap or disability, by employers, employment agencies, labor organizations, contractors and others. The Contractor shall agree to comply with the provisions of this Act as amended that is made part of this specification. Your attention is directed to the language of the Commonwealth's non-Discrimination Clause in 16 PA Code 49.101.

23. NON-DISCRIMINATION / SEXUAL HARASSMENT:

- A. In the hiring of any employees for the manufacture of supplies, performance of work, or any other activity required under the Contract or any subcontract, the GRANTEE, subcontractor or any person acting on behalf of the GRANTEE or subcontractor shall not by reason of gender, race, creed, or color discriminate against any citizen of this Commonwealth who is qualified and available to perform the work to which the employment relates.

- B. Neither the CONTRACTOR nor any subcontractor nor any person on their behalf shall in any manner discriminate against or intimidate any employee involved in the manufacture of supplies, the performance of work or any other activity required under the Contract on account of gender, race, creed or color.
- C. The CONTRACTOR and any subcontractors shall establish and maintain a written sexual harassment policy and shall inform their employees of the policy. The policy must contain a notice that sexual harassment will not be tolerated and employees who practice it will be disciplined.
- D. The CONTRACTOR shall not discriminate by reason of gender, race, creed, or color against any subcontractor or supplier who is qualified to perform the work to which the contract relates.
- E. The CONTRACTOR and each subcontractor shall furnish all necessary employment documents and records to and permit access to its books, records, and accounts by the contracting officer and the Department of General Services' Bureau of Contract Administration and Business Development for purposes of investigation to ascertain compliance with the provisions of this Nondiscrimination/Sexual Harassment Clause. If the CONTRACTOR or any subcontractor does not possess documents or records reflecting the necessary information requested, it shall furnish such information on reporting forms supplied by the contracting officer or the Bureau of Contract Administration and Business Development.
- F. The CONTRACTOR shall include the provisions of this Nondiscrimination/Sexual Harassment Clause in every subcontract so that such provisions will be binding upon each subcontractor.
- G. The Commonwealth may cancel or terminate the Contract, and all money due or to become due under the Contract may be forfeited for a violation of the terms and conditions of this Nondiscrimination/Sexual Harassment Clause. In addition, the agency may proceed with debarment or suspension and may place the GRANTEE in the Contractor Responsibility File.

24. ANTI-POLLUTION LEGISLATION

- A. On October 26, 1972, House Bill Number 1969 was enacted into law. This Act (No. 247) became effective on November 25, 1972. It requires that Bidders on construction contracts for the Commonwealth of Pennsylvania be advised of those provision of Federal and State statutes, rules and regulations dealing with the prevention of environmental pollution and the preservation of public natural resource that affect the Project on which bids are being received.
- B. The Bidder shall thoroughly acquaint itself with the terms of the listed statutes, rules and regulations. No separate or additional payment will be made for such compliance. In the event that the listed statutes, rules and regulations are amended or if new statutes, rule or regulations become effective after date of receipt of bids, upon receipt of documentation which causes the Contractor to perform additional work, the Owner may issue a change order or deviation request setting forth the additional work that must be undertaken. This change order or deviation request shall not invalidate the Contract.

- C. It is the responsibility of the Contractor to determine what local ordinances, if any, will affect its work. They shall check for any county, city, borough or township rules or regulations applicable to the area in which the project is being constructed and, in addition, for any rules or regulations of other organizations having jurisdiction, such chambers-of-commerce, planning commissions, industries or utility companies who have jurisdiction over lands which the Contractor occupies. Any costs of compliance with local controls shall be included in the price bid, even though document of such local controlling agencies are not listed herein.

25. EROSION CONTROL

- A. General Contractor shall comply with all rules and regulations of Chapter 102, Title 25 of Pennsylvania Soil Erosion and Sedimentation Control.
- B. The plan shall be maintained at site and shall indicate how the Contractor plans to control erosion caused by storm water and prevent silt and sedimentation being distributed off site.
- C. Control shall be provided by channels, dikes, sedimentation basins, protection of stockpiled or uncontrolled soil or any other means necessary, all in accordance with the requirements of the Pennsylvania Department of Environmental Resources.

26. PUBLIC WORKS CONSTRUCTION CONTRACTS

In consideration of the funds awarded and activities funded under this CONTRACT which involve construction, reconstruction, alteration, repair, improvement, or maintenance of a building, structure, or improvement ("The Work"), the CONTRACTOR agrees to perform in accordance with the following:

- A. Steel Products Procurement Act. In the performance of any contract awarded for Work, the contract, subcontractors, materialmen, or suppliers shall use only steel products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated, or otherwise similarly processed, or processed by a combination of two or more of such operations, from steel made in the United States by the open hearth, basic oxygen, electric furnace Bessemer, or other steel-making process. Steel products include not only cast iron products, but also machinery and equipment listed in United States Department of Commerce Standard Industrial Classifications 25 (furniture and fixtures), 35 (machinery, except electrical), and 37 (transportation equipment), and made of, fabricated from, or containing, steel components. If a product contains both foreign and United States steel, it shall be determined to be a United States steel product only if at least 75 percent of the cost of the articles, materials, and supplies have been mined, produced, or manufactured, as the case may be, in the United States. Transportation equipment shall be determined to be a United States steel product only if it complies with Section 165 of P.L. 97-424 (96 Stat. 2136).

When unidentified steel products are supplied under a contract for Work, before any payment will be made, the contractor must provide documentation including, but not limited to, invoices, bills of lading, and mill certification that the steel was melted and manufactured in the United States. If a steel product is identifiable from its face, the contractor must submit certification which satisfies the using agency that the contractor has fully complied with this provision. OB shall not provide for or make any payments to any person who has not complied with the Steel

Products Procurement Act (hereinafter referred to as the "SPPA"). Any such payments made to any person by OB which should not have been made as a result of the SPPA shall be recoverable directly from the contractor, subcontractor, manufacturer, or supplier who did not comply with the SPPA.

In addition to withholding of payments, any person who willfully violates any of the provisions of the SPPA shall be prohibited from submitting any bids to any public agency for a period of five years from the date of the determination that a violation has occurred. In the event the person who violates the provisions of the SPPA is a subcontractor, manufacturer, or supplier, such person shall be prohibited from performing any work for, or supplying any materials to, a public agency for a period of five years from the date of the determination that a violation has occurred.

The CONTRACTOR shall include the provisions of the SPPA in every subcontract and supply contract so that the provisions of the SPPA shall be binding upon each subcontractor and supplier.

- B. Trade Practices Act. In accordance with the Trade Practices Act of July 23, 1968, P.L. 686 (71 P.S. §773.101 et seq.), the CONTRACTOR cannot and shall not use or permit to be used in the Work any aluminum or steel products made in a foreign country which discriminates against aluminum or steel products manufactured in Pennsylvania. The countries of Argentina, Brazil, South Korea, and Spain have been found to discriminate against certain products manufactured in Pennsylvania. Therefore, the purchase or use of those countries products, as listed below, is not permitted.
- a. Argentina: carbon steel wire rod and cold-rolled carbon steel sheet.
 - b. Brazil: welded carbon steel pipes and tubes; carbon steel wire rod; tool steel; certain stainless steel products, including hot-rolled stainless steel bar; stainless steel wire rod and cold-formed stainless steel bar; prestressed concrete steel wire strand; hot rolled carbon steel plate in coil; hot-rolled carbon steel sheet; and cold-rolled carbon steel sheet.
 - c. South Korea: welded carbon steel pipes and tubes; hot-rolled carbon steel plate; hot-rolled carbon steel sheet; and galvanized steel sheet.
 - d. Spain: certain stainless steel products, including stainless steel wire rod, hot-rolled stainless steel bars; and cold-formed stainless steel bars; prestressed concrete steel wire strand; and certain steel products, including hot-rolled steel plate, cold-rolled carbon steel plate, carbon steel structural shapes, galvanized carbon steel sheet, hot-rolled carbon steel bars, and cold-formed carbon steel bars.

Penalties for violation of the above paragraphs may be found in the Trade Practices Act, which penalties include becoming ineligible for public works contracts for a period of three years.

This provision in no way relieves the CONTRACTOR of responsibility to comply with those provisions of this CONTRACT which prohibit the use of foreign-made steel and cast iron products.

- C. Public Works Contractor's Bond Law of 1967. Prior to the award of any contract for any Work on the Project, the contractor to whom the contract is to be awarded must furnish the following bonds which shall become binding upon the award of such contract:
1. A performance bond at 100 percent of the contract amount, conditioned upon the faithful performance of the contract in accordance with the plans, specifications, and conditions of the contract. Such bond shall solely for the protection of the contracting body which awarded said contract.
 2. A payment bond at 100 percent of the contract amount. Such bond shall be solely for the protection of claimants supplying labor or materials to the CONTRACTOR, its contractor or to any of its subcontractors, in the prosecution of the work provided for in such contract, and shall be conditioned for the prompt payment of all such material furnished or labor supplied or performed in the prosecution of the work. "Labor or materials" shall include public utility services and reasonable rentals of equipment, but only for periods when the equipment rented is actually used at the site.
- D. Pennsylvania Prevailing Wage Act. The CONTRACTOR, its subgrantees, contractors and subcontractors shall comply with the provisions, duties, obligations, remedies, and penalties of the Pennsylvania Prevailing Wage Act, 42 P.S. § 165-1 et seq. which is incorporated herein by reference as if fully set forth herein. The general prevailing minimum wage rates, as determined by the Secretary of Labor and Industry shall be paid for each craft or classification of all workmen needed to perform work on the Project during the term hereof for the locality in which the work is to be performed.

27. SEVEREABILITY

- A. Should any section or any part of any section of this CONTRACT be rendered void, invalid, or unenforceable by any court of law, for any reason, such a determination shall not render void, invalid, or unenforceable any other section or part of any section of this CONTRACT.

28. AMERICANS WITH DISABILITIES ACT

During the term of this CONTRACT, the CONTRACTOR agrees as follows:

- A. Pursuant to federal regulations promulgated under the authority of The Americans with Disabilities Act, 28 C.F.R. § 35.101 et. Seq., the CONTRACTOR understands and agrees that no individual with a disability shall, on the basis of the disability, be excluded from participation in this CONTRACT or from activities provided for under this CONTRACT. As a condition of accepting and executing this CONTRACT, the CONTRACTOR agrees to comply with the General Prohibitions Against Discrimination, 28 C.F.R. § 35.130, and all other regulations promulgated under Title II of The Americans with Disabilities Act which are applicable to all benefits, services, programs, and activities provided by the COMMONWEALTH through contracts.
- B. The CONTRACTOR shall be responsible for and agrees to indemnify and hold harmless the COMMONWEALTH from all losses, damages, expenses, claims, demands, suits, and actions

brought by any party against the COMMONWEALTH as a result of the CONTRACTOR failure to comply with provisions of paragraph A above.

29. HEALTH AND SAFETY

Bidders shall comply with the provisions of the Occupational Safety and Health Administration, Federal Act 91-596 of December 29, 1970, and with any other safety and health regulations for district in which the Work is performed.

30. BONDS AND INSURANCE

30.1 The Bidder will be required to furnish a Bid Bond, Performance Bond and Labor and Material Payment Bonds in the amount of one hundred percent (100%) of the Contract Price in the form provided in the Contract Documents. Said Sureties shall be listed on the current Federal Register and have an AM Best rating of 'A-' or better and a financial rating of Class X or higher.

30.2 Insurance companies must be rated 'A-' or better in A.M. Best.

30.3 Bidder shall include the cost of the Bonds & Insurance in their Bid.

30.4 Bidder shall provide the insurance required in the General Conditions.

31. PRE-BID CONFERENCE

The mandatory Pre-bid Conference will be held on the date and time listed on the Invitation to Bidders. Representatives of Owner and Architect will be present to discuss the Project. Architect will transmit to all prospective Bidders of record such Addenda, as Architect considers necessary in response to questions arising at the Conference. Non attendees will not be permitted to bid.

32. ALTERNATES

All requested alternates as defined in Division 01 or the bid documents shall be bid. Provide prices for those alternates indicated on the Form of Proposal. Include changes to Contract Sum. Methods for bidding Alternates are as specified in Division 01.

32.1 The Bidder agrees to modify the base bid by the amounts stated for alternates as requested on the Bid Form and specified in the Bidding documents.

32.2 The Owner may accept or reject any or all of the alternates in any order.

32.3 Alternate work shall be completed within the same time frame as indicated on the Contract Documents for associated work. No alternate shall modify the project material allowances unless stated within the allowance description.

32.4 If there is no change in the contract amount for any alternate write NO CHANGE or zero (0) in the blank.

- 32.5 If there is no bid for the Alternate write NO BID in the blank. If Owner selects alternate not bid, the bidder may not receive the award.
- 32.6 Enter the amount for each alternate on the line pre-marked as "ADD" or DEDUCT". Where both the words "ADD and "DEDUCT" are provided for an alternate, strike through one of the words so that the appropriate word remains.
- 32.7 The failure to enter an amount in the blanks for an alternate shall be treated conclusively as a Bid of zero dollars for the work described in the alternate.

33. UNIT PRICES

Provide unit prices filled-in on the form of proposal in accordance with requirements specified in the proposal/bid form and bidding requirements. Unit costs will be used for adjustment of the Contract Sum if any are required. The Owner reserves the right to reject any unit prices bid.

34. ALLOWANCES

Include all allowances listed on the Bid Form and project drawings and specifications in the base bid price. Do not adjust allowances for any alternates unless specifically listed in the alternate.

35. PROJECT FINANCING

- A. The work to be done under this Contract is public work and may be financed in whole or part by the Owner (a public body) by issuance of bonds or procurement of grants, which are subject to various qualifications and restrictions. The Owner, in such case and in good faith, intends to consummate such financing, but its ability to do so is subject to many factors beyond its control. It is therefore expressly understood and agreed to by each bidder that, notwithstanding any other provision of the Contract Documents, the Owner may at any time cancel any award made by it, or cancel any contract entered into with any bidder, without liability to the bidder, at any time before the bidder has been given written notice to proceed and has actually begun Work under the Contract if financing satisfactory to the Owner cannot reasonably be consummated as contemplated, or if any court of competent jurisdiction shall enjoin or otherwise prohibit the Owner from proceeding with the Work. The bidder shall have the right to cancel the Contract in accordance with the Pennsylvania Commonwealth Procurement Code, 62 Pa.C.S. § 3911.
- B. This Project is financed in part by an Alternative and Clean Energy (ACE) Grant from the Commonwealth of Pennsylvania, Commonwealth Financing Authority. The Grant Agreement between the Owner (Grantee) and the Commonwealth Financing Authority (Grantor) sets forth the following requirements incumbent upon the construction Contractors:
1. In accordance with the Commonwealth Compliance Program and the Nondiscrimination Clause Agreement contained in all Department agreements (see Exhibit A at the end of this section), the Pennsylvania Department of Community and Economic Development (DCED) and its contractors are responsible for monitoring equal employment opportunity and nondiscrimination on all construction projects which are funded all or in part with DCED grant funds \$100,000 or more. Further, the Department requires

that all contractors who receive such funds earmarked for construction projects directly monitor their workforce.

2. The Contractor, for itself and its Subcontractors and suppliers, agrees to notify the Owner and Architect within 7 days following any suspension or debarment by the Commonwealth of Pennsylvania, the federal government, or any other state or governmental entity.
3. The Contractor agrees that records related to or arising out of the Grant Agreement between the Owner and the Commonwealth Financing Authority (“the Commonwealth”) are subject to request made pursuant to the Pennsylvania Right-to-Know Law, 65 P.S. §§ 67.101-3104, (“RTKL”). Exhibit ‘B’ attached hereto and made a part hereof is a true and correct copy of that portion of the Grant Agreement setting forth the RTKL provisions, with which Contractor agrees to abide. References therein to “Subgrantee” refer to the Contractor.
4. The Contractor agrees to allow the Owner, or its authorized representative, access to review the pertinent records and other documents of the Contractor and its subcontractors for the Owner’s purpose in performing a final audit for closeout of the Grant. Contractor and all subcontractors shall cooperate fully with Owner in this task.

END OF SECTION 00.2113



Exhibit ITB-A

COMMONWEALTH OF PENNSYLVANIA

PUBLIC WORKS EMPLOYMENT VERIFICATION FORM

Date _____

Business or Organization Name (Employer) _____

Address _____

City _____ State _____ Zip Code _____

Contractor

Contracting Public Body _____

Contract/Project No _____

Project Description _____

Project Location _____

As a contractor/subcontractor for the above referenced public works contract, I hereby affirm that as of the above date, our company is in compliance with the Public Works Employment Verification Act ('the Act') through utilization of the federal E-Verify Program (EVP) operated by the United States Department of Homeland Security. To the best of my/our knowledge, all employees hired post January 1, 2013 are authorized to work in the United States.

It is also agreed to that all public works contractors/subcontractors will utilize the federal EVP to verify the employment eligibility of each new hire within five (5) business days of the employee start date throughout the duration of the public works contract. Documentation confirming the use of the federal EVP upon each new hire shall be maintained in the event of an investigation or audit.

I, _____, authorized representative of the company above, attest that the information contained in this verification form is true and correct and understand that the submission of false or misleading information in connection with the above verification shall be subject to sanctions provided by law.

Authorized Representative Signature

Exhibit ITB-B



PA Department of Education Use Only

Fingerprint Service Code Form

Service Name: School Districts

To Schedule your ten-minute fingerprint appointment, simply visit <https://uenroll.identogo.com> and enter the following Service Code

1KG6XN

Service Code is unique to your hiring/licensing agency. Do not use this code for another purpose.

Please bring one of the identification documents from the list below to your enrollment appointment.

- Driver's License issued by a State or outlying possession of the U.S.
- Driver's License PERMIT issued by a State or outlying possession of the U.S.
- ID card issued by a federal, state, or local government agency or by a Territory of the United States
- State ID Card (or outlying possession of the U.S.) with a seal or logo from State or State Agency
- Commercial Driver's License issued by a State or outlying possession of the U.S.
- Canadian Driver's License
- Department of Defense Common Access Card
- Employment Authorization Card/ Document (I-766) with Photo
- Foreign Driver's License (Mexico and Canada only)
- Foreign passport
- Military Dependent's Identification Card
- Permanent Resident Card or Alien Registration Receipt Card (Form I-551)
- U.S. Coastguard Merchant Mariner Card
- U.S. Military Identification Card
- U.S. Passport
- Enhanced Tribal Identification Card (for federally recognized U.S. tribes)
- U.S. Visa issued by the U.S. Department of Consular Affairs for travel to or within, or residence within, the United States
- Uniformed Services Identification Card (Form DD-1172-2)
- Photo ID Waiver for Minors and U.S. Social Security Card or Birth Certificate



Don't have access to the Internet? You can still schedule an appointment by calling **844-321-2101**

Fingerprint Service Code Form

Service Name: Area Vocations Technical Schools (AVTS)

To Schedule your ten-minute fingerprint appointment, simply visit <https://uenroll.identogo.com> and enter the following Service Code

1KG6NX

Service Code is unique to your hiring/licensing agency. Do not use this code for another purpose.

Please bring one of the identification documents from the list below to your enrollment appointment.

- Driver's License issued by a State or outlying possession of the U.S.
- Driver's License PERMIT issued by a State or outlying possession of the U.S.
- ID card issued by a federal, state, or local government agency or by a Territory of the United States
- State ID Card (or outlying possession of the U.S.) with a seal or logo from State or State Agency
- Commercial Driver's License issued by a State or outlying possession of the U.S.
- Canadian Driver's License
- Department of Defense Common Access Card
- Employment Authorization Card/ Document (I-766) with Photo
- Foreign Driver's License (Mexico and Canada only)
- Foreign passport
- Military Dependent's Identification Card
- Permanent Resident Card or Alien Registration Receipt Card (Form I-551)
- U.S. Coastguard Merchant Mariner Card
- U.S. Military Identification Card
- U.S. Passport
- Enhanced Tribal Identification Card (for federally recognized U.S. tribes)
- U.S. Visa issued by the U.S. Department of Consular Affairs for travel to or within, or residence within, the United States
- Uniformed Services Identification Card (Form DD-1172-2)
- Photo ID Waiver for Minors and U.S. Social Security Card or Birth Certificate



Don't have access to the Internet? You can still schedule an appointment by calling **844-321-2101**

Fingerprint Service Code Form

Service Name: Intermediate Units (IU)

To Schedule your ten-minute fingerprint appointment, simply visit <https://uenroll.identogo.com> and enter the following Service Code

1KG6S7

Service Code is unique to your hiring/licensing agency. Do not use this code for another purpose.

Please bring one of the identification documents from the list below to your enrollment appointment.

- Driver's License issued by a State or outlying possession of the U.S.
- Driver's License PERMIT issued by a State or outlying possession of the U.S.
- ID card issued by a federal, state, or local government agency or by a Territory of the United States
- State ID Card (or outlying possession of the U.S.) with a seal or logo from State or State Agency
- Commercial Driver's License issued by a State or outlying possession of the U.S.
- Canadian Driver's License
- Department of Defense Common Access Card
- Employment Authorization Card/ Document (I-766) with Photo
- Foreign Driver's License (Mexico and Canada only)
- Foreign passport
- Military Dependent's Identification Card
- Permanent Resident Card or Alien Registration Receipt Card (Form I-551)
- U.S. Coastguard Merchant Mariner Card
- U.S. Military Identification Card
- U.S. Passport
- Enhanced Tribal Identification Card (for federally recognized U.S. tribes)
- U.S. Visa issued by the U.S. Department of Consular Affairs for travel to or within, or residence within, the United States
- Uniformed Services Identification Card (Form DD-1172-2)
- Photo ID Waiver for Minors and U.S. Social Security Card or Birth Certificate



Don't have access to the Internet? You can still schedule an appointment by calling **844-321-2101**

Fingerprint Service Code Form

Service Name: Non-Public Schools

To Schedule your ten-minute fingerprint appointment, simply visit <https://uenroll.identogo.com> and enter the following Service Code

1KG6TR

Service Code is unique to your hiring/licensing agency. Do not use this code for another purpose.

Please bring one of the identification documents from the list below to your enrollment appointment.

- Driver's License issued by a State or outlying possession of the U.S.
- Driver's License PERMIT issued by a State or outlying possession of the U.S.
- ID card issued by a federal, state, or local government agency or by a Territory of the United States
- State ID Card (or outlying possession of the U.S.) with a seal or logo from State or State Agency
- Commercial Driver's License issued by a State or outlying possession of the U.S.
- Canadian Driver's License
- Department of Defense Common Access Card
- Employment Authorization Card/ Document (I-766) with Photo
- Foreign Driver's License (Mexico and Canada only)
- Foreign passport
- Military Dependent's Identification Card
- Permanent Resident Card or Alien Registration Receipt Card (Form I-551)
- U.S. Coastguard Merchant Mariner Card
- U.S. Military Identification Card
- U.S. Passport
- Enhanced Tribal Identification Card (for federally recognized U.S. tribes)
- U.S. Visa issued by the U.S. Department of Consular Affairs for travel to or within, or residence within, the United States
- Uniformed Services Identification Card (Form DD-1172-2)
- Photo ID Waiver for Minors and U.S. Social Security Card or Birth Certificate



Don't have access to the Internet? You can still schedule an appointment by calling **844-321-2101**

Fingerprint Service Code Form

Service Name: Private Schools

To Schedule your ten-minute fingerprint appointment, simply visit <https://uenroll.identogo.com> and enter the following Service Code

1KG6V5

Service Code is unique to your hiring/licensing agency. Do not use this code for another purpose.

Please bring one of the identification documents from the list below to your enrollment appointment.

- Driver's License issued by a State or outlying possession of the U.S.
- Driver's License PERMIT issued by a State or outlying possession of the U.S.
- ID card issued by a federal, state, or local government agency or by a Territory of the United States
- State ID Card (or outlying possession of the U.S.) with a seal or logo from State or State Agency
- Commercial Driver's License issued by a State or outlying possession of the U.S.
- Canadian Driver's License
- Department of Defense Common Access Card
- Employment Authorization Card/ Document (I-766) with Photo
- Foreign Driver's License (Mexico and Canada only)
- Foreign passport
- Military Dependent's Identification Card
- Permanent Resident Card or Alien Registration Receipt Card (Form I-551)
- U.S. Coastguard Merchant Mariner Card
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- Uniformed Services Identification Card (Form DD-1172-2)
- Photo ID Waiver for Minors and U.S. Social Security Card or Birth Certificate



Don't have access to the Internet? You can still schedule an appointment by calling **844-321-2101**

**PENNSYLVANIA STATE POLICE
REQUEST FOR CRIMINAL RECORD CHECK
1-888-QUERYPA (1-888-783-7972)**

Exhibit ITB-C

This form is to be completed in ink by the requester – (information will be mailed to the requester only). If this form is not legible or not properly completed, it will be returned unprocessed to the requester. A response may take four weeks or longer.

TRY OUR WEBSITE FOR A QUICKER RESPONSE
<https://epatch.state.pa.us>

REQUESTER NAME	
ADDRESS	
CITY/STATE/ZIP CODE	
TELEPHONE NO. (AREA CODE)	

FOR CENTRAL REPOSITORY USE ONLY CONTROL NUMBER
AFTER COMPLETION MAIL TO: PENNSYLVANIA STATE POLICE CENTRAL REPOSITORY – 164 1800 ELMERTON AVENUE HARRISBURG, PA 17110-9758 DO NOT SEND CASH OR PERSONAL CHECK
CHECK ONE BLOCK <input type="checkbox"/> INDIVIDUAL/NONCRIMINAL JUSTICE AGENCY – ENCLOSE A CERTIFIED CHECK/MONEY ORDER IN THE AMOUNT OF \$22.00, PAYABLE TO: <u>"COMMONWEALTH OF PENNSYLVANIA"</u> THE FEE IS NONREFUNDABLE <input type="checkbox"/> NOTARIZED INDIVIDUAL/NONCRIMINAL JUSTICE AGENCY – ENCLOSE A CERTIFIED CHECK/MONEY ORDER IN THE AMOUNT OF \$27.00, PAYABLE TO: <u>"COMMONWEALTH OF PENNSYLVANIA"</u> THE FEE IS NONREFUNDABLE <input type="checkbox"/> FEE EXEMPT-NONCRIMINAL JUSTICE AGENCY – NO FEE

SUBJECT OF RECORD CHECK				
(FIRST)	(MIDDLE)	(LAST)		
MAIDEN NAME AND/OR ALIASES	SOCIAL SECURITY NUMBER	DATE OF BIRTH (MM/DD/YYYY)	SEX	RACE

The Pennsylvania State Police response will be based on the comparison of the data provided by the requester against the information contained in the files of the Pennsylvania State Police Central Repository only.

**FEEES FOR REQUESTS - \$22.00. NOTARIZED FEE REQUESTS - \$27.00.
MAKE ALL MONEY ORDERS PAYABLE TO: COMMONWEALTH OF PENNSYLVANIA **

REASON FOR REQUEST				
◀◀◀◀◀CHECK THE BOX THAT MOST APPLIES TO THE PURPOSE OF THIS REQUEST▶▶▶▶▶				
<input type="checkbox"/>	INTERNATIONAL ADOPTION - INTERNATIONAL ADOPTION MUST BE NOTARIZED AND MAILED IN. (\$27.00 FOR REQUEST)			
<input type="checkbox"/>	ADOPTION (DOMESTIC)	<input type="checkbox"/>	EMPLOYMENT	<input type="checkbox"/>
		<input type="checkbox"/>	VISA	<input type="checkbox"/>
				OTHER

WARNING: 18 Pa.C.S. 4904(b) UNDER PENALTY OF LAW - MISIDENTIFICATION OR FALSE STATEMENTS OF IDENTITY TO OBTAIN CRIMINAL HISTORY INFORMATION OF ANOTHER IS PUNISHABLE AS AUTHORIZED BY LAW.

Exhibit ITB-D

1 of 3

ARREST/CONVICTION REPORT AND CERTIFICATION FORM (under Act 24 of 2011 and Act 82 of 2012)

Section 1. Personal Information

Full Legal Name: _____

Date of Birth: ____/____/____

Other names by which you have been identified: _____

Section 2. Arrest or Conviction

By checking this box, I state that I have NOT been arrested for or convicted of any Reportable Offense.

By checking this box, I report that I have been arrested for or convicted of an offense or offenses enumerated under 24 P.S. §§1-111(e) or (f.1) ("Reportable Offense(s)"). See Page 3 of this Form for a list of Reportable Offenses.

Details of Arrests or Convictions

For each arrest for or conviction of any Reportable Offense, specify in the space below (or on additional attachments if necessary) the offense for which you have been arrested or convicted, the date and location of arrest and/or conviction, docket number, and the applicable court.

Section 3. Child Abuse

By checking this box, I state that I have NOT been named as a perpetrator of a founded report of child abuse within the past five (5) years as defined by the Child Protective Services Law.

By checking this box, I report that I have been named as a perpetrator of a founded report of child abuse within the past five (5) years as defined by the Child Protective Services Law.

Section 4. Certification

By signing this form, I certify under penalty of law that the statements made in this form are true, correct and complete. I understand that false statements herein, including, without limitation, any failure to accurately report any arrest or conviction for a Reportable Offense, shall subject me to criminal prosecution under 18 Pa.C.S. §4904, relating to unsworn falsification to authorities.

Signature

Date

PDE-6004 03/01/2016

INSTRUCTIONS

Pursuant to 24 P.S. §1-111(c.4) and (j), the Pennsylvania Department of Education developed this standardized form (PDE-6004) to be used by current and prospective employees of public and private schools, intermediate units, and area vocational-technical schools.

As required by subsection (c.4) and (j)(2) of 24 P.S. §1-111, this form shall be completed and submitted by all current and prospective employees of said institutions to provide written reporting of any arrest or conviction for an offense enumerated under 24 P.S. §§1-111(e) and (f.1) and to provide notification of having been named as a perpetrator of a founded report of child abuse within the past five (5) years as defined by the Child Protective Services Law.

As required by subsection (j)(4) of 24 P.S. §1-111, this form also shall be utilized by current and prospective employees to provide written notice within seventy-two (72) hours after a subsequent arrest or conviction for an offense enumerated under 24 P.S. §§1-111(e) or (f.1).

In accordance with 24 P.S. §1-111, employees completing this form are required to submit the form to the administrator or other person responsible for employment decisions in a school entity. Please contact a supervisor or the school entity administration office with any questions regarding the PDE 6004, including to whom the form should be sent.

PROVIDE ALL INFORMATION REQUIRED BY THIS FORM LEGIBLY IN INK.

LIST OF REPORTABLE OFFENSES

- **A reportable offense enumerated under 24 P.S. §1-111(e) consists of any of the following:**

- (1) An offense under one or more of the following provisions of Title 18 of the Pennsylvania Consolidated Statutes:

<ul style="list-style-type: none"> ▪ Chapter 25 (relating to criminal homicide) ▪ Section 2702 (relating to aggravated assault) ▪ Section 2709.1 (relating to stalking) ▪ Section 2901 (relating to kidnapping) ▪ Section 2902 (relating to unlawful restraint) ▪ Section 2910 (relating to luring a child into a motor vehicle or structure) ▪ Section 3121 (relating to rape) ▪ Section 3122.1 (relating to statutory sexual assault) ▪ Section 3123 (relating to involuntary deviate sexual intercourse) ▪ Section 3124.1 (relating to sexual assault) ▪ Section 3124.2 (relating to institutional sexual assault) ▪ Section 3125 (relating to aggravated indecent assault) ▪ Section 3126 (relating to indecent assault) ▪ Section 3127 (relating to indecent exposure) ▪ Section 3129 (relating to sexual intercourse with animal) ▪ Section 4302 (relating to incest) ▪ Section 4303 (relating to concealing death of child) 	<ul style="list-style-type: none"> ▪ Section 4304 (relating to endangering welfare of children) ▪ Section 4305 (relating to dealing in infant children) ▪ A felony offense under section 5902(b) (relating to prostitution and related offenses) ▪ Section 5903(c) or (d) (relating to obscene and other sexual materials and performances) ▪ Section 6301(a)(1) (relating to corruption of minors) ▪ Section 6312 (relating to sexual abuse of children) ▪ Section 6318 (relating to unlawful contact with minor) ▪ Section 6319 (relating to solicitation of minors to traffic drugs) ▪ Section 6320 (relating to sexual exploitation of children)
---	---
- (2) An offense designated as a felony under the act of April 14, 1972 (P.L. 233, No. 64), known as “The Controlled Substance, Drug, Device and Cosmetic Act.”
- (3) An offense SIMILAR IN NATURE to those crimes listed above in clauses (1) and (2) under the laws or former laws of:
 - the United States; or
 - one of its territories or possessions; or
 - another state; or
 - the District of Columbia; or
 - the Commonwealth of Puerto Rico; or
 - a foreign nation; or
 - under a former law of this Commonwealth.

- **A reportable offense enumerated under 24 P.S. §1-111(f.1) consists of any of the following:**

- (1) An offense graded as a felony offense of the first, second or third degree, other than one of the offenses enumerated under 24 P.S. §1-111(e), if less than (10) ten years has elapsed from the date of expiration of the sentence for the offense.
- (2) An offense graded as a misdemeanor of the first degree, other than one of the offenses enumerated under 24 P.S. §1-111(e), if less than (5) five years has elapsed from the date of expiration of the sentence for the offense.
- (3) An offense under 75 Pa.C.S. § 3802(a), (b), (c) or (d) (relating to driving under influence of alcohol or controlled substance) graded as a misdemeanor of the first degree under 75 Pa.C.S. § 3803 (relating to grading), if the person has been previously convicted of such an offense and less than (3) three years has elapsed from the date of expiration of the sentence for the most recent offense.

Exhibit ITB-E

PENNSYLVANIA CHILD ABUSE HISTORY CERTIFICATION

Type or print clearly in ink. If obtaining this certification for non-volunteer purposes or if, as a volunteer having direct volunteer contact with children, you have obtained a certification free of charge within the previous 57 months, enclose an \$13.00 money order or check payable to the PENNSYLVANIA DEPARTMENT OF HUMAN SERVICES or a payment authorization code provided by your organization. **DO NOT send cash.**

Certifications for the purpose of "volunteer having direct volunteer contact with children" may be obtained free of charge once every 57 months.

Send to CHILDLINE AND ABUSE REGISTRY, PA DEPARTMENT OF HUMAN SERVICES, P.O. BOX 8170 HARRISBURG, PA 17105-8170.

APPLICATIONS THAT ARE INCOMPLETE, ILLEGIBLE OR RECEIVED WITHOUT THE CORRECT FEE WILL BE RETURNED UNPROCESSED. IF YOU HAVE QUESTIONS CALL 717-783-6211, OR (TOLL FREE) 1-877-371-5422.

PURPOSE OF CERTIFICATION (Check one box only)

- | | |
|---|---|
| <input type="checkbox"/> Foster parent
<input type="checkbox"/> Prospective adoptive parent
<input type="checkbox"/> Employee of child care services
<input type="checkbox"/> School employee governed by the Public School Code
<input type="checkbox"/> School employee not governed by the Public School Code
<input type="checkbox"/> Self-employed provider of child-care services in a family child-care home
<input type="checkbox"/> An individual 14 years of age or older applying for or holding a paid position as an employee with a program, activity, or service
<input type="checkbox"/> An individual seeking to provide child-care services under contract with a child care facility or program
<input type="checkbox"/> An individual 18 years or older who resides in the home of a foster parent for children for at least 30 days in a calendar year
<input type="checkbox"/> An individual 18 years or older who resides in the home of a certified or licensed child-care provider for at least 30 days in a calendar year
<input type="checkbox"/> An individual 18 years or older, excluding individuals receiving services, who resides in a family living home, community home for individuals with an intellectual disability, or host home for children for at least 30 days in a calendar year
<input type="checkbox"/> An individual 18 years or older who resides in the home of a prospective adoptive parent for at least 30 days in a calendar year | <input type="checkbox"/> Volunteer having direct volunteer contact with children
If purpose is volunteer having direct volunteer contact with children, choose SUB PURPOSE:
<input type="checkbox"/> Big Brother/Big Sister and/or affiliate
<input type="checkbox"/> Domestic violence shelter and/or affiliate
<input type="checkbox"/> Rape crisis center and/or affiliate
<input type="checkbox"/> Other: _____
<input type="checkbox"/> PA Department of Human Services Employment & Training Program participant (signature required below)

<div style="text-align: center;"> _____
 SIGNATURE OF OIM/CAO REPRESENTATIVE </div> <div style="text-align: right;"> _____
 OIM/CAO PHONE NUMBER </div> |
|---|---|

AGENCY/ORGANIZATION NAME:

PAYMENT AUTHORIZATION CODE, IF APPLICABLE:

Consent/Release of Information Authorization form is attached. Applicant must fill in the "Other Address" sections. By completing the other address sections, you are agreeing that the organization will have access to the status and outcome of your certification application.

APPLICANT DEMOGRAPHIC INFORMATION (DO NOT USE INITIALS)

FIRST NAME	MIDDLE NAME	LAST NAME	SUFFIX
SOCIAL SECURITY NUMBER — — — — —	GENDER <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Not reported	DATE OF BIRTH (MM/DD/YYYY)	AGE

Disclosure of your Social Security number is voluntary. It is sought under 23 Pa.C.S. §§ 6336(a)(1) (relating to information in statewide database), 6344 (relating to employees having contact with children; adoptive and foster parents), 6344.1 (relating to information relating to certified or licensed child-care home residents), and 6344.2 (relating to volunteers having contact with children). The department will use your Social Security number to search the statewide database to determine whether you are listed as the perpetrator in an indicated or founded report of child abuse.

HOME ADDRESS	MAILING ADDRESS (if different from home address)	OTHER ADDRESS (if Consent/Release of Information Authorization form is attached)
ADDRESS LINE 1	ADDRESS LINE 1	ADDRESS LINE 1
ADDRESS LINE 2	ADDRESS LINE 2	ADDRESS LINE 2
CITY	CITY	CITY
COUNTY	COUNTY	COUNTY
STATE/REGION/PROVINCE	STATE/REGION/PROVINCE	STATE/REGION/PROVINCE
ZIP/POSTAL CODE	ZIP/POSTAL CODE	ZIP/POSTAL CODE
COUNTRY	COUNTRY	COUNTRY
<input type="checkbox"/> Different mailing address	ATTENTION	ATTENTION

CONTACT INFORMATION

HOME TELEPHONE NUMBER	WORK TELEPHONE NUMBER	MOBILE TELEPHONE NUMBER
EMAIL (By submitting an email contact, you are agreeing to ChildLine contacting you at this address.)		

PENNSYLVANIA CHILD ABUSE HISTORY CERTIFICATION

PREVIOUS NAMES USED SINCE 1975 (Include maiden name, nickname and aliases.)			
First	Middle	Last	Suffix
1.			
2.			
3.			
4.			
5.			

PREVIOUS ADDRESSES SINCE 1975 (Please list all addresses since 1975, partial address acceptable; attach additional pages if necessary.)
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

HOUSEHOLD MEMBERS (Please list everyone who lived with you at any time since 1975 to present. Please include parent, guardian or the person(s) who raised you; attach additional pages as necessary.)				
Name (First, Middle, Last)	Relationship	Present Age	Gender	
1.	<input type="checkbox"/> Parent <input type="checkbox"/> Guardian <input type="checkbox"/> person(s) who raised you			
2.	<input type="checkbox"/> Parent <input type="checkbox"/> Guardian <input type="checkbox"/> person(s) who raised you			
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

I affirm that the above information is accurate and complete to the best of my knowledge and belief and submitted as true and correct under penalty of law (Section 4904 of the Pennsylvania Crimes Code). If I selected volunteer, I understand that I can only use the certificate for volunteer purposes.

APPLICANT'S SIGNATURE
DATE

CHILDLINE USE ONLY		
DATE RECEIVED BY CHILDLINE	SUFFICIENT PAYMENT INFORMATION RECEIVED <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> VALID PAYMENT AUTHORIZATION CODE <input type="checkbox"/> WAIVED (supervisor initials) _____	CERTIFICATION ID #

INSTRUCTIONS TO COMPLETE THE PENNSYLVANIA CHILD ABUSE HISTORY CERTIFICATION APPLICATION:

General:

- Type or print clearly and neatly in ink only.
- If obtaining this certification for non-volunteer purposes or if, as a volunteer having direct volunteer contact with children, you have obtained a certification free of charge within the previous 57 months, enclose an \$13.00 money order or check for each application. No cash will be accepted. Personal, agency, or business checks are acceptable. Certifications for the purpose of "volunteer having direct volunteer contact with children" may be obtained free of charge once every 57 months. If no payment is enclosed for a non-volunteer purpose, you must provide a payment authorization code, otherwise your application will be rejected and returned to you.
- **DO NOT SEND POSTAGE PAID RETURN ENVELOPES** for us to return your results. Results are issued through an automated system generated mailing process.
- Certification results will be mailed to you within 14 days from the date the certification application is received at the ChildLine and Abuse Registry.
- Failure to comply with the instructions will cause considerable delay in processing the results of an applicant's child abuse history certification application.

Purpose of Certification - Do not check more than one box:

- Check the **foster parent** box if applying for purposes of providing foster care.
- Check the **prospective adoptive parent** box if applying for the purpose of adoption.
- Check the **employee of child care services** box if applying for the purpose of child care services in the following:
 - Child day care centers; group day care homes; family day care homes; boarding homes for children; juvenile detention center services or programs for delinquent or dependent children; mental health services for children; services for children with intellectual disabilities; early intervention services for children; drug and alcohol services for children; and day care services or other programs that are offered by a school.
- Check the **school employee governed by the Public School Code** box if you are a school employee who is required to obtain background checks pursuant to Section 111 of the Public School Code and will continue to be required to obtain background checks prior to employment in accordance with that section and on the periodic basis required by Act 153.
- Check the **school employee not governed by the Public School Code** box if you are a school employee not governed by Section 111 of the Public School Code, but covered by Act 153 (pertaining to school employees in institutions of higher education).

Definition of school employee: A school employee is defined as an individual who is employed by a school or who provides a program, activity or service sponsored by a school. The term does not apply to administrative or other support personnel unless they have direct contact with children.

Definition of school: A facility providing elementary, secondary or postsecondary educational services. The term includes the following:

- (1) Any school of a school district.
 - (2) An area vocational-technical school.
 - (3) A joint school.
 - (4) An intermediate unit.
 - (5) A charter school or regional charter school.
 - (6) A cyber charter school.
 - (7) A private school licensed under the act of January 28, 1988 (P.L.24, No. 11), known as the Private Academic Schools Act.
 - (8) A private school accredited by an accrediting association approved by the state Board of Education.
 - (9) A non-public school.
 - (10) An institution of higher education.
 - (11) A private school licensed under the act of December 15, 1986 (P.L. 1585, No. 174), known as the Private Licensed Schools Act.
 - (12) The Hiram G. Andrews Center.
 - (13) A private residential rehabilitative institution as defined in section 914.1-A(c) of the Public School Code of 1949.
- Check the **self-employed provider of child-care services in a family child-care home** if providing child care services in one's home (other than the child's own home) at any one time to four, five, or six children who are not relatives of the caregiver.
 - Check the **individual 14 years of age or older who is applying for or holding a paid position as an employee** box if the employment is with a **program, activity, or service, as a person responsible for the child's welfare or having direct contact with children:** Applying as an employee who is responsible for the child's welfare or having direct contact (providing care, supervision, guidance, or control to children or having routine interaction with children) in any of the following in which children participate and which is sponsored by a school or public or private organization:
 - A youth camp or program;
 - A recreational camp or program;
 - A sports or athletic program;
 - A community or social outreach program;
 - An enrichment or educational program; and
 - A troop, club, or similar organization
 - Check the **individual seeking to provide child care services under contract with a child care facility or program** box if you are providing child care services as part of a contract or grant funded program.
 - Check the box for **individual 18 years or older who resides in the home of a foster parent for at least 30 days in a calendar year** if you are an adult household member in this setting and require certification.
 - Check the box for **individual 18 years or older who resides in the home of a certified or licensed child-care provider for at least 30 days in a calendar year** if you are an adult household member in this setting and require certification.

- Check the box for **individual 18 years or older, excluding individuals receiving services, who resides in a family living home, community home for individuals with an intellectual disability, or host home for children for at least 30 days in a calendar year** if you are an adult household member in this setting and require certification.
- Check the box for **individual 18 years or older who resides in the home of a prospective adoptive parent for at least 30 days in a calendar year** if you are an adult household member in this setting and require certification.
- Check the **volunteer having direct volunteer contact with children** box if applying for the purpose of volunteering as an adult for an unpaid position as a volunteer with a child-care service, a school, or a program, activity or service as a person responsible for the child's welfare or having direct volunteer contact with children. In addition, check the box of one of the organizations listed, i.e. Big Brother/Big Sister, domestic violence shelter, rape crisis center. If you are **NOT** applying for a volunteer in one of the organizations listed, please check the **other** box and write the name of the organization in the space provided.
- Check the **PA Department of Human Services employment & training program participant** box if you are applying for the purpose of participating in a PA Department of Human Services employment and training program through a county assistance office (CAO) or the Office of Income Maintenance (OIM). The signature **AND** phone number of the CAO or OIM representative is required. If there is no signature and no phone number, your application will be rejected and returned to you.
- If you were provided a "**PAYMENT AUTHORIZATION CODE**" by an organization, please provide the **agency/organization name** in the space provided and the **payment authorization code** in the space provided.
- Please check the **CONSENT/RELEASE OF INFORMATION** box if you included a payment code in the space above and attached the completed Consent/Release of Information Authorization form to your Pennsylvania Child Abuse History Certification application when you mail it to our office. The Consent/Release of Information Authorization form allows the department to send your results to a third party. If the Consent/Release of Information Authorization form is **NOT** attached to the certification application, the results **WILL** be mailed to the applicant's home address and not to the third party.

Applicant Demographic Information:

- Name - Include the applicant's full legal name. Initials are not acceptable for a first name. If your full legal name is an initial, please provide supporting documentation along with your certification application.
- Social Security number - Include the applicant's social security number. A social security number is voluntary; **HOWEVER, PLEASE NOTE THAT APPLICATIONS THAT DO NOT INCLUDE SOCIAL SECURITY NUMBERS MAY TAKE LONGER TO BE PROCESSED.**
- Gender - Please check one box.
- Date of birth - Fill in the applicant's date of birth (Example: 01/22/1990).
- Age - Fill in the applicant's current age.

Address:

- The address listed must be the applicant's current home address. This is also where the results of the certification will be mailed, unless otherwise noted. If the **different mailing address** box is checked and a mailing address is provided in the "different" mailing address column, the results will be mailed to the "mailing" address and not the "home" address. **Note:** If the consent/release of information box is checked and an "other" address is provided, the results will be mailed to the "other" address.

Contact Information:

- Please provide your home, work or mobile telephone number. Fill in the number where the applicant can be reached in the event that there are questions about the information on the application.
- Please provide an email address. By providing an email address, you are consenting to ChildLine contacting you by email in the event that you cannot be reached by phone. **NO CONFIDENTIAL INFORMATION WILL EVER BE SHARED OR PROVIDED IN AN EMAIL FROM OUR OFFICE.**

Previous Names Used Since 1975:

- The applicant must list any and all full legal names that they have ever had since 1975. This includes maiden names, nicknames, aliases and also known as (aka) names.

Previous Addresses Since 1975:

- List all addresses where the applicant has resided since 1975. The applicant can attach an additional sheet of paper with all of the addresses listed if necessary. If the applicant cannot remember the exact mailing addresses since 1975, filling in as much information as possible about the location is acceptable.

Household Members:

- Include anyone that the applicant lived with since 1975 (parents, guardians, siblings, children, spouse (ex), paramour, friends, etc.). In addition, include the household member's relationship to the applicant, their age (to the best of your knowledge) and their gender. If the applicant was under the age of 18 in 1975, this section **MUST** include the applicant's PARENT(S) or GUARDIAN(S). If this section is left blank, the application will be rejected and returned to the applicant.

Signature:

- Applications **MUST** be signed and dated. Applications that are not signed and dated will be rejected and returned to the applicant.

CHILDLINE USE ONLY:

- Please DO NOT WRITE in this section. This is for CHILDLINE staff only.

Additional Information:

Applicants can visit <https://www.compass.state.pa.us/CWIS> for more information about submitting the child abuse certification online or to register for a business/organization account.

Exhibit ITB-F

COMMONWEALTH OF PENNSYLVANIA
SEXUAL MISCONDUCT/ABUSE DISCLOSURE RELEASE
(Pursuant to Act 168 of 2014)

Instructions

This standardized form has been developed by the Pennsylvania Department of Education, pursuant to Act 168 of 2014, to be used by school entities and independent contractors of school entities and by applicants who would be employed by or in a school entity in a position involving direct contact with children to satisfy the Act's requirement of providing information related to abuse or sexual misconduct. As required by Act 168, in addition to fulfilling the requirements under section 111 of the School Code and the Child Protective Services Law ("CPSL"), an applicant who would be employed by or in a school entity in a position having direct contact with children, must provide the information requested in SECTION 1 of this form and complete a written authorization that consents to and authorizes the disclosure by the applicant's current and former employers of the information requested in SECTION 2 of this form. The applicant shall complete one form for the applicant's current employer(s) and one for each of the applicant's former employers that were school entities or where the applicant was employed in a position having direct contact with children (therefore, the applicant may have to complete more than one form). Upon completion by the applicant, the hiring school entity or independent contractor shall submit the form to the applicant's current and former employers to complete SECTION 2. **A school entity or independent contractor may not hire an applicant who does not provide the required information for a position involving direct contact with children.**

Relevant Definitions:

Direct Contact with Children is defined as: "the possibility of care, supervision, guidance or control of children or routine interaction with children."

Sexual Misconduct is defined as: "any act, including, but not limited to, any verbal, nonverbal, written or electronic communication or physical activity, directed toward or with a child or a student regardless of the age of the child or student that is designated to establish a romantic or sexual relationship with the child or student. Such acts include, but are not limited to: (1) sexual or romantic invitation; (2) dating or soliciting dates; (3) engaging in sexualized or romantic dialogue; (4) making sexually suggestive comments; (5) self-disclosure or physical exposure of a sexual, romantic or erotic nature; or (6) any sexual, indecent, romantic or erotic contact with the child or student."

Abuse is defined as "conduct that falls under the purview and reporting requirements of the CPSL, 23 Pa.C.S. Ch. 63, is directed toward or against a child or a student, regardless of the age of the child or student."

Please Note

A prospective employer that receives any requested information regarding an applicant may use the information for the purpose of evaluating the applicant's fitness to be hired or for continued employment and shall report the information as appropriate to the Department of Education, a state licensing agency, law enforcement agency, child protective services agency, another school entity or to a prospective employer.

If the prospective employer decides to further consider an applicant after receiving an affirmative response to any of the questions listed in SECTIONS 1 and 2 of this form, the prospective employer shall request that former employers responding affirmatively to the questions provide additional information about the matters disclosed and include any related records. The **Commonwealth of Pennsylvania Sexual Misconduct/Abuse Disclosure Information Request** can be used to request this follow-up information. Former employers shall provide the additional information and records within 60 calendar days of the prospective employer's request.

The completed form and any information or records received shall not be considered public records for the purposes of the Act of February 14, 2008 (P.L. 6, No. 3) known as the "Right to Know Law."

The Department of Education shall have jurisdiction to determine willful violations of Act 168 and may, following a hearing, assess a civil penalty not to exceed \$10,000. School entities shall be barred from entering into a contract with an independent contractor who is found to have willfully violated the provisions of Act 168.

**COMMONWEALTH OF PENNSYLVANIA
SEXUAL MISCONDUCT/ABUSE DISCLOSURE RELEASE
(under Act 168 of 2014)**

(Hiring school entity or independent contractor submits this form to ALL current employer(s) and to former employer(s) that were school entities and/or where the applicant had direct contact with children)

To:	Name of Current or Former Employer:	<input type="checkbox"/> No applicable employment
	Street Address:	
	City, State, Zip:	
	Telephone Number:	Fax Number: Email:
	Contact Person:	Title:

The named applicant is under consideration for a position with our entity. The Pennsylvania General Assembly has determined that additional safeguards are necessary in the hiring of school employees to ensure the safety of the Commonwealth's students. The individual whose name appears below has reported previous employment with your entity. We request you provide the information requested in SECTION 2 of this form within **20 calendar days** as required by Act 168 of 2014.

SECTION 1: APPLICANT CERTIFICATION AND RELEASE (TO BE COMPLETED BY THE APPLICANT EVEN IF THE APPLICANT HAS NO CURRENT OR PRIOR EMPLOYMENT TO DISCLOSE)

Applicant's Name (First, Middle, Last):	
Any former names by which the Applicant has been identified:	
DOB:	
Last 4 digits of Applicant's Social Security Number:	PPID (if applicable):
Approximate dates of employment with the entity listed above:	
Position(s) held with the entity:	

Pursuant to Act 168, an employer, school entity, administrator, and/or independent contractor that provides information or records about a current or former employee or applicant shall be immune from criminal liability under the CPSL, the Educator Discipline Act, and from civil liability for the disclosure of the information, unless the information or records provided were knowingly false. Such immunity shall be in addition to and not in limitation of any other immunity provided by law or any absolute or conditional privileges applicable to such disclosure by the virtue of the circumstances of the applicant's consent thereto. Under Act 168, the willful failure to respond to or provide the information and records as requested may result in civil penalties and/or professional discipline, where applicable.

Have you (Applicant) ever:

- Yes No Been the subject of an abuse or sexual misconduct investigation by any employer, state licensing agency, law enforcement agency or child protective services agency (unless the investigation resulted in a finding that the allegations were false)?
- Yes No Been disciplined, discharged, non-renewed, asked to resign from employment, resigned from or otherwise separated from employment while allegations of abuse or sexual misconduct were pending or under investigation or due to adjudication or findings of abuse or sexual misconduct?
- Yes No Had a license, professional license or certificate suspended, surrendered or revoked while allegations of abuse or sexual misconduct were pending or under investigation or due to an adjudication or findings of abuse or sexual misconduct?

By signing this form, I certify under penalty of law that the statements made in this form are correct, complete, and true to the best of my knowledge. I understand that false statements herein, including, without limitation, any willful failure to disclose the information required, shall subject me to criminal prosecution under 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities) and to discipline up to, and including, termination or denial of employment, and may subject me to civil penalties and disciplinary action under the Educator Discipline Act. I also hereby authorize the above-named employer to release to the entity listed on page 3, the information requested in SECTION 2 of this form and any related records. I hereby release, waive, and discharge the above-named employer from any and all liability of any kind that may arise from such disclosure or release of records. I understand that third party vendors may be used to process this Act 168 pre-employment history review.

Signature of Applicant

Date

SECTION 2: CURRENT/FORMER EMPLOYER VERIFICATION (TO BE COMPLETED BY THE APPLICANT'S CURRENT EMPLOYER(S) AND ALL FORMER EMPLOYERS THAT WERE SCHOOL ENTITIES AND/OR WHERE THE APPLICANT HAD DIRECT CONTACT WITH CHILDREN)

Dates of employment of Applicant: _____ Contact telephone #: _____

To the best of your knowledge, has Applicant ever:

- Yes No Been the subject of an abuse or sexual misconduct investigation by any employer, state licensing agency, law enforcement agency or child protective services agency (unless the investigation resulted in a finding that the allegations were false)?
- Yes No Been disciplined, discharged, non-renewed, asked to resign from employment, resigned from or otherwise separated from employment while allegations of abuse or sexual misconduct were pending or under investigation or due to adjudication or findings of abuse or sexual misconduct?
- Yes No Had a license, professional license or certificate suspended, surrendered or revoked while allegations of abuse or sexual misconduct were pending or under investigation or due to an adjudication or findings of abuse or sexual misconduct?

No records or other evidence currently exists regarding the above questions. I have no knowledge of information pertaining to the applicant that would disqualify the applicant from employment.

Former Employer Representative Signature and Title

Date

Return all completed information to:

School Entity/Independent Contractor:			
Address:		Phone:	
City:	State:	Zip:	Fax: Email:
Contact Person:		Title:	

Date Form Received: _____

Received by: _____

SECTION 00.2625 – SUBSTITUTION REQUEST FORM

- A. Submissions for approved substitutions will be permitted and processed in accord with Article 10 of Document 00 2113 "Instructions to Bidders".
- B. Submissions will be "received dated" immediately upon arrival at the office of Alloy5 Architecture.
- C. All Submissions must be received ten (10) days prior to bid or they may not be reviewed.
- D. Reviewer's General Criteria for review will be:
 - 1. Burden of proof of performance equality and completeness of this submittal is the responsibility of the submitter.
 - 2. Reviewers will not be required to complete the submittal, that is, select from options or between models and lines of products.
 - 3. Reviewer will not be required to seek information from the manufacturer's literature on file in the office, or information from other locations.
 - 4. Product must be equal, or better, in those features and performance which specified product provides.
 - 5. When in the reviewer's opinion, significant deficiencies are established, further review of submitted data is not required.
- G. Reviewer will note action (approval or disapproval), the date, and their initials.
- H. If a submittal is disapproved, reviewer will make notations that will be adequate to guide a later reviewer to the same conclusion. Sample notations may be: "Submittal vague", "incomplete", or "product equality not substantiated".
- I. Submittals received after closing time will be "received dated," marked "late", initialed, and filed without review.
- J. Submittals will be filed in the project file until completion of the project, then destroyed.
- K. Approval of a substitute item will be communicated to bidders in the form of an Addendum.

TO:

ALLOY 5 ARCHITECTURE
530 W BROAD STREET
BETHLEHEM, PA 18018

PROJECT _____

PRIME BIDDER _____

CONTRACTOR/SUPPLIER _____

We hereby submit for consideration, the following product instead of specified item for above project:

SECTION/DRAWING	PARAGRAPH/DETAIL	SPECIFIED ITEM
_____	_____	_____

Proposed Substitution: _____

MANUFACTURER'S HOME OFFICE:
 Address: _____
 Telephone: _____
 Contact: _____

LOCAL REPRESENTATIVE:
 Address: _____
 Telephone: _____
 Contact: _____

Attached to this request is product data, specifications, performance tests and data, and color samples. The attached information also includes any modifications of the Contract Documents which would be required if this substitution is utilized for this Project.

The undersigned states that as a Prime Bidder on the above referenced Project the following statements are true.

1. The Prime Bidder has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product.
2. That the product manufacturer will provide the same warranty for the Substitution as for the specified Product.
3. That the use of this product will not have an adverse effect on any other trade or Prime Contractor or the Construction Schedule.
4. That the use of this product does not affect the dimensions shown on the Drawings unless specifically stated in the attached information.

Reason for Substitution: _____

ATTACHMENTS (If not applicable, write N/A in space provided)

- No. 1 Complete product data, including technical data and laboratory tests, if applicable.

- No. 2 Drawings indicating dimensional changes. _____
- No. 3. Complete description of changes to drawings and specifications which proposed substitution will require for its proper installation.

- No. 4 Necessary samples and substantiating data to prove equal quality, performance, and appearance to what which is specified. Clearly mark manufacturer's literature to indicate equality in performance. Difference in quality of materials and construction shall be indicated.
- No. 5 List of names and addresses of three similar products on which product was used, date of installation, and Architect/Engineer's name, address, and telephone numbers.

Fill in blanks below (Provide attachments if more space is necessary)

- A. Does the substitution affect dimensions indicated on the Contract Drawings?
Yes _____ No _____ If yes, clearly indicate changes:

- B. Will the undersigned pay for changes to the building design, including engineering and detailing costs caused by the requested substitution?

- C. What effect does substitution have on other trades, other contracts, and Contract Complete date?

- D. What effect does substitution have on applicable code requirements?

- E. List the difference between proposed substitution and specified item:

- F. Identify manufacturer's guarantees: _____

- G. Identify cost impact. Provide attachments showing proposed credit:

Undersigned attests function and quality equivalent or superior to specified item.

CERTIFICATION OF EQUAL PERFORMANCE:

Submitted by: _____ Title: _____

Company: _____

Address: _____

Date: _____

Telephone: _____

E-mail: _____

Signature: _____

.....

For use by the Architect/Engineer:

Accepted: _____

Accepted as Noted: _____

Not Accepted: _____

Received Too Late: _____

Reviewer: _____

Date: _____

Remarks: _____

END OF SECTION 00.2625

BID SECURITY

The Bid Security utilized for this project shall be a "Bid Bond", AIA Document A 310-1970, (not included herein). This document may be reviewed at the Architect's office or may be purchased directly from the American Institute of Architects at 800-365-2724. Reference the Instructions to Bidders for the execution of this document.

PERFORMANCE BOND AND PAYMENT BOND

The "Performance Bond and Payment Bond", AIA Document A 312-1984, (not included herein) shall be utilized for this project. These documents may be reviewed at the Architect's office. An original copy of this document will be presented to the bidder for execution upon notification. Reference the Instructions to Bidders for the execution of this document.

END OF SECTION 00.4300

NON-COLLUSION AFFIDAVIT

State of _____:

SS

County of _____:

I state that I am _____ of _____
(Title) (Name of Firm)

and that I am authorized to make this Affidavit on behalf of my firm, and its Owners, Directors and Officers. I am the person responsible in my firm for the price(s) and the amount of this Bid.

I state that:

1. The price(s) and amount of this Bid have been arrived at independently and without consultation, communication or agreement with any other contractor, bidder or potential bidder.
2. Neither the price(s) nor the amount of this Bid, and neither the approximate price(s) nor approximate amount of this Bid, have been disclosed to any other firm or person who is a bidder or potential bidder, and they will not be disclosed before Bid opening.
3. No attempt has been made or will be made to induce any firm or person to refrain from bidding on this contract, or to submit a bid higher than this Bid, or to submit any intentionally high or noncompetitive bid or other form of complementary bid.
4. The Bid of my firm is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive bid.
5. Neither I nor anyone on behalf of this firm have agreed with another firm or representative or agent of another firm to sell items or services at the same price, to submit identical bids, to rotate bids, to share profits with a contractor who does not submit the low bid, to submit prearranged bids, agreed upon higher or lower bids or other complementary bids, to set up territories to restrict competition or not to submit bid.

6. _____, its affiliates,
(Name of My Firm)

subsidiaries, officers, directors and employees are not currently under investigation by any governmental agency and have not in the last three years been convicted or found liable for any act prohibited by State or Federal Law in any jurisdiction, involving conspiracy or collusion with respect to bidding on any public contract except as follows:

I state that _____
(Name of My Firm)

understands and acknowledges that the above representations are material and important and will be relied on by Palmerton Area School District in awarding the contract(s) for which this Bid is submitted. I understand and my firm understands that any misstatement in this Affidavit is and shall be treated as fraudulent concealment from Palmerton Area School District of the true facts relating to the submission of bids for this contract.

(Name) _____

(Company Position) _____

SWORN TO AND SUBSCRIBED

BEFORE ME THIS _____ DAY

OF _____, 20_____

Notary Public

My Commission Expires: _____

INSTRUCTION FOR NON-COLLUSION AFFIDAVIT

1. This Non-Collusion Affidavit is material to any contract awarded pursuant to this Bid. According to Section 4507 of the Pennsylvania Commonwealth Procurement Code, 62 Pa.C.S. § 4507, governmental agencies may require Non-Collusion Affidavits to be submitted together with bids.
2. This Non-Collusion Affidavit must be executed by the member, officer or employee of the bidder who makes the final decision on prices and the amount quoted in the bid.
3. Bid rigging and other efforts to restrain competition, and the making of false sworn statements in connection with the submission of bids are unlawful and may be subject to criminal prosecution. The person who signs the Affidavit should examine it carefully before signing and assure himself or herself that each statement is true and accurate, making diligent inquiry, as necessary, of all of persons employed by or associated with the bidder with responsibilities for the preparation, approval or submission of the bid.
4. In case of a bid submitted by a joint venture, each party to the venture must be identified in the Bid Documents, and an Affidavit must be submitted separately on behalf of each party.
5. The term "Complementary Bid" as used in the Affidavit has the meaning commonly associated with that term in the bidding process and includes the knowing submission of bids higher than the bid of another firm, any intentionally high or noncompetitive bid, and any other form of bid submitted for the purpose of giving a false appearance of competition.
6. Failure to file an Affidavit in compliance with these instructions may result in disqualification of the bid.
7. A bidder's statement that it has been convicted or found liable for any act prohibited by Federal or State Law in any jurisdiction involving conspiracy or collusion with respect to bidding on any public contract within the last three (3) years does not prohibit a government agency from accepting a bid from or awarding a contract to that bidder, but it may be grounds for administrative suspension or debarment in the discretion of the government agency under the rules and regulations of that agency or, in the case of a government agency with no administrative suspension or debarment regulations or procedures, may be grounds for consideration on the question of whether the agency should decline to award a contract to that person on the basis of lack of responsibility.

END OF SECTION 004519

SECTION 005216 – AGREEMENT FORM

The “Standard Form of Agreement between Owner and Contractor, AIA Document A101, 2007 Edition, modified by the Owner for this project, shall be in effect for the duration of this project. A draft copy of the modified Agreement Form is bound herein.

END OF SECTION 005216

SECTION 00.7216 – GENERAL CONDITIONS

The “General Conditions of the Contract for Construction”, AIA Document A201-2007 has been modified for this project and shall be in effect for the duration of this project.

END OF SECTION 00.7216

SECTION 00.7300 - SUPPLEMENTARY CONDITIONS**GENERAL**

The following supplements modify the "General Conditions of the Contract for Construction", AIA Document A 201 - 2007. Where a portion of the General Conditions is modified or deleted by these Supplementary Conditions, the unaltered portions of the General Conditions shall remain in effect.

These supplementary conditions to the contract have been authored by several design professionals and the school owner's solicitor over the course of several years and projects. They are interpreted by ALLOY5 ARCHITECTURE as the property of the PALMERTON AREA SCHOOL DISTRICT. Any discrepancies in these conditions shall be brought to the attention of the Architect prior to placing bid.

ARTICLE 1, GENERAL PROVISIONS

Paragraph 1.1 **BASIC DEFINITIONS**. To subparagraph 1.1.1, delete the last sentence and replace with the following:

"The Contract Documents **DO** include the bidding requirements, which include the Invitation to Bid, the Instructions to Bidders, the Bid Form, Bonds, Bid Security, Prevailing Wage Pre-Determination and portions of addenda relating to Invitation to Bid, the Instructions to Bidders, the Bid Form, Bonds, Bid Security, Prevailing Wage Pre-Determination."

Paragraph 1.1 **BASIC DEFINITIONS**. Paragraph 1.1.3 THE WORK, add new subparagraphs 1.1.3.1 and 1.1.3.2 as follows:

1.1.3.1 Contractor must visit the site of the project before submitting a proposal. Such site visit shall be for the purpose of familiarizing the Contractor with the existing conditions and assessment of the contractors' ability to perform the Work, schedule the Work, execute the Work and Warrant the Work.

1.1.3.2 Contractor shall not interpret Contract Documents in a manner imposing to Owner or Architect, or their agents, employees, officers, directors, or consultants, any duty, obligation, or authority with respect to any items that are not intended to be incorporated into the completed project, or that do not comprise the Work, including, but not limited to, the following: shoring, scaffolding, hoists, weatherproofing, or any temporary facility or activity, because these are the sole responsibility of the Contractor

Paragraph 1.1 **BASIC DEFINITIONS**. To paragraph 1.1.5, THE DRAWINGS, add the following subparagraphs:

1.1.5.1 The Drawings are diagrammatic. Exact slopes, pitches, locations of equipment and points of termination shall be verified by Contractor and approved by owner. This shall include both new work and existing conditions. Should it be found that any system or equipment cannot be installed as shown on the Drawings, the Architect shall be notified in writing before installing or making changes to layout.

1.1.5.2 Contractor shall carefully examine the Contract Drawings and Specifications. If any discrepancies occur between the Drawings or between the Drawings and Specifications, the Contractor

shall report such discrepancies to the Architect in writing and obtain written instructions as to the manner in which to proceed. No departures from the Contract Documents shall be made without prior written approval of the Architect.

Paragraph 1.1 **BASIC DEFINITIONS.** Add new subparagraph 1.1.8, THE OWNER as follows:

1.1.8 The term "Owner" as used in the Contract Documents refers to the WEST SIDE CAREER & TECHNOLOGY

Paragraph 1.1 **BASIC DEFINITIONS.** Add new subparagraph 1.1.9, THE ARCHITECT as follows:

1.1.9 The term "Architect as used in the Contract Documents refer to **ALLOY5 ARCHITECTURE.**

Paragraph 1.1 **BASIC DEFINITIONS.** Add new subparagraph 1.1.11, COMPLETION DATE as follows:

1.1.11 The term completion date means any substantial completion, final completion, milestone, phase as identified in the contract documents.

Paragraph 1.1 **BASIC DEFINITIONS.** Add new subparagraph 1.1.12, THE CONTRACTORS as follows:

1.1.12 The terms, "Prime Contractor", "General Contractor", "Lead Contractor" and or "Contractor" as used in the Contract Documents are defined as the Contractor performing Work:

Paragraph 1.2 **CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS.** To paragraph 1.2.1 add the following subparagraph 1.2.1.1:

1.2.1.1 The Drawings and Specifications are a collective set of documents. Anything shown on the Drawings, but not in the Specifications, or mentioned in the Specifications and not shown on the Drawings, shall be equally binding as if both noted on the Drawings and called for in the Specifications. Architect shall make the final decision consistent with the general intent of the Contract Documents.

Paragraph 1.2 **CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS.** To paragraph 1.2.2 add the following:

The Contractor shall verify dimensions and existing conditions prior to submitted bid and continually while performing work. It is understood, warranted and guaranteed by contractor that this work has been performed and will continue to be performed from the date of receipt of the invitation to bid to final completion.

Paragraph 1.2 **CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS.** To subparagraph 1.2.3 add the following: In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the Architects Interpretations of the Contract Documents.

In the case of an inconsistency within or between Contract Documents not clarified by Addendum, the better quality or greater quantity of work shall be provided in accordance with Architects interpretation.

Paragraph 1.2 **CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS.** Add the following new subparagraphs 1.2.4, 1.2.5, 1.2.6, 1.2.7, 1.2.8, 1.2.9 and 1.2.10:

1.2.4 Do not scale drawings. Working measurements shall be taken from figured dimensions. Add the following: Computed dimensions shall take precedence over scale dimensions, and large scale drawings shall take precedence over small scale drawings

1.2.5 Contractor shall carefully examine the Contract Drawings and Specifications. If any discrepancies occur between the Drawings or between the Drawings and Specifications, the Contractor shall report such discrepancies to the Architect in writing and obtain written instructions as to the manner in which to proceed. No departures from the Contract Documents shall be made without prior written approval of the Architect.

1.2.6 Where the work is shown in complete detail on only half or portion of a Drawing or there is an indication of continuation, the remainder being shown in outline, the work drawn out in detail shall be understood to apply to other like portions of the structure. On all work of a remodeling nature or installation within the present buildings, it will be the responsibility of the Contractor, by personal inspection, to satisfy himself as to the correctness of any information given which may affect the quantity of materials required for a satisfactorily completed contract, whether or not such information is indicated on the Drawings or within the Specifications.

1.2.7 The Drawings are generally diagrammatic and indicative of the work to be installed. Exact locations of equipment and points of termination shall be approved by the Architect. Should it be found that any system or equipment cannot be installed as shown on the Drawings, the Architect shall be notified in writing before installing or making changes to layout.

1.2.8 Anything shown on the Drawings and not mentioned in the Specifications or mentioned in the Specifications and not shown on the Drawings shall have the same effect as if shown or mentioned respectively in both. Any work shown on one Drawing shall be construed to be shown on all Drawings, and the Contractor shall coordinate the Work and Drawings to conform to the requirements of the Contract Documents. Clarifications will be made for questions and discrepancies called to the Architects attention, in writing, within the time period established for questions. Clarifications prior to the bid will be issued as Addenda to the Contract Documents. If such correction or clarification is not made, the work in question shall be considered to be required as specified and shown on the drawings.

1.2.9 The General and Supplementary General Conditions, Specifications, and Drawings contemplate a finished piece of work of such character and quality as is described in and is reasonably inferable from them and the Contractor, recognizing the impossibility of producing drawings and specifications with perfect accuracy, agrees that his submitted price for the work hereunder includes sufficient money allowance to make his work complete and operable, fitting with the work of other contractors and the Owner and in compliance with good practice and the ordinances, codes, and regulations of all bodies or persons having governmental authority over it. The Contractor agrees that inadvertent discrepancies or the failure to repeat on any drawing the figures or notes given on another shall not be the cause for additional charges or claims.

1.2.10 If tight conditions develop, the Contractor shall make arrangements to jointly prepare composite drawings, showing the suggested solution and submit it to the Architect for comment, and if necessary,

approval. All contractors are deemed to have taken into consideration that interferences will occur at various points and it shall be understood that extras for necessary variation will not be approved. All Contractors shall verify all measurements at the site.

Paragraph 1.5 **EXECUTION OF CONTRACT DOCUMENTS**, Subparagraph 1.5.2, add the following:

Execution of the Contract by the Contractor is also a representation that the Contractor has carefully examined the Contract Documents, that the Contractor thoroughly understands the Contract Documents and their intent and purpose, and is familiar with all applicable codes, ordinances, laws, regulations and rules as they apply to the Work and that the Contractor will abide by same

Paragraph 1.6 **OWNER AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE**, add the following new subparagraph 1.6.2:

1.6.2 Contractor's Use of Instruments of Service in Electronic Form:

1.6.2.1 The Architect may, with the concurrence of the Owner, furnish to the Contractor versions of Instruments of Service in electronic form. The Contract Documents executed or identified in accordance with Subparagraph 1.5.1 shall prevail in case of an inconsistency with subsequent versions made through manipulatable electronic operations involving computers.

1.6.2.2 The Contractor shall not transfer or reuse Instruments of Service in electronic or machine readable form without the prior written consent of the Architect.

Add the following paragraph 1.7 to **Article 1**:

1.7 Representatives of the Owner, Contractor and Architect shall meet periodically at mutually agreed-upon intervals for the purpose of establishing procedures to facilitate cooperation, communication and timely responses among the participants. By participating in this arrangement, the parties do not intend to create additional contractual obligations or modify the legal relationships which may otherwise exist.

ARTICLE 2, OWNER

Paragraph 2.1 **GENERAL**, delete paragraph 2.1.2 in its entirety.

Paragraph 2.2 **INFORMATION AND SERVICES REQUIRED OF THE OWNER**, delete paragraph 2.2.1 and replace with the following.

The Owner will secure and pay for necessary zoning approvals, site development approvals, highway access approvals, design approvals, and other approvals related to permanent facilities and required precedent to applications for permits for work at the site.

Paragraph 2.2 **INFORMATION AND SERVICES REQUIRED OF THE OWNER**, delete Subparagraph 2.2.3 and replace with the following:

2.2.3 The Owner has furnished surveys to the Architect describing the physical characteristics, legal limitations, and utility locations for the site of the Project. This information was furnished only for the Architect's use in design and is not a part of the Contract Documents. The information is available for the Contractors' information, but is not a warranty of physical conditions. The Contractor shall visit the site and become acquainted with the existing conditions. Prior to Bidding, the Contractors may make their own investigation to become satisfied as to the site and physical conditions, but such investigation may be performed only under time schedules and arrangements approved in advance by the Owner.

Paragraph 2.2 **INFORMATION AND SERVICES REQUIRED OF THE OWNER**, delete Subparagraph 2.2.5 and substitute the following:

2.2.5 The Contractor will be furnished, free of charge, an electronic copy of the contract documents. Hard copies will not be provided.

Paragraph 2.2 **INFORMATION AND SERVICES REQUIRED OF THE OWNER**, add new Subparagraph 2.2.6 as follows:

2.2.6 Contractors are to perform all factory or shop testing and any other field testing of above or below ground pipes, including pressure, air or vacuum testing required.

Paragraph 2.4 **OWNER'S RIGHT TO CARRY OUT THE WORK**, delete Paragraph 2.4.1 and replace with the following subparagraphs 2.4.1 and 2.4.2:

2.4.1 The Owner shall not be required to comply with the notice provisions hereof, and may proceed to correct deficiencies if Contractor fails within a 24-hour period after receipt of written notice from the Owner to commence and continue correction of such deficiencies where further delay would cause disruption to the project schedule.

2.4.2 If the Contractor fails to commence and continue to correct any deficiencies, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies.

ARTICLE 3, CONTRACTOR

Paragraph 3.1 **GENERAL**. Add new subparagraphs 3.1.4 and 3.1.5 as follows:

3.1.4 Owner reserves the right to refuse access to the site or reject from the site any person Owner deems unfit to be permitted on school grounds and in proximity to students.

3.1.5 Contractor is the sole entity responsible for coordination of Work. Coordination of work shall not be sub contracted to any other entity or assumed to be provided by the Owner or Architect.

Paragraph 3.2 **REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR**. Add new subparagraph 3.2.1.1 as follows:

3.2.1.1 The Contractor shall review the drawings and Work of other separate prime contracts to determine if that Work affects the Contractor's planned Work and also to coordinate and schedule the required work.

Paragraph 3.2 **REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR.** In sub paragraph 3.2.3, delete the last sentence and replace with the following:

The Contractor shall be liable for errors, inconsistencies or omissions in the Contract Documents or from differences between field measurements or conditions and the Contract Documents.

Paragraph 3.2 **REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR.** Add subparagraphs 3.2.4, 3.2.5, 3.2.6, 3.2.7 and 3.2.8 as follows:

3.2.4 Where manufacturer's standard specifications and standard methods of fabrication, installation or erection are referenced in the Contract Documents, Contractor shall submit two copies of each to the Architect before start of work."

3.2.5 The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect for the Architect to evaluate and respond to the Contractor's requests for information, where such information was available to the Contractor from a careful study and comparison of the Contract Documents, field conditions, other Owner-provided information, Contractor-prepared coordination drawings, or prior Project correspondence or documentation.

3.2.6 Explorations and Reports: Reference is made to the General Requirements and Bidding Documents for identification of those reports of explorations and tests of subsurface conditions at the site that have been utilized by Architect in preparation of the Contract Documents. Contractor may rely upon the accuracy of the technical data contained in such reports, but not upon non-technical data, interpretations or opinions contained therein or for the completeness thereof for contractor's purposes. Except as indicated in the immediately preceding sentence and in paragraph 4.3.6, contractor shall have full responsibility with respect to subsurface conditions at the site."

3.2.7 Existing Structures: Reference is made to the Bidding Documents for identification of those drawings of physical conditions in or relating to existing surface structures which are at or contiguous to the site that have been utilized by Architect in preparation of the Contract Documents. Contractor may rely upon the accuracy of the technical data contained in such drawings, but not for the completeness thereof for contractors purposes. Except as indicated in the immediately preceding sentence and in paragraph 4.3.6, contractor shall have full responsibility with respect to physical conditions in or relating to such natures."

3.2.8 The Contractor shall give the Architect timely notice of any additional design drawings, specifications, or instructions required to define the Work in greater detail, or to permit the proper progress of the Work. The Contractor shall not proceed with any work not clearly and consistently defined in detail in the Contract Documents, special requests, additional drawings or instructions from the Architect. If the Contractor proceeds with such work without obtaining further drawings or instruction, he shall correct work incorrectly done at his own expense

Paragraph 3.3 **SUPERVISION AND CONSTRUCTION PROCEDURES.** Paragraphs 3.3.1, in the second sentence, delete the words "...unless Contract Documents give other specific instruction concerning these matters.

Paragraph 3.3 **SUPERVISION AND CONSTRUCTION PROCEDURES**. Paragraphs 3.3.1, delete the last full sentence.

Paragraph 3.3 **SUPERVISION AND CONSTRUCTION PROCEDURES**. Add subparagraphs 3.3.4 and 3.3.5 as follows:

3.3.4 Contractor's supervision of work shall include expediting and coordination of work of trades, supervising and procuring required to insure delivery of materials to maintain work schedules of sub-contractors and progress schedule of project to insure full completion of work, to supply equipment or instruments necessary to complete specified test, checks, balancing of system, to furnish operating instructions, etc."

3.3.5 The Contractor, his employees or his subcontractors shall not install any product or equipment in a manner which is in direct conflict with the manufacturer's recommended requirements. If the manufacturer of the product or equipment has requirements which can not be met by the specific application indicated, the Contractor shall bring this information to the attention of the Architect. Products or equipment installed contrary to their manufacturer's requirements shall be replaced at no additional cost to the Owner unless specifically authorized in writing by the Architect.

Paragraph 3.4 **LABOR AND MATERIALS**, delete Subparagraph 3.4.2 and substitute the following:

3.4.2 After the Contract has been executed, the Owner and Architect will consider a formal request for the substitution of products in place of those specified only under the conditions set forth in the General Requirements (Division 1 of the Specifications). By making requests for substitutions, the Contractor:

- (1) represents that the Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;
- (2) represents that the Contractor will provide the same warranty for the substitution that the Contractor would for that specified;
- (3) certifies that the cost data presented is complete and includes all related costs under this Contract except the Architect's redesign costs, and waives all claims for additional costs related to the substitution which subsequently become apparent; and
- (4) will coordinate the installation of the accepted substitute, making such changes as may be required for the work to be complete in all respects.
- (5) certifies that substitute work offered and approved shall not be a basis for contingent extra charges or additional charges due to changes in related work, such as rough-in, changes in supporting foundations, and other related work.
- (6) shall assume full responsibility for adequacy of substitute work.

Paragraph 3.4 **LABOR AND MATERIALS**. Add subparagraphs 3.4.4, 3.4.5, and 3.4.7 as follows:

3.4.4 Contractor shall not place any order for materials which are not in accordance with the Contract Documents, unless he has informed both the Architect and the Owner of such additional changes and charges and has received written authorization by either a Construction Change Directive or a Change Order.

3.4.5 Whether indicated or not, all products on this project shall be asbestos-free and lead-free. If any suspected asbestos-containing or lead-containing materials are installed, the Owner has the right to have the material in question tested and if proven to contain asbestos or lead, the Contractor shall remove all material in question and replace it with acceptable material at no additional cost to the Owner."

3.4.7 Standards of quality for the work is established by description, by reference to trade name, manufacturer's names or by catalog model or figure numbers. Such references require that which be established, as standards of quality shall be provided without substitution unless permitted by the contract documents

Paragraph 3.4 **LABOR AND MATERIALS**. Add paragraph 3.4.8 and its subparagraphs 3.4.8.1 and 3.4.8.2 as follows:

3.4.8 Work specified which becomes unavailable due to strike, loss of plant through fire or flood, bankruptcy, or other unforeseeable cause beyond Contractor's control, shall be substituted equally from another source subject to substitution procedures in the Contract Documents.

3.4.8.1 Work covered by paragraph 3.4.7 shall not entitle the Contractor to either an increase in cost or contract time. Notwithstanding the same, if the work covered by 3.4.8 results in a savings to Contractor, Owner shall be entitled to a reduction in the Contract Sum. In any event, work covered by paragraph 3.4.8 shall be incorporated into the Project through a properly executed Change Order.

3.4.8.2 Items not ordered by the contractor in a timely manner for incorporation into the Work will not be considered for claims by the Contractor for additional time or costs.

Paragraph 3.5 **WARRANTY**, add subparagraphs 3.5.2 and 3.5.3 as follows:

3.5.2 The minimum Warranty period as defined above, shall be one (1) year from date of substantial completion of the entire project or each phase listed on the Contract Documents. The Contractor is responsible for maintaining all systems that are operational but not fully completed and warranted because they are being used in other phases of the project. These systems include but are not limited to roofing, electrical systems, lighting systems, mechanical systems, plumbing systems, technology and phone systems and general construction systems. Contractor is responsible to obtain any extended warranties necessary to ensure that the full one year warranty is provided from the date of substantial completion of each phase.

3.5.3 The warranty provided in subparagraph 3.5.1 shall be in addition to and not in limitation of any other warranty required by the Contract Documents or otherwise prescribed by law.

Paragraph 3.6 **TAXES**, add subparagraphs 3.6.1.1 as follows:

3.6.1.1 Contractor shall be responsible for and shall pay all applicable sales, use, excise or other taxes required by law on all materials, tools, apparatus, equipment, fixtures, services, incidentals or otherwise which may be purchased or used in connection with the Work or portions thereof. The Bid shall be made in accordance with such laws and shall include all applicable taxes in the Bid amount. Notwithstanding the foregoing, however, Owner is exempt (excluded) from sales and/or use tax in Pennsylvania on certain transactions. Contractor and all subcontractors shall bid and shall purchase as exempt (excluded) from Pennsylvania sales and/or use tax all tangible personal property within the definition of 'building machinery and equipment' as that term is defined in Act No. 45-1998 (72 P.S. § et seq.). No charges shall be allowed for such exempt items. It shall be the Contractor's responsibility to determine those items for which an exemption will apply, and the Contractor shall obtain legal or other tax advice to determine how and to what extent an exemption from the taxes apply. In order to facilitate such purchase free of sales and/or use tax in Pennsylvania, and upon certification by Contractor that an item is, in fact, tax exempt, the owner agrees to execute a tax exemption certificate prepared by Contractor or a subcontractor as may be required by the regulations of the Pennsylvania Department of Revenue

Paragraph 3.6 **TAXES**, add subparagraphs 3.6.2, 3.6.3 and 3.6.4 as follows:

3.6.2 Access to Accounting Records: The Contractor shall check all materials, equipment and labor entering into the Work and shall keep such full and detailed accounts as may be necessary for proper financial management under this Agreement, and the system shall be satisfactory to the Owner. The Owner or its representative shall be afforded access to all the Contractor's records, books, correspondence, instructions, drawings, receipts vouchers, memoranda, and similar data relating to this Contract, and the Contractor shall preserve all such records for a period of three years, or for such longer period as may be required by law, after the final payment. (AIA Document A111-1978, Article 12).

3.6.3 Assignment of Refund Rights: The Contractor agrees to assign and transfer to the Owner all its rights to sales and use tax which may be refunded as a result of a claim for refund for materials purchased in connection with this contract. The Contractor further agrees that it will not file a claim for refund for any sales or use tax which is the subject of this assignment.

3.6.4 Contracts with Subcontractors: The Contractor agrees to include the "Access to Accounting Records" and "Assignment of Refund Rights" paragraphs, in full, in any contracts with subcontractors.

Paragraph 3.7 **PERMITS, FEES AND NOTICES**, add subparagraphs 3.7.1.1 and 3.7.1.2 as follows:

3.7.1.1 Owner shall pay for building permits required for the project as precedent to construction. The Contractor shall submit, with no markup, the cost of any permits or inspection fees required for the Project. The Owner will reimburse the Contractor, by Change Order with no markup, for fees paid to the municipal authorities having jurisdiction. The Contractor shall secure and arrange for all necessary utility connections and municipal or agency approvals or permits required for the Project.

3.7.1.2 To the extent Contractor pays for any permit, connection and/or tap-in fee not otherwise properly due, the owner shall be entitled to any refund relating thereto and the Contractor agrees to assign any and all rights to said refund claim to the owner. The Contractor and all subcontractors hereby assign to owner all rights to claim any such refund claim and to any resulting refund and hereby appoint to the Owner as Attorney-in-Fact to execute and acknowledge in their respective names and to prosecute such

refund claims before administrative agencies and courts in Pennsylvania having jurisdiction over such claims. The Owner or its agent shall have the right to review the books and records of Contractor and all subcontractors for the purpose of documenting and substantiating any such refund claim. Contractor and all subcontractors shall fully cooperate with owner in pursuing any such refund claim and shall make available to owner any applicable documents.

Paragraph 3.10 **CONTRACTOR'S CONSTRUCTION SCHEDULES**, add the following sub-paragraphs as follows:

3.10.4 The Project Schedule shall be submitted by the Contractor for his work.

3.10.5 The Project Schedule must be developed by the Contractor and must incorporate the milestone, substantial completion and final completion dates as indicated on the contract documents. No deviations from these will be accepted. Should the contractor fail to meet any date, the owner shall pursue liquidated damages and contractor must provide the owner with a recovery schedule.

Paragraph 3.11 **DOCUMENTS AND SAMPLES AT THE SITE** Delete Paragraph 3.11.1 in its entirety and replace with the following:

3.11.1 The Contractor shall maintain in a complete copy of the contract documents, architects supplemental instructions and testing agency inspection reports including those provided by manufactures.

Paragraph 3.12 **SHOP DRAWINGS, PRODUCT DATA AND SAMPLES**, add the following subparagraph 3.12.11 as follows:

3.12.11 The Architect's review of Contractor's submittals will be limited to examination of an initial submittal and two (2) resubmittals. The Architect's review of additional submittals will be made only with the consent of the Owner after notification by the Architect. The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect for evaluation of such additional resubmittals.

Paragraph 3.15 **CLEANING UP**, modify subparagraph 3.15.1 as follows:

3.15.1 The Contractor shall keep the premises clean at all times of dirt, rubbish and debris resulting from the work and shall remove all rubbish and debris in metal containers at the end of each working day. The Contractor shall remove all rubbish cartons resulting from the installation of fixtures and equipment. If the premises are not kept clean at all times and if within 24 hours after verbal notice from the Owner the dirt, rubbish, and debris is not cleaned up by Contractor then Owner will arrange for such cleanup at the Contractor's expense. Prior to substantial completion of the Work, the Contractor shall do the cleaning of the surfaces of all his installations as may be required by the various Specifications to the satisfaction of the Architect.

Paragraph 3.15 **CLEANING UP**, add subparagraph 3.15.3 as follows:

3.15.3 The Contractor shall make provisions for and be personally responsible for removing all mud and debris from all vehicles and equipment leaving the construction site onto Municipal streets adjoining the project site and shall remove any debris and litter which may fall upon Municipal streets. If the same

is not removed and properly washed down within 24 hours after verbal notice from the Municipality to the Owner, then in that event, said debris and litter shall be removed from the street by the Owner at the Contractor's expense."

Paragraph 3.15 **CLEANING UP**, add subparagraph 3.15.4 as follows:

3.15.4 In readiness for occupancy of the Owner, the Contractor, when directed by the Architect, shall thoroughly clean all portions of the work to be occupied and all applicable material and equipment surfaces suitable for occupancy. Cleaning of windows and other glass in the Project is a contractual requirement.

Paragraph 3.16 **ACCESS TO WORK**, revise subparagraph 3.16.1 to read as follows

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

Paragraph 3.18 **INDEMNIFICATION**, delete subparagraph 3.18.1 in its entirety and replace with the following:

3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify, defend and hold harmless the Owner, Architect and consultants, representatives, agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to, attorneys' fees and defense costs arising out of or resulting from performance of the Work, to the extent caused in whole or in part by the acts or omissions of the Contractor, other Contractors, Prime Contractors, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts or omissions they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Paragraph 3.18. The Contractor agrees to and does hereby assume on behalf of the Owner and Architect the defense of any action at law or in equity which may be brought against such indemnitees by reason of claims for which indemnity is owed hereunder, and will pay on behalf of such indemnitees, upon their demand, the amount of any judgment that may be entered against such indemnitees in any such action. In the event that any such claim, loss, cost, expense, liability, damage or injury arises or is made, asserted, threatened against the Owner for which the Contractor or its insurer does not admit coverage, or if the Owner reasonably determines such coverage to be inadequate, the Owner shall have the right to withhold from any payments due or to become due to the Contractor an amount sufficient to protect the Owner from such claim, loss, cost, expense, liability, damage or injury, including attorneys' fees and expenses reasonably necessary for the defense thereof.

Add new Paragraph 3.19 **EQUAL EMPLOYMENT OPPORTUNITY** as follows:

3.19.1 During the performance of this contract the Contractor agrees as follows:

- (1) The Contractor and the Contractor's Sub-contractors shall not discriminate against any employee or applicant for employment because of race, creed, color or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that

employees are treated during employment without regard to their race, creed, color or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of the non-discrimination clause.

- (2) The Contractor and the Contractor's Subcontractors shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that qualified applicants will receive consideration for employment without regard to race, creed, color or national origin.
- (3) Discrimination Prohibited: According to Section 755, Public school Code of Pennsylvania, 1948 as amended, the contractor agrees:
 - (a) That in the hiring of employees for the performance of work under this contract, or any sub-contract hereunder, no such contractor or subcontractor, shall, by reason of race, creed or color, discriminate against any citizen of the Commonwealth of Pennsylvania who is qualified and available to perform the work to which the employment relates;
 - (b) That no contractor, sub-contractor, nor any person on his behalf, shall in any manner discriminate against or intimidate any employee hired for the performance of work under this contract on account of race, creed or color;
 - (c) That there may be deducted from the amount payable to the contractor under this contract, a penalty of five dollars (\$5) for each person for each calendar day during which such person was discriminated against or intimidated, in violation of the provisions of the contract; and,
 - (d) That this contract may be canceled or terminated by the owner, and all money due or to become due hereunder may be forfeited, for a second or any subsequent violation of the terms or conditions of this portion of the contract.

ARTICLE 4, ADMINISTRATION OF THE CONTRACT

Paragraph 4.1 **ARCHITECT**. In subparagraph 4.1.2, delete the word "...Contractor..."

Paragraph 4.1 **ARCHITECT**. In subparagraph 4.1.3, delete the words "...against whom the Contractor makes no reasonable objection and..."

Paragraph 4.2 **ARCHITECT'S ADMINISTRATION OF THE CONTRACT**; In subparagraph 4.2.2, revise "item (2) in the first sentence to read as follows:

"...to endeavor to guard, but can not guarantee, the Owner against defects and deficiencies in the Works, and....."

Paragraph 4.2 **ARCHITECT'S ADMINISTRATION OF THE CONTRACT**; Add subparagraph 4.2.2.1 as follows

4.2.2.1 The Contractor shall reimburse the Owner for compensation paid to the Architect for additional site visits made necessary by the fault, neglect or request of the Contractor.

4.2.14 The Architect acknowledging his lack of expertise in the area of asbestos abatement/control, disclaims all responsibility for discovery, treatment or removal of any asbestos encountered during this contract. The Owner shall recognize that asbestos is a major health hazard and that he should rely on federal regulations and expert advice for its safe handling under a separate contract."

Paragraph 4.3 **CLAIMS AND DISPUTES**. Delete Paragraph 4.3.2 in its entirety and replace with the following:

4.3.2 Claims by either party must be made within ten (10) calendar days after occurrence of the event giving rise to such claim or within ten (10) calendar days after the claimant first recognizes the condition giving rise to the claim, whichever is later. Claims must be made by written notice. The failure to provide written notice within the 10 calendar days after the occurrence or non-occurrence that is the subject of the claim, dispute or other matter shall result in forfeiture. An additional claim made after the initial claim has been implemented by Change Order will not be considered unless submitted in a timely manner.

4.3.2.1 The Contractor shall provide written notice of the Claim in accordance with these requirements or the Claim shall be forfeited. The words "written notice" shall be defined as a letter of claim with a title or caption stating "Notice of Claim" and shall provide a description of the claim, reference related correspondence or directives and the cost and/or time impact of the claim."

Paragraph 4.3 **CLAIMS AND DISPUTES**. Delete paragraph 4.3.4 in its entirety and replace with the following:

4.3.4 The rights and obligations of the Contractor in connection with concealed and unknown conditions are set forth in the Instructions to Bidders.

Paragraph 4.3 **CLAIMS AND DISPUTES**. Paragraph 4.3.6, delete the reference to "Paragraph 4.3" and replace with "this Article 4".

Paragraph 4.3 **CLAIMS AND DISPUTES**. Paragraph 4.3.6, add subparagraph 4.3.6.1 as follows:

4.3.6.1 No claims for additional cost will be considered for delays caused by other Contractors, coordination issues, project schedules, phasing sequence or time extensions due to weather and unclassified excavations

Paragraph 4.3 **CLAIMS AND DISPUTES**. Add the following to the end of subparagraph 4.3.7.1:

“Extension of time shall be the sole recourse for delays and shall not act as an entitlement to Contractor for damages for said delays.”

Paragraph 4.3 **CLAIMS AND DISPUTES**. Delete subparagraphs 4.3.7.1 and 4.3.7.2 and replace with the following:

4.3.7.1 If the Contractor wishes to make claim for an increase in the Contract time, written notice as provided herein shall be given. The Contractor’s claim shall include an estimate of the probable effect of delay on progress of the Work. In the case of continuing delay only one claim is necessary. Extension of time shall be the sole recourse for delays and shall not act as an entitlement to Contractor for damages for said delays.

4.3.7.2 No extension of time shall be granted because of seasonal or abnormal variations in temperature, humidity or precipitation, which conditions shall be wholly at the risk of the Contractor, whether occurring within the time originally scheduled for completion or within the period of any extension granted. Any additional costs of operations or conditions shall be the responsibility of the Contractor. Extension of time shall be the sole recourse for variations in weather conditions.

Paragraph 4.3 **CLAIMS AND DISPUTES**. Add the following Clauses 4.3.7.3 and 4.3.7.4 to Subparagraph 4.3.7:

4.3.7.3 Claims for increase in the Contract Time shall set forth in detail the circumstances that form the basis for the Claim, the date upon which each cause of delay began to affect the progress of the Work, the date upon which each cause of delay ceased to affect the progress of the Work and the number of days’ increase in the Contract Time claimed as a consequence of each such cause of delay. The Contractor shall provide such supporting documentation as the Owner may require including, where appropriate, a revised construction schedule indicating all the activities affected by the circumstances forming the basis of the Claim.

4.3.7.4 The Contractor shall not be entitled to a separate increase in the Contract Time for each one of the number of causes of delay which may have concurrent or interrelated effects on the progress of the Work, or for concurrent delays due to the fault of the Contractor.

Paragraph 4.3 **CLAIMS AND DISPUTES**. Subparagraph 4.3.8, in the first sentence, revise “21 days” to read “5 days”.

Paragraph 4.3 **CLAIMS AND DISPUTES**. Subparagraph 4.3.9 shall be modified to the extent that the following Rules for Measurement for Unit Prices shall pertain:

4.3.9.1 General Excavation: To grades and limits established.

4.3.9.2 Footing Excavation: Plan size requirements to grades established.

4.3.9.3 Formwork Excavation: 1'-9" beyond formed surfaces.

4.3.9.4 Wall Excavation: 1'-0" beyond wall.

4.3.9.5 Pipe Trench Excavation: Sides - inside pipe diameter plus 2'-0"; Bottom - 6" below bottoms of pipe.

4.3.9.6 Concrete Quantities: Plan size requirements to grades and/or elevations established.

4.3.9.7 Backfill: Excavation volume less volume displaced by walls and footings.

4.3.9.8 Excavation includes removal of excess and unsuitable material from site.

4.3.9.9 Unit prices shall remain in effect until the Date of Substantial Completion for the area so designated therein, after which they shall be subject to renegotiation.

Paragraph 4.3 **CLAIMS AND DISPUTES**, delete subparagraph 4.3.10 in its entirety.

Delete Paragraph 4.4 **RESOLUTION OF CLAIMS AND DISPUTES** in its entirety.

Delete Paragraph 4.5 **MEDIATION** in its entirety.

Delete Paragraph 4.6 **ARBITRATION**. Delete the word, "ARBITRATION" and replace with "DISPUTE RESOLUTION".

Delete Paragraph 4.6 **DISPUTE RESOLUTION**. Delete subparagraphs 4.6.1 and 4.6.2 and replace with the following:

4.6.1 All Claims not subject to arbitration between and among the Lead and other Prime Contractors under Paragraph 3.3.7 and instead properly asserted against Owner and arising out of or related to the Contract may after review by the Architect or 30 days after submission of the Claim to the Architect, whichever first occurs, shall be subject to the dispute resolution process set forth in Subparagraphs 4.6.2 through 4.6.9.

4.6.2 Claims and disputes between Contractor and Owner must be submitted first to the Architect.

4.6.2.1 Subject to the specific provisions relating to Notice and changes in the Work, claims and disputes shall be referred to Architect with a request for a formal decision in accordance with this Subparagraph.

4.6.2.2 The rendering of a final construction decision of Lead Contractor or a decision by the Architect or other representative of the Owner does not constitute the final decision of Owner under this Paragraph 4.6.

4.6.2.3 Final construction decisions involving disputes between Contractors are subject to the exclusive remedy of arbitration between the involved Contractors.

4.6.2.4 Owner through a designated representative shall render its decision in writing within a reasonable time after receipt of all data required under this Subparagraph 4.6.2.

4.6.2.5 Written supporting data shall be submitted to Owner within thirty (30) days of the submission of the Claim, unless Owner, in its sole discretion, allows Contractor an additional period of time to ascertain or compile data in support of the Claim.

4.6.2.6 The Contractor's claim for an adjustment in contract price shall include references to the provisions of the Contract Documents relied upon, and documentation both as to contractual entitlement and as to quantum or amount claimed to be due.

4.6.2.7 The Contractor's claim for an extension of time shall include an estimate of the probable effect of delay on progress of the Work. In the case of continuing delay only one claim is necessary. Extension of time shall be the sole recourse for delays and shall not act as an entitlement to Contractor for damages for said delays

Paragraph 4.6 **DISPUTE RESOLUTION**. Delete subparagraph 4.6.3 and replace with the following:

4.6.3 The Owner's designated representative shall provide a formal written response to the Contractor's Claim within a reasonable period of time.

4.6.3.1 The time periods set forth in this Paragraph relate solely to the administration of pending claims and disputes and are neither intended to, nor shall they, modify or affect any requirements under the Contract Documents relating to Notice and the time required therefore or any other time requirements of this Contract. Receipt of such a Claim by the Architect does not constitute a waiver of Contractor's obligations under the Construction Documents.

4.6.3.2 Any decision of Owner to allow an additional period of time for the submission of written supporting data relates solely to the administration of pending claims and disputes and is not intended to, nor shall it be interpreted as waiving any notice requirements under the Contract Documents or the requirements regarding notice set forth in Subparagraph 4.6.2.1.

Paragraph 4.6 **DISPUTE RESOLUTION**. Delete subparagraphs 4.6.4, 4.6.5 and 4.6.6 in their entirety and replace with the following:

4.6.4 The rendering of a decision by the designated representative of the Owner under Subparagraph 4.6.3 with respect to any such claim, dispute, or other matter is a condition precedent to any further action under this Paragraph. Such decision shall be final and binding upon Contractor unless Contractor notifies Owner in writing of Contractor's exception to such decision within thirty (30) days of Contractor's receipt of the decision thereon

4.6.5 Contractor shall continue to prosecute the Work and adhere to the accepted Construction Schedule during all disputes or disagreements relating to any claim or dispute under the Contract Documents. No Work shall be delayed or postponed pending resolution of any claims, disputes or disagreements.

4.6.6 Contractor agrees that compliance by Contractor with this Paragraph shall be a condition precedent to the presentation of a claim or dispute to the Architect and to the Owner and to any further action under this Paragraph.

Paragraph 4.6 **DISPUTE RESOLUTION**, add new subparagraphs 4.6.7, 4.6.8 and 4.6.9 as follows:

4.6.7 The designated representative of the Owner will attempt to resolve all claims and disputes between Owner and Contractor. Should the Contractor not be satisfied with the representative's recommendation or decision regarding a claim, dispute or other matter rendered under Subparagraph 4.6.3, Contractor may request a second-step administrative determination on the Claim by filing a written demand within thirty (30) days of the decision. Owner shall, within thirty (30) days of a demand for such a second-step administrative determination or on its own initiative, designate an individual to serve as Claims Administrator. Owner, Architect and all affected Contractors will attend administrative conferences at the call of the Claims Administrator. Owner and Contractor will cooperate fully in the administrative investigation conducted by the Claims Administrator at the administrative conferences and at such other times as the Claims Administrator shall determine, and shall furnish documents and other information required by the Claims Administrator. The failure of the Contractor to furnish documents required by the Claims Administrator, promptly after written notice to Contractor or the request, shall result in the Contractor's forfeiture of the Claim. Within thirty (30) days of the completion of the administrative investigation, the Claims Administrator shall render a decision and recommendation to Owner and Contractor. The decision and the recommendation will be binding on neither party and will not be admissible in any proceeding. Unless the decision and recommendation is accepted by both Owner and Contractor, the aggrieved party may submit its claim to the Court of Common Pleas of Northampton County, PA.

4.6.8 In the event of a dispute between or among Contractors that result in the issuance of a final construction decision by Lead Contractor, Contractor's sole and exclusive remedy for all claims is the commencement of common-law arbitration against the other involved Contractors, pursuant to the provisions of applicable law. The damage remedy in such proceedings hereby provided in favor of the Contractor shall be exclusive remedy for disputes between the Contractors.

4.6.9 The Contractors shall have no right of action against Architect or the Claims Administrator in connection with any disputes.

ARTICLE 5, SUBCONTRACTORS

Paragraph 5.2 **AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK:**
Add subparagraph 5.2.1.1 to subparagraph:

5.2.1.1 Not later than 30 days after the date of the Notice to Proceed, the Contractor shall furnish in writing to the Owner through the Architect the names of persons or entities proposed as manufacturers, fabricators or material suppliers for the products, equipment and systems identified in the Project Specifications and drawings and, where applicable, the name of the installing Subcontractor. The Owner reserves the right to deduct \$600.00 from contract amount for each additional day that all information is not furnished.

Paragraph 5.2 **AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK:**
Delete subparagraph 5.2.3 and replace with the following:

5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. There shall be no adjustment in the Contract Sum because of such substitution.

Paragraph 5.2 **AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK:**
Add new subparagraphs 5.2.3.1, 5.2.3.2 and 5.2.3.3 as follow:

5.2.3.1 Where Contractor sublets portions of the work, the entire responsibility for the subdividing of work rests with the Contractor. The Owner and the Architect are not responsible for the manner of the subdivision of the work and neither will enter into nor settle disagreements or disputes between Contractor and Subcontractors. The arrangement of Specifications and the manner of graphic illustration of Drawings are for convenience of reference and do not comprise any exacting method of subdividing work for purposes of subcontracting, except where the Contract Documents require an undivided responsibility for certain work.

5.2.3.2 Contractor shall require each Subcontractor to (1) Inspect surfaces and job conditions before beginning work at Site, (2) Accept or cite necessary corrections in surfaces and job conditions before beginning work at Site, and (3) Protect his own materials, equipment and work from damage, injury or loss due to weather or due to work of the Contractor, other Subcontractors, or other Contractors. The best means of protection shall be supplied, and removed when no longer required.

5.2.3.3 Contractor shall arrange during the progress of the Work for necessary openings (temporary and permanent) chases, sleeves in walls, floors, ceilings roof and partitions as required by his subcontractors.

Add new Paragraph 5.5 **PAYMENT TO SUBCONTRACTORS** as follows:

5.5 PAYMENT TO SUBCONTRACTORS

5.5.1 The Contractor shall pay each Subcontractor, upon receipt of payment from the Owner, an amount equal to the percentage of completion allowed to the Contractor on account of such Subcontractor's Work, less the percentage retained from payments to the Contractor. The Contractor shall also require each Subcontractor to make similar payments to Sub-subcontractors. All such payments shall be paid within the time limits required by the Pennsylvania Contractor and Subcontractor Payment Act, 73 P.S. §501, et seq.

5.5.2 If the Owner fails to approve an Application for Payment for a cause which the Owner and the Architect determine is the fault of the Contractor and not the fault of the particular Subcontractor, or if the Contractor fails to make payment which is properly due to a particular Subcontractor, the Owner may pay such Subcontractor directly, less the amount to be retained under its Subcontract. Any amount so paid by the Owner shall be repaid to the Owner by the Contractor in the manner set forth in Paragraph 2.4. The Owner shall have no obligation to pay or to see to the payment of any monies to any Subcontractor. Nothing contained in Paragraph 5.5 shall be deemed to create any contractual relationship between the Owner and any Subcontractor or to create any rights in any Subcontractor

against the Owner. The Contractor shall promptly advise the Owner of any claim or demand by a Subcontractor claiming that any amount is due to such Subcontractor or claiming any default by the Contractor in any of its obligations to such Subcontractor.

ARTICLE 6, CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

Paragraph 6.1 **OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS:** In subparagraph 6.1.3, delete the words "...and of each separate contractor..." from the first sentence.

Paragraph 6.1 **OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS:** Add subparagraphs 6.1.3.1 and 6.1.3.2 as follows:

6.1.3.1 Each separate prime contractor shall be responsible for the coordination of their own Work with the other prime contractors. The General Construction Contractor shall be the coordinating contractor among the prime contractors for the project. All other Prime Contractors shall cooperate and coordinate their Work with the General Construction Contractor. The Coordinating Contractor shall be responsible for making decisions not mutually agreed upon by another prime Contractor. The final construction decision of the Coordinating Contractor shall be at all times consistent with the design intent, the most current agreed upon project schedule and with the agreement of the Owner and Architect. The final decision of the Coordinating Contractor shall be accepted and implemented by the other prime contractors. The progress of the work shall not be delayed or affected pending any such action in accordance with applicable laws.

6.1.3.2 Regarding mechanical and electrical Work on the project, and subject to the overall responsibility of the Lead Contractor in connection with all of the Work, each separate Prime Contractor shall be responsible for the coordination of their own Work with the other Prime Contractors, and for observing the requirements set forth in Division 1. The coordination of mechanical and electrical Work shall also be subject to the responsibility of the Lead Contractor in connection with the rendering of final construction decisions. Such responsibility shall however be invoked only after the provisions of Division 1 have been fully observed.

Paragraph 6.2 **MUTUAL RESPONSIBILITY**, delete paragraph 6.2.3 in its entirety and replace with the following:

6.2.3 Cost caused by delays or improperly timed activities or defective construction shall be borne by the parties responsible therefore, excepting however, Owner and Architect who shall not be liable to any Contractor, subcontractor or sub-subcontractor for claims or damages of monetary or other nature caused by or arising out of delays contemplated or not contemplated at the signing of the contract. The sole remedy against the Owner for delays shall be the allowance to a successful claimant of additional time for completion of work.

Paragraph 6.2 **MUTUAL RESPONSIBILITY**, Paragraph 6.2.4, add the following:

"The Contractor agrees to indemnify and hold the Owner and Architect harmless from any claims or damages brought by a separate Contractor arising out of actions or omissions of the Contractor, its Subcontractors or suppliers in performing their Work under the Contract Documents."

Paragraph 6.2 **MUTUAL RESPONSIBILITY**, Paragraph 6.2.4, add new subparagraphs 6.2.4.1 and 6.2.4.2 as follows:

6.2.4.1 Should the Contractor wrongfully cause damage to the work or property of any separate contractor, the Contractor shall, upon due notice, promptly attempt to settle with the separate contractor by agreement, or otherwise to resolve the dispute. Such dispute shall not delay the completion of the Work. Work shall be continued by the separate contractor claiming damages at his expense subject to his right to recover damages. If such separate contractor sues the Owner or the Architect on account of any damage alleged to have been caused by the Contractor, the Owner or Architect shall notify the Contractor who shall defend such proceedings at the Contractor's expense, and if any judgment or award against the Owner or Architect arises therefrom the Contractor shall pay or satisfy it and shall reimburse the Owner, Owner's Representative or Architect for all attorneys' fees and court costs which the Owner, Owner's Representative or Architect has incurred.

6.2.4.2 The Contractor shall promptly remedy damage wrongfully caused by the Contractor to completed or partially completed construction or to property of the Owner or separate contractors. The Contractor agrees to indemnify and hold the Owner harmless from any claims or damages brought by a separate Contractor arising out of actions or omissions of the Contractor, its subcontractors or suppliers in performing their work under the Contract Documents.

ARTICLE 7, CHANGES IN THE WORK

Paragraph 7.1 **GENERAL**, delete subparagraph 7.1.3 and replace with the following:

7.1.3 Before any Change Order is prepared, the Contractor shall submit to the Architect, an itemized breakdown of the cost of the proposed Change in the Work. The term "cost" shall be interpreted to mean and include the actual cost of the following:

- (1) Labor, including foremen.
- (2) Materials at cost plus applicable taxes entering permanently into the work.
- (3) Rental cost of construction plant and equipment whether rented from the Contractor or others.
- (4) Power and consumable supplies for the operation of power equipment.
- (5) Liability insurance and bonds.
- (6) Social security, old age and unemployment contributions.

Paragraph 7.1 **GENERAL**, add the following subparagraph 7.1.4:

7.1.4 The combined overhead and profit included in the total cost to the Owner of a change in the Work shall be based on the following schedule:

- (1) For the Contractor, for Work performed by the Contractor's own forces, 15 percent of the cost.
- (2) For the Contractor, for work performed by the Contractor's Subcontractor, 10 percent of the amount due the Subcontractor.

- (3) For each Subcontractor or Sub-Subcontractor involved, for work performed by that Subcontractor's or Sub-subcontractor own forces, 15 percent of the cost.
- (4) For each Subcontractor, for Work performed by the Subcontractor's Sub-subcontractors, 10 percent of the amount due the Sub-subcontractor.
- (5) Cost to which overhead and profit is to be applied shall be determined in accordance with Subparagraph 7.3.6.
- (6) In order to facilitate checking of quotations for extras or credits, all bids, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials and Subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are Subcontracts, they shall be itemized also. In no case will a change involving over \$500 be approved without such itemization.

Paragraph 7.1 **GENERAL**, add the following subparagraph 7.1.5 as follows:

7.1.5 Matters involving extra work and changes in the work are subject to the following provisions:

7.1.5.1 Owner reserves the right to accept or reject Contractor's price, and in instances of more than one price to accept one or more prices or reject one or more or all prices. Contractor may not make a charge of any kind regarding proposed extra work or proposed changes in the Work that were not accepted.

7.1.5.2 Contractor agrees that prices for changes in the Work and for extra work will not include charges involving penalties or damages for assumed delays in the Work, charges for estimating, cancellation charges on prior rejected work, and similar amounts which do not relate directly to costs of labor and material and equipment appurtenant to work involved.

7.1.5.3 Unless Contract Time must be unchanged and is so stated in the applicable Change Order or Construction Change Directive, extra time granted to Contractor because of extra work or changes in the Work shall be final, without penalty regarding the essence of time in the Contract.

7.1.5.4 No charges by Contractor for extra work or changes in the Work, nor claims on account thereof, shall be valid unless duly authorized pursuant to the procedure herein described. Written authority to perform extra work or changes in the Work must be in possession of Contractor before such work commences in order that Contractor's right to payment on account thereof may be valid.

7.1.5.5 All Change Orders shall be accompanied by detailed price breakdowns.

7.1.5.6 Owner reserves the right to contract with a separate Contractor to perform any extra Work or to perform such Work with its own forces.

Paragraph 7.2 **CHANGE ORDERS**, add new subparagraph 7.2.3 as followings:

7.2.3 In order to facilitate checking of quotations for adjustments in the Contract Sum, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including, labor, materials, and subcontracted. Labor and materials shall be itemized in the manner prescribed above. When major cost items are subcontracted, these costs shall be itemized also.

Paragraph 7.3 **CONSTRUCTION CHANGE DIRECTIVES**, modify sub-paragraph 7.3.6 by deleting the words "a reasonable allowance for overhead and profit" and substitute "an allowance for overhead and profit in accordance with Clauses 7.1.4"

ARTICLE 8, TIME

Paragraph 8.1 **DEFINITIONS**, add Subparagraph 8.1.5 as follows:

8.1.5 The Project Schedule as used in the Contract Documents is the written approved schedule by the Contractor (s), and it shall be, with respect to time, become the essence of the contract. The Project Schedule may be changed or revised only with the written consent of all separate Contractors and the Owner.

Paragraph 8.3 **DELAYS AND EXTENSIONS OF TIME**, Paragraph 8.3.1, add new subparagraph 8.3.1.1 as follows:

8.3.1.1 No extension of Contract Time will be considered or approved if the act or occurrence constituting the basis of the request or claim is for non-delivery of materials due to any act or neglect of the Contractor, or the failure of the Contractor to employ, furnish or obtain, as necessary for the timely prosecution of the work, shop drawings, sufficient labor, materials or equipment, or other matters which shall be within the control of the Contractor. Any delay which results due to any of the foregoing causes shall be the sole responsibility of the Contractor.

Paragraph 8.3 **DELAYS AND EXTENSIONS OF TIME**, Paragraph 8.3.2, delete the reference to "Paragraph 4.3 and replace with "Article 4".

Paragraph 8.3 **DELAYS AND EXTENSIONS OF TIME**, delete subparagraph 8.3.3 and replace with the following:

8.3.3 The Contractor recognizes that delays, acceleration or hindrances may occur. No claims for increased costs, charges, expenses or damages of any kind, shall be made by the contractor against the Owner and Architect for any delays, acceleration, hindrances or sequencing of work from any cause whatsoever, including but not limited to, strikes, walkouts, extended overhead, winter protection or work stoppages during the progress of any portion of the work, notwithstanding whether such delays be avoidable or unavoidable. The contractor's sole remedy for delays, acceleration, hindrances or sequencing of work shall be an extension of Contract Time, pursuant to and only in accordance with this Paragraph 8.3. Such extension shall be a period equivalent to the time lost, day for day, by reason of any and all of the aforesaid causes. All claims for extension of time for delays, acceleration, hindrances or sequencing of work shall be made, in writing, to the Architect, and Owner no more than seven (7)

calendar days after the occurrence of the delay, acceleration or hindrance. A written request for an extension of time shall be a condition precedent to the contractor's right to claim an extension of time.

Paragraph 8.3 **DELAYS AND EXTENSIONS OF TIME**, add new paragraph 8.3.4, 8.3.5 and 8.4.6 as follows:

8.3.4 Notwithstanding anything to the contrary in the Contract Documents, an extension in the contract time, to the extent permitted under this paragraph 8.3, shall be the sole remedy of the Contractor for (1) delay in the commencement, prosecution or completion of the work; (2) hindrance or obstruction in the performance of the work; (3) loss of productivity; or (4) other similar claims (collectively referred to in this subparagraph as delays) whether or not such delays are foreseeable, unless a delay is caused by the acts of the Owner constituting active interference with the Contractor's performance of the work, and only to the extent that such acts continue after the Contractor furnishes the Owner with written notice of such interference. In no event shall the Contractor be entitled to any compensation or recovery of any damages, in connection with any delay, including, without limitation, consequential damages, lost opportunity cost, impact damages or similar remuneration. The Owner's exercise or failure to exercise any rights or remedies under the Contract Documents (including without limitation, ordering changes in the work, or directing suspension, rescheduling or correction of the work), regardless of the extent or frequency thereof, shall not be construed as active interference with the Contractor's performance of the work.

8.3.5 No payment or compensation or claim for damages shall be made to the Contractor as compensation for damages for any delays or hindrances from any cause whatsoever in the progress of the Work, or for acceleration or advancement of the Work in accordance with the accepted construction schedule and revisions thereto, notwithstanding whether such delays be avoidable or unavoidable. The Contractor's sole remedy for delays shall be an extension of time only, pursuant to and only in accordance with this Paragraph 8.3, such extension to be a period equivalent to the time lost by reason of any and all of the aforesaid causes. In consideration for this grant of a time extension, the Owner and Architect shall not be held responsible for any loss or damage or increased costs sustained by the Contractor through any delays caused by the Owner or Architect or any other Prime Contractor or on account of the aforesaid causes or any other cause of delay or acceleration. In the event the Contractor shall choose to litigate this clause or issue and a final decision adverse to Contractor is rendered in the litigation, the Contractor shall reimburse the Owner and the Architect for their reasonable attorney's and expert witness fees and all other costs and expenses incurred by them in the litigation.

8.3.6 It shall be recognized by the Contractor that he may reasonably anticipate that as the job progresses, the Lead Contractor will be making changes in and updating the Construction Schedule pursuant to Paragraph 3.10. Therefore, no claim for an increase in the Contract Sum for either acceleration or delay will be allowed for extensions of time pursuant to this paragraph or for other changes in the Construction Schedules which may be experienced.

ARTICLE 9, PAYMENTS AND COMPLETION

Paragraph 9.3 **APPLICATIONS FOR PAYMENT**, delete sub-paragraph 9.3.1 in its entirety and replace with the following:

9.3.1 At least fifteen (15) days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment for Work completed in accordance with the Contract Documents. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers and reflecting retainage.

9.3.1.1 The Owner shall retain ten percent (10%) of all amounts due the Contractor until the Work is fifty percent (50%) completed. When the Work is fifty percent (50%) completed, one-half of the amount retained by the Owner may be returned to the Contractor, provided the Contractor provides written consent of surety to such reduction in retainage to Owner along with its Application for Payment, provided the Architect approved the application and reduction of retainage, and further provided that the Contractor is making satisfactory progress and there is no specific cause for greater withholding.

9.3.1.2 The Owner shall retain five percent (5%) of all amounts due the Contractor after the Work is fifty percent (50%) completed. The retained five percent (5%) will be paid with the final Payment or as otherwise provided hereafter. In the event a dispute arises between the Owner and the Contractor, which dispute is based upon increased costs claimed by the Contractor occasioned by damages or other actions of another contractor, additional retainage in the sum of one and one half times the amount of any possible liability may be withheld until such time as a final resolution is agreed to by all parties directly or indirectly involved, unless the contractor causing the additional claim furnishes a bond satisfactory to the Owner to indemnify the Owner against the claim.

9.3.1.3 The full Contract retainage may be reinstated if the manner of completion of the Work and its progress do not remain satisfactory to the Owner, Architect or if Surety withholds its consent or for other good and sufficient reasons.

9.3.1.4 "When a Surety is involved, submit their consent in triplicate on AIA form G707A "Consent of Surety to Reduction in or Partial Release of Retainage."

Paragraph 9.3 **APPLICATIONS FOR PAYMENT**, delete paragraph 9.3.2 and replace with the following:

9.3.2 Stored Materials:

9.3.2.1 Materials Stored On Site. Materials properly stored at the construction site may be included in the Contractor's application for payment, subject to the following conditions: (1) All materials shall be stored in strict compliance with the manufacturer's recommendations in secure, dry enclosures; (2) Contractor shall provide property insurance covering materials stored at the construction site to the extent that Owner's property insurance does not provide coverage; (3) Contractor shall provide an accurate inventory of all materials included for payment with each application for payment. Contractor shall maintain the inventory until the materials are installed or otherwise incorporated into the work; and (4) Payment for materials stored on the construction site shall be limited to the actual, invoiced cost to the Contractor, F.O.B. the construction site. Contractor shall warrant that all suppliers are promptly paid in full for all materials included for payment and that materials are not encumbered by any lien, claim or

mortgage that would prevent the Owner from taking full possession of the materials. Contractor shall produce satisfactory evidence of same to Owner.

9.3.2.2 Materials Stored Off Site. Materials stored off the construction site shall not be included for payment in the Contractor's application for payment unless prior approval of the Owner has been obtained. Payment for materials stored off the construction site shall be subject to the conditions in subparagraph 33.3.1. and the following additional conditions: (1) Contractor shall provide property insurance for the full cost of the materials stored off the construction site; (2) Contractor shall provide a bill of sale for the materials granting clear title to the materials to the Owner; (3) Contractor shall pay all storage costs, shall be responsible for any damage or deterioration of the materials while in storage or in transit to the construction site and shall pay the cost of inspection of the materials in storage by the Owner. Contractor shall be responsible for and shall pay all costs of transportation of the materials to the construction site. (4) Contractor shall provide a bond for stored materials if required by the Owner.

Paragraph 9.3 **APPLICATIONS FOR PAYMENT**, add new paragraph 9.3.4 as follows:

9.3.4 No separate payment will be made for submittal preparation.

Paragraph 9.4 **CERTIFICATES FOR PAYMENT**, add following subparagraph 9.4.3:

9.4.3 Provided the Contractor's Applications for Payment is received by the Architect not later than the last day of the month, the Owner shall make payment to the Contractor not later than the 29th day of the following month. If an Application for Payment is received by the Architect after the application date fixed above, payment shall be made by the Owner not later than 21 days after the next payment period."

Paragraph 9.5 **DECISION TO WITHHOLD CERTIFICATION**, add the following subparagraphs, 9.5.1.8 and 9.5.1.9:

9.5.1.8 Failure to comply with government statutes, regulations and laws or

9.5.1.9 Failure to comply with any of the project schedule or scheduling requirements of the contract documents.

Paragraph 9.6 **PROGRESS PAYMENTS**, delete subparagraph 9.6.3 in its entirety and replace with the following:

9.6.3 Contractor and each subcontractor shall comply with the payment provisions of Section 3933 of the Pennsylvania Commonwealth Procurement Act, 62 Pa.C.S. § 3933.

Paragraph 9.6 **PROGRESS PAYMENTS**, subparagraph 9.6.5, delete the reference to subparagraph "9.6.3".

Paragraph 9.7 **FAILURE OF PAYMENT**, add new subparagraph 9.7.2 as follows:

9.7.2 The Contractor shall not stop work or terminate the Contract if the Architect should refuse to issue any certificate because the Application for Payment does not conform with requirements of Paragraph 9.3, 9.4, 9.5 and 9.6 of the General and/or Supplementary Conditions.

Paragraph 9.8 **SUBSTANTIAL COMPLETION**, add the following Subparagraph 9.8.1.1:

9.8.1.1 The Work shall be Substantially Complete when all systems, including but not limited to electrical, HVAC, plumbing, etc., are fully operational and the Work will pass inspection to secure a Certificate of Occupancy from the State and local authorities.

Paragraph 9.8 **SUBSTANTIAL COMPLETION**, add the following clause 9.8.3.1 to Subparagraph 9.8.3:

9.8.3.1 Except with the consent of the Owner, the Architect will perform no more than two (2) inspections to determine whether the Work or a designated portion thereof has attained Substantial Completion in accordance with the Contract Documents. The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect for any additional inspections.

Paragraph 9.8 **SUBSTANTIAL COMPLETION**, add following subparagraphs 9.8.6, 9.8.7, 9.8.8 and 9.8.9:

9.8.6 A Certificate for Payment shall be submitted after the date of Substantial Completion in the amount of one hundred percent (100%) of the Contract amount, less an amount that is required to complete or correct the work, multiplied by 1.5. The amount withheld will be based on the list of work to be completed or corrected and shall be certified by the Architect."

9.8.7 When a surety is involved, neither payment nor retainage shall become due until the Contractor submits to the Architect in triplicate the following:"

(1) AIA form G707A "Consent of Surety to Reduction in or Partial Release of Retainage."

9.8.8 In no case shall the time established for the completion and correction of items on the list extend beyond sixty (60) days after certification of substantial completion, except for delay beyond the Contractor's control. The Contractor shall pay for all architectural and consultant services incurred thereafter due to the failure of Contractor to complete and/or correct the work on the list or to submit documentation and items required for final completion and final payment.

9.8.9 Upon Substantial Completion of the Work or designated portion thereof, application by the Contractor and certification by the Architect, the Owner, shall within forty-five (45) days thereof, make payment to Contractor in the full Contract Sum less one and a half (1-1/2) times such amount that is required to complete and/or correct any then remaining items, which amount shall be certified by the Architect.

Paragraph 9.9 **PARTIAL OCCUPANCY OR USE**, add new paragraph 9.9.2 as follows:

9.9.2 The Contractor shall not withhold Partial Occupancy or Use from the Owner due to failure by the Contractor to complete the work in accordance with the Contract Documents in the time stipulated in the Agreement and approved Change Orders for extension of time.

Paragraph 9.10 **FINAL COMPLETION AND FINAL PAYMENT**, add the following subparagraph 9.10.1.1 to paragraph 9.10.1:

9.10.1.1 Except with the consent of the Owner, the Architect will perform no more than two (2) inspections to determine whether the Work or a designated portion thereof has attained Final Completion in accordance with the Contract Documents. The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect for any additional inspections.

Paragraph 9.10 **FINAL COMPLETION AND FINAL PAYMENT**, add the following subparagraphs 9.10.2.1 to paragraph 9.10.2:

9.10.2.1 Compliance with paragraph 9.10.2 shall be submitted in triplicate as follows:

- (1) AIA form G706 "Contractor's Affidavit of Payment of Debts and Claims".
- (2) Standard Accord Certificate of Insurance Form 25-S (7/90), if required.
- (3) AIA form G715 "Supplemental Attachment" for the Acord Certificate of Insurance Form. (if required).
- (4) Letter from Contractor on Letterhead requesting release of retainage.
- (5) AIA form G707 "Consent of Surety to Final Payment" (only when Surety is involved).
- (6) AIA form G706A "Contractor's Affidavit of Release of Liens".
- (7) Final "as built" prints of record drawings marked by the Contractor with record information as set forth in the Contract Documents, and
- (8) A final Contractor's sworn statement from the Contractor duly executed and acknowledged, showing all Subcontractors to be fully paid and similar final sworn statements from Subcontractors and, where appropriate, from Sub-subcontractors.

Paragraph 9.10 **FINAL COMPLETION AND FINAL PAYMENT**, Subparagraph 9.10.4, add the following item 9.10.4.4:

9.10.4.4 Matters arising following such payment, which were not within the reasonable contemplation of Owner when payment was made.

Add the following Paragraph 9.11 **LIQUIDATED DAMAGES** to Article 9 as follows:

9.11 LIQUIDATED DAMAGES:

9.11.1 Actual damages for delay in the time of completion are impossible of determination, thus, said sum is measure only of liquidated damages the Owner will sustain for each delay. Accordingly, the Contractor and the Contractor's Surety shall be liable for, and shall pay to the Owner as fixed, agreed and liquidated damages, the sum indicated for each calendar day which the actual time of completion included as part of the contract documents and Form of Agreement. All areas are scheduled to be substantially completed on or before the date as indicated on the contract documents and of the Form of Agreement. The Contractor and the Contractor's Surety shall also be liable for failure to correct "Punch List" items within the time limit indicated.

9.11.2 The actual time of completion shall be the date upon which the work is substantially complete in accordance with provisions of the specifications.

9.11.3 The Owner shall have the right to deduct the total amount of any fixed, agreed and liquidated damages for which the Contractor may be liable from any moneys otherwise due to the Contractor under the contract, including any retained percentage which may be under the control of the Owner.

9.11.4 The surety upon the contract bonds furnished by the Contractor shall be liable for any fixed, agreed and liquidated damages for which the Contractor may be liable under this section to the extent that the Contractor shall not make settlement thereof with the Owner.

9.11.5 Liquidated damages for failure to meet substantial completion for each phase or identified milestone shall be calculated at the following rates for each calendar day (Sundays and holidays included) of delay until the work is substantially complete.

General Construction Contract	Two Thousand, Fire Hundred Dollars (\$2,500) per day
Mechanical Construction Contract	One Thousand (\$1,000) per day
Electrical Construction Contract	Seven Hundred and Fifty Dollars (\$750) per day
Plumbing Construction Contract	Seven Hundred and Fifty Dollars (\$750) per day
Any other Construction Contract	Five Hundred Dollars (\$500) per day

9.11.6 Liquidated damaged for failure to correct "Punch List" items shall be calculated at the following rates for each calendar day of delay beyond thirty (30) calendar days after certification of substantial completion until work for corrections is complete.

Five Hundred Dollars (\$500) per day for all contracts.

ARTICLE 10, PROTECTION OF PERSONS AND PROPERTY

PARAGRAPH 10.1, **SAFETY PRECAUTIONS AND PROGRAMS**, add the following to subparagraphs 10.1.2, 10.1.3 and 10.1.4:

10.1.2 Contractor shall notify the Environmental Protection Agency prior to renovation operations in which more than 260 lineal feet or 160 square feet of regulated asbestos-containing material is stripped or removed from facility components, and prior to all demolition operation regardless of the amount of asbestos in the facility-including zero.

10.1.3 In lieu of any existing products known to contain hazardous materials (asbestos, lead paint etc) and are scheduled to be removed, should any Contractor encounter asbestos, lead paint, hazardous materials or suspect the presence of such in a material, he shall immediately stop work and notify the Owner who shall then take action for its removal."

10.1.4 The Owner, Owner's Representative and the Architect make no representation regarding the possible presence of hazardous materials, including but not limited to asbestos, polychlorinated biphenyl (PCB) and lead based paints within the area of construction. It is the Contractor's sole responsibility to implement any and all necessary test procedures and precautions against such possibility and to strictly

follow and enforce all municipal, state and federal regulations regarding any hazardous material and safe work place practices and hazardous material disposal."

PARAGRAPH 10.2, **SAFETY OF PERSONS AND PROPERTY**, Add new sub-paragraph 10.2.2.1 as follows:

10.2.2.1 If the Contractor fails to give such notices, or fails to comply with such laws, ordinances, rules, regulations and lawful orders, it shall be liable for and shall indemnify and hold harmless the Owner and the Architect, and their respective employees, officers and agents, against any resulting fines, penalties, judgments or damages, including reasonable attorney's fees, imposed on or incurred by the parties indemnified hereunder."

PARAGRAPH 10.2, **SAFETY OF PERSONS AND PROPERTY**, Add new sub-paragraph 10.2.4.1 as follows:

10.2.4.1 When use or storage of explosives or other hazardous materials, substances or equipment or unusual methods are necessary, the Contractor shall give the Owner reasonable advance notice."

PARAGRAPH 10.2 **SAFETY OF PERSONS AND PROPERTY**, Add new paragraphs 10.2.8, 10.2.9, 10.2.10 and 10.2.11 as follows:

10.2.8 The Contractor shall provide and maintain in good operating condition suitable and adequate fire protection equipment and services, and shall comply with all reasonable recommendations of the fire insurance company carrying insurance on the Work or by the local fire chief or fire marshal. The area within the site limits shall be kept orderly and clean and all combustible rubbish shall be promptly removed from the site.

10.2.9 The Contractor shall at all times protect excavations, trenches, buildings and materials from rainwater, ground water, back up or leakage of sewers, drainage or other piping, and from water of any other origin and shall remove promptly any accumulation of water. Contractor shall provide and operate all pumps, piping and other equipment necessary to this end.

10.2.10 The Contractor shall remove snow or ice which may result in damage or delay.

10.2.11 The Contractor shall take all precautions necessary to prevent loss or damage caused by vandalism, theft, burglary, pilferage, or unexplained disappearance of property of the Owner, whether forming part of the Work, located within those areas of the Project to which the Contractor has access. The Contractor shall have full responsibility for the security of such property of the Owner located in such areas and shall reimburse the Owner for any such loss, damage or injury, except such as may be directly caused by agents or employees of the Owner.

Paragraph 10.3 **HAZARDOUS MATERIALS**, delete subparagraphs 10.3.1, 10.3.2 and 10.3.3 and replace with the following:

10.3.1 In the event the Contractor encounters on the site material reasonably believed to be asbestos or polychlorinated biphenyl (PCB) or other hazardous or toxic substance which have not been rendered harmless, the Contractor shall immediately stop the Work in the area affected and report the condition to

the Owner and Architect in writing. The Work in the affected areas shall not thereafter be resumed except by written agreement of the Owner and Contractor if in fact the material is asbestos or polychlorinated biphenyl (PCB) or other hazardous or toxic substance and has not been rendered harmless. The Work in the affected areas shall be resumed in the absence of asbestos or polychlorinated biphenyl (PCB) or other hazardous or toxic substance, or when it has been rendered harmless and removed, by written agreement of the Owner and Contractor, or in accordance with the final determination by the Architect, or in accordance with an appropriate court order, as the case may be.

10.3.2 The Contractor shall not be required pursuant to Article 7 to perform without consent any work relating to asbestos or polychlorinated biphenyl (PCB) or other hazardous or toxic substance.

10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorney's fees, arising out of or resulting from performance of the Work in the affected area if in fact the material is asbestos or polychlorinated biphenyl (PCB) or other hazardous or toxic substance 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) including loss of use resulting there from, but only to the extent caused in whole or in part by negligent acts or omissions of the Owner. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this paragraph 10.3.3.

Paragraph 10.3 **HAZARDOUS MATERIALS**, add the following to paragraphs 10.3.4:

"The Owner, Owner's Representative and the Architect make no representation regarding the possible presence of hazardous materials, including but not limited to asbestos, polychlorinated biphenyl (PCB) and lead based paints within the area of construction,. It is the Contractor's sole responsibility to implement any and all necessary test procedures and precautions against such a possibility and to strictly follow and enforce all municipal, state and federal regulations regarding any hazardous material and safe work place practices and hazardous material disposal."

Add new paragraph 10.4 **DEMOLITION AND RENOVATION OPERATIONS** and new subparagraph as follows:

10.4 DEMOLITION AND RENOVATION OPERATIONS

10.4.1 To protect persons and property, the Contractor shall take all necessary precautions during demolition and renovation operations to locate and discontinue or otherwise identify and protect existing utilities; to maintain the structural integrity of the building, and to protect the interior contents of the building during construction operations."

10.4.2 All demolition work shall be done by qualified tradesmen from each respective trade, especially in the areas of structural, mechanical and electrical demolition."

ARTICLE 11, INSURANCE AND BONDS

Paragraph 11.1 **CONTRACTORS LIABILITY INSURANCE**. Delete subparagraphs 11.1.1 in its entirety and replace with the following:

11.1.1 The Contractor shall purchase from and maintain in an insurance company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, and maintaining an A.M. Best rating of A- or greater, such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- a. claims under any applicable workers' compensation law, including but not limited to the Pennsylvania Workman's Compensation Act and the Pennsylvania Occupational Disease Act of 1939, and any disability benefit or similar employee benefit act that is applicable to the Work to be performed;
- b. claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- c. claims for damages because of bodily injury, sickness or disease, including death resulting from any of these at any time, of any person other than the Contractor's employees;
- d. claims for damages because of personal injury other than bodily injury that is sustained by (1) a person as a result of an offense directly or indirectly related to employment of such person by the Contractor, or (2) by another person;
- e. claims for damages, other than to the Work itself, because of physical injury or destruction of tangible property, including loss of use resulting therefrom and loss of use of tangible property that is not physically injured;
- f. claims for damages because of bodily injury, sickness or disease, including death resulting from any of these at any time, or property damage arising out of the ownership, maintenance or use of a motor vehicle, including owned, non-owned, and hired vehicles; and
- g. claims arising from the Contractor's obligations under paragraph 3.18.

Paragraph 11.1 **CONTRACTORS LIABILITY INSURANCE**. Paragraph 11.1.2, add the following subparagraph 11.1.2.1:

11.1.2.1 Liability Limits: The insurance required by Subparagraph 11.1.1. shall be written for not less than the following limits unless the limit provided herein is less than that required by applicable law, in which case the greater limit shall apply. All limits under the General Liability coverage shall apply on a per project basis:

Workers' Compensation:

- (a) State: statutory requirement
- (b) Federal: statutory

Comprehensive Contractors' General Liability:

- (a) Bodily Injury and Property Damage:
\$1,000,000 per occurrence
\$2,000,000 aggregate
- (b) Products Completed Operations:
\$2,000,000 aggregate
- (a) Contractually Assumed Liability for Bodily Injury and Property Damage:
\$1,000,000 per occurrence
\$2,000,000 aggregate

Liability coverage shall be written under an occurrence policy with all limits applying on a project basis.

- (d) Personal Injury:
\$2,000,000 aggregate

Automobile Liability:

- (a) Bodily Injury:
\$1,000,000 per person
\$1,000,000 per accident
- (b) Property Damage:
\$1,000,000 per accident

Pollution Liability: Shall be provided in addition to all other insurances for sudden and accidental exposures only and shall be required for the HVAC Contractor, Plumbing Contractor and General Contractors only - \$1,000,000 per occurrence. The intent of this policy is to cover accidental discharges from construction activities. This coverage shall not be required for projects specifically related to roof work only. All asphalt paving project require this coverage.

Excess Liability: The Contractor shall purchase an Excess Liability policy of insurance providing no less than a one million dollar (\$1,000,000) limit of liability. This policy is to exclude pollution liability.

Additional Insured: The owner, the Architect and their consultants shall be named as additional insureds under the policies of insurance required under the above Subparagraphs.

Coverage: All coverage required shall be on an "occurrence" rather than a "claims made" basis."

Paragraph 11.2, **OWNER'S LIABILITY INSURANCE**, add the following to the end of paragraph 11.2.1:

“The Owner shall provide Builder’s Risk Insurance.”

Delete Paragraph 11.3 **PROJECT MANAGEMENT PROTECTIVE LIABILITY INSURANCE**, in its entirety.

Paragraph 11.4 **PROPERTY INSURANCE**. Delete Paragraph 11.4.1 in its entirety (including the subparagraphs) and replace with the following:

11.4.1 The Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in Pennsylvania, and maintaining an A.M. Best rating of A- or greater, property insurance in the amount of the initial Contract Sum as well as subsequent modifications thereto for the entire Work at the site on a replacement cost basis with the minimum deductibles required by the insurer or insurers underwriting such coverage. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in the Contract Documents or until no person or entity other than the Owner has an insurable interest in the property required by this Paragraph 11.3 to be covered, whichever is earlier. This insurance shall include interests of the Owner, the Architect, the Contractor, Subcontractors and Sub-subcontractors in the Work.

11.4.1.1 Property insurance required by Subparagraph 11.3.1. shall be written on an "all-risk" policy form and shall insure against the perils of fire and extended coverage and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, falsework, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's services and expenses required as a result of such insured loss. Coverage for other perils shall not be required unless otherwise provided in the Contract Documents.

11.4.1.2 The Contractor shall be responsible for paying all costs not covered, including any deductibles, required by the insurer or insurers underwriting the insurance required by Paragraph 11.4.1 and incurred for individual items and operating systems prior to the issuance of Substantial Completion (in whole or in part) or due to the Contractor's negligence or breach of contract.

11.4.1.3 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.

11.4.1.4 The insurance required by this Paragraph 11.4 is not intended to cover machinery, tools or equipment owned or rented by the Contractor which are utilized in the performance of the Work but not incorporated into the permanent improvements. The Contractor shall, at the Contractor's own expense, provide insurance coverage for owned or rented machinery, tools or equipment.

Paragraph 11.4 **PROPERTY INSURANCE**. Delete subparagraph 11.4.1.3, 11.4.1.4 and 11.4.1.5.

Paragraph 11.4 **PROPERTY INSURANCE**, Paragraph 11.4.2, add the Architect to the list of interested parties.

Paragraph 11.5 **PERFORMANCE BOND AND PAYMENT BOND**, delete Subparagraph 11.5.1 and substitute the following:

11.5.1 The Contractor shall provide bonds in accordance with the provisions of the Section 756 and 757 of the Public School Code of 1949 as amended and the Public Works Contracts' Bond Law of 1967, 8 P.S. Section 191, et seq., and in so doing shall provide:

(a) A performance bond at one hundred percent (100%) of the contract amount, conditioned upon the faithful performance of the contractor in accordance with the plans, specifications and conditions of the contract. Such bond shall be solely for the protection of the Owner or assignee. The surety's liability under the bond shall be the same as the contractor's liability under the conditions of the contract.

(b) A payment bond at one hundred percent (100%) of the contract amount. Such bond shall be solely for the protection of claimants supplying labor or materials to the Contractor or to any of their Subcontractors in the prosecution of the Work provided for in the Contract Documents and shall be conditioned for the prompt payment of all such material furnished or labor supplied or performed in the prosecution of the Work. "Labor or Materials" shall include public utility services and reasonable rentals of equipment, but only for periods when the equipment rented is actually used at the site.

(c) Each of such bonds shall be executed by one or more surety companies legally authorized to do business in the Commonwealth of Pennsylvania and acceptable to the Owner. The bond shall be payable to the Owner or assignee.

(d) All insurance and bonds required pursuant to Article 11 and the Contract Documents must be issued by insurance providers that are licensed and authorized to conduct business in the Commonwealth of Pennsylvania. The insurance carriers of whom the Contractor has purchased insurance coverage are to have an "A-" or better rating plus a financial rating of VI or better with the A.M. Best's Company (Key Rating Guide – Latest Edition).

Paragraph 11.5 **PERFORMANCE BOND AND PAYMENT BOND**, paragraph 11.5.2 and replace with the following:

11.5.2 Upon request of any person or entity, and the payment of a reasonable cost for copying, Owner shall provide a copy of the Payment Bond of Contractor

Add Paragraph 11.6 **INSURANCE AND BOND CARRIERS**, as follows:

11.6 All insurance and bonds required pursuant to Article 11 and the Contract Documents must be issued by insurance providers that are licensed and authorized to conduct business in the Commonwealth of Pennsylvania. The insurance carriers of whom the Contractor has purchased insurance coverage are to have an "A-" or better rating plus a financial rating of VI or better with the A.M. Best's Company (Key Rating Guide - Latest Edition).

ARTICLE 12, UNCOVERING AND CORRECTION OF WORK

Paragraph 12.1 **UNCOVERING WORK**. In subparagraph 12.1.1, add: "and without added cost to the Owner."

Subparagraph 12.2.2 **AFTER SUBSTANTIAL COMPLETION**. In subparagraph 12.2.2.1, delete the last two sentences of this subparagraph and add the following:

“Nothing contained in this paragraph shall decrease the liability of Contractor and/or Surety as set forth in the Performance Bond.”

Subparagraph 12.2.2 **AFTER SUBSTANTIAL COMPLETION**, Add the following Clause 12.2.2.4:

12.2.2.4 Upon request by the Owner and prior to the expiration of one year from the date of Substantial Completion, the Architect will conduct and the Contractor shall attend a meeting with the Owner to review the facility operations and performance.

ARTICLE 13, MISCELLANEOUS PROVISIONS

Delete Paragraph 13.2 **SUCCESSORS AND ASSIGNS** in its entirety.

Paragraph 13.3 **WRITTEN NOTICE**, In subparagraph 13.3.1, add the following:

“**Notice by mail shall be effective three (3) days after deposit in the mail.**”

Paragraph 13.5 **TESTS AND INSPECTIONS**. This Paragraph governs testing and inspection required by the Drawings and Specifications to be performed by Contractor. Owner will arrange for an independent testing and inspection firm to perform those tests and inspections not required to be performed by Contractor or its Subcontractor. Contractor shall perform all testing and inspections required by product manufactures to validate warranties.

Paragraph 13.5 **TESTS AND INSPECTIONS**, add the following sentence at the end of subparagraph 13.5.5:

“**The Contractor shall notify the Architect at least two working days in advance when tests or inspection are required per specifications.**”

Paragraph 13.6 **INTEREST**. Subparagraph 13.6.1, add the following:

“**The final payment due Contractor under the Contract Documents shall bear interest from the date payment is due at the rate of 4% per annum, simple interest.**”

Paragraph 13.7 **COMMENCEMENT OF STATUTORY LIMITATION PERIOD** delete in its entirety.

Add new Paragraph 13.8 **CODE COMPLIANCE** as follows:

13.8 CODE COMPLIANCE

13.8.1 Fire Rated Assemblies: All penetrations and openings whether indicated or not through fire-rated walls, floor/ceiling or roof/ceiling assemblies which are indicated on the drawings, shall be provided and installed to maintain the fire-rated integrity of the design with dampers, tenting over lights, etc.

These penetrations and openings include, but shall not be limited to, louvers, lights, mechanical and electrical penetrations, etc."

13.8.2 Fire Rated Partitions: All fire partitions shall extend from the top of the floor assembly below to the underside of the floor/roof slab or deck above, to the fire resistance rated floor/ceiling or roof/ceiling assembly above, and shall be securely attached thereto.

Add new Paragraph 13.9 **SWORN STATEMENT/RELEASE OF LIENS** as follows:

13.9 SWORN STATEMENT/RELEASE OF LIENS

13.9.1 Contractor agrees that the Project is not subject to the Mechanics Lien Law. To assure Owner that Contractor has made full payment of all sums due under the subcontract, Contractor shall submit with its final Application for Payment a Sworn Statement/Release of Liens stating that the signer (the Contractor or Subcontractor) has paid all Subcontractors, suppliers and laborers who have performed Work on the project in the full amount due.

Add new Paragraph 13.10 **DISCRIMINATION PROHIBITED** as follows:

13.10 DISCRIMINATION PROHIBITED

13.10.1 According to Section 62 Pa.C.S.A. § 3701, the Contractor agrees that:

13.10.1.1 In the hiring of employees for the performance of work under this Contract, or any sub-contract, no contractor, subcontractor, or any person acting on behalf of the contractor or subcontractor shall, by reason of gender, race, creed or color, discriminate against any citizen of this Commonwealth who is qualified and available to perform the work to which the employment relates.

13.10.1.2 No contractor, sub-contractor, or any person acting on their behalf, shall in any manner discriminate against or intimidate any employee hired for the performance of work under this Contract on account of gender, race, creed or color.

13.10.1.3 The Contract may be canceled or terminated by the government agency, and all money due or to become due under the Contract may be forfeited, for violation of the terms or conditions of that portion of the Contract.

Add new Paragraph 13.11 **HUMAN RELATIONS ACT** as follows:

13.11 HUMAN RELATIONS ACT

13.11.1 The provisions of the Pennsylvania Human Relations Act, Act 222 of October 27, 1955 (P.L. 744) (43 P.S. § 951, et seq.) of the Commonwealth of Pennsylvania prohibit discrimination because of race, color, religious creed, ancestry, age, sex, national origin, handicap or disability by employers, employment agencies, labor organizations, contractors and others. The Contractor shall agree to comply with the provisions of this Act as amended, which are hereby made part of this specification.

Your attention is directed to the language of the Commonwealth's non-discrimination clause in 16 PA. Code 49.101.

Add new Paragraph 13.12 **COMPETENT WORKMEN** as follows:

13.12 COMPETENT WORKMEN

13.12 No workmen shall be regarded as competent first class, within the meaning of this Act, except those who are duly skilled in their respective branches of labor, and who shall be paid not less than such rates of wages and for such hours' work as shall be established and current rates of wages paid for such hours by employers of organized labor in doing of similar work in the owner where work is being done.

Add new Paragraph 13.13 **STANDARD OF QUALITY**

13.13 STANDARD OF QUALITY

13.13.1 The various materials and products specified in the specifications by name or description are given to establish a minimum acceptable standard of quality and of cost for bid purposes. It is not the intent to limit Bidder, the Bid or the evaluation of the Bid to any one material or product specified, but rather to describe the minimum standard. When proprietary names are used, they shall be followed by the words "or alternatives of the quality necessary to meet the specifications". A Bid containing an alternative, which does not meet the specifications, may be declared non-responsive. A Bid containing an alternative may be accepted, but if an award is made to that Bidder, the Bidder will be required to replace any alternatives, which do not meet the specifications. (Refer to Article 9 of the Instructions to Bidder)When proprietary names are used, and there does not follow a "listing" of acceptable approved manufacturers and/or products, then the proprietary named item must be included in the bid proposal without substitution. When proprietary names are used, and there follows a "listing" of acceptable "approved" manufacturers and/or products, then the contractor may base the bid on either the proprietary product or any from the "listing". Bidders may request approval prior to bid opening of non-listed items in accordance with the specifications. When proprietary names are used, and there are alternates for the specified item on the bid form, then the contractor shall base his bid on the proprietary product or any from the "listing" of approved manufacturers and/or products. The bidder must furnish the specified or listed item or accepted alternate, regardless of whether or not they were included in his bid. The bidder shall be required to coordinate and pay for any conditions which are required to accommodate the listed or alternate item, including the reimbursement of other affected prime contractors.

Add new Paragraph 13.14 **PROVISION FOR THE USE OF STEEL AND STEEL PRODUCTS MADE IN THE U.S.** as follows:

13.14 PROVISION FOR THE USE OF STEEL AND STEEL PRODUCTS MADE IN THE U.S.

13.14.1 In accordance with Act 3 of the 1978 General Assembly of the Commonwealth of Pennsylvania, if any steel or steel products are to be used or supplied in the performance of the Contract, only those produced in the United States as defined therein shall be used or supplied in the performance of the Contract or any subcontracts hereunder.

13.14.2 In accordance with Act 161 of 1982, cast iron products shall also be included and produced in the United States. Act 141 of 1984 further defines “steel products” to include machinery and equipment. The act also provides clarifications and penalties.

Add new Paragraph 13.15 **CASH ALLOWANCES**

13.15 NO CASH ALLOWANCES

13.15.1 NO CASH ALLOWANCES: Cash allowances are not to be included in the bid specifications.

Add new Paragraph 13.16 **RIGHT TO KNOW ACT** as follows:

13.16 RIGHT TO KNOW ACT

13.16.1 Contractor shall comply with all terms and conditions of the Pennsylvania Right to Know Act, Act No. 159 of 1984, 35 P.S. § 7301 et seq., and its implementing regulations.

Add new Paragraph 13.17 **IDENTIFICATION**

13.17 IDENTIFICATION

13.17.1 The Owner reserves the right to require all construction employees to be visually identified by the use of badges. In the event this security measure is implemented, the Owner will issue badges to all authorized employees in conjunction with the prime Contractors and record their issuance with names, addresses, etc. Termination of employment of the construction employees will require the respective badges to be returned to the Owner for record keeping purposes. All employees must wear the badge on the job site. Employees without badges will not be permitted on the premises.

Add new Paragraph 13.18 **ACT 34 CRIMINAL BACKGROUND CHECKS** as follows:

13.18 ACT 34 CRIMINAL BACKGROUND CHECKS

13.18.1 Pursuant to § 1-111 of the Pennsylvania Public School Code of 1949, prior to commencing work under the Contract, Contractor shall submit for any employee or independent contractor who would be working on the owner site, pursuant to work contemplated in the Contract, a report of criminal history record information from the Pennsylvania State Police or a statement from the Pennsylvania State Police that the State Police central repository contains no such information relating to that person. Contractor shall produce the original document for each prospective employee or independent contractor of such Contractor prior to employment. Where the applicant is not a resident of the Commonwealth of Pennsylvania, Contractor shall submit a report of federal criminal history record information pursuant to the Federal Bureau of Investigation appropriation of Title 2 of Public Law 92-544. Contractor shall not allow any prospective employee or independent contractor on the job site prior to providing Owner with the above-referenced criminal history record information for said prospective employee or independent contractor

Add new Paragraph 13.19 **CHILD PROTECTIVE SERVICES BACKGROUND CHECKS** as follows:

13.19 CHILD PROTECTIVE SERVICES BACKGROUND CHECKS

13.19.1 Prior to commencing the work under the Contract, Contractor shall submit for any employee or independent contractor who would be working on the school owner site, pursuant to any work contemplated in the Contract, an official clearance statement obtained from the Pennsylvania Department of Public Welfare, pursuant to Act 151 of December 16, 1994 (P.L. 1292), Subchapter C.2. of the Child Protective Services Act. Contractor shall not allow any prospective employee or independent contractor on the job site prior to providing Owner with the above-referenced clearance statement for prospective employees or independent contractors.

Add new Paragraph 13.20 **NO BLASTING IS PERMITTED** as follows:

13.20 NO BLASTING IS PERMITTED

13.20.1 The Contractor shall perform all storage, handling and use of explosives for the purpose of excavation in strict accordance with Title 25, Chapter 211, of the Pennsylvania Code, as well as any applicable local regulations. Strict control of blasting must be maintained to prevent fly rock, and blasting mats must be used where conditions dictate their use. When blasting within 25 feet of utility lines, such blasting must be performed according to Section 211.52 of Title 25 of the Pennsylvania Code.

Add new Paragraph 13.21 **SITE EXCAVATION** as follows:

13.21 SITE EXCAVATION

13.21.1 Contractor agrees that, not less than three (3) working days prior to beginning excavation or demolition work as defined in Act 172 of December 12, 1986 of the Commonwealth of Pennsylvania, amending Act 287 of December 10, 1974, he shall request the information required by Section 5 of the Act and shall inform each operator employed at the site of the Work of the information received with respect to location of underground installations. Contractor shall agree to report immediately to the user of the underground installations and to the Owner and Architect, any break in its lines, or dent, gouge, groove or other damage to such lines, their coating or cathodic protection, made or discovered in the course of the excavation or demolition work. Contractor shall comply with all other provisions of the Act, as amended.

Add new Paragraph 13.22 **WAIVER OF CONSEQUENTIAL DAMAGES** as follows:

13.22 WAIVER OF CONSEQUENTIAL DAMAGES

13.22.1 Contractor waives claims against Owner for consequential damages arising out of or relating to this Contract, including, but not limited to, 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.

Add new Paragraph 13.23 **ALL APPLICABLE LAWS, STATUTES, REGULATIONS AND STANDARDS** as follows:

13.23 ALL APPLICABLE LAWS, STATUTES, REGULATIONS AND STANDARDS

13.23.1 Contract shall comply with all applicable federal, state, local and industry statutes, regulations, ordinances, codes and standards. The failure to specifically reference or include said matters in the Contract Documents does not excuse Contractor from compliance with same.

Add new Paragraph 13.24 **THE IMPLEMENTING REGULATIONS OF THE PENNSYLVANIA PREVAILING WAGE ACT** (ACT 422 of 1961, P.L. 987. AMENDED), as follows:

13.24 THE IMPLEMENTING REGULATIONS OF THE PENNSYLVANIA PREVAILING WAGE ACT (ACT 422 of 1961, P.L. 987. AMENDED)

13.24.1 Pennsylvania Prevailing Wage Rates: This regulation and the general Pennsylvania prevailing minimum wage rates as determined by the Secretary of Labor and Industry, which shall be paid for each craft or classification of all workers needed to perform the Contract during the anticipated term therefore in the locality in which public work is performed, are made part of this specification. (Reference Section 00830)

ARTICLE 14, TERMINATION OR SUSPENSION OF THE CONTRACT

Delete Paragraph 14.1 **TERMINATION BY THE CONTRACTOR** in its entirety.

Paragraph 14.2 **TERMINATION BY THE OWNER FOR CAUSE**, delete subparagraph 14.2.1 in its entirety and replace with the following:

14.2.1 The Owner may terminate the Contract if the contractor

- a. **institutes proceedings or consent to proceedings requesting relief or arrangement under the Federal Bankruptcy Code or any similar or applicable federal or state law; or if a petition under any federal or state bankruptcy or insolvency law is filed against the Contractor and such petition is not dismissed within sixty (60) days from the date of said filing; or if the Contractor admits in writing its inability to pay its debts generally as they become due, or if it makes a general assignment for the benefit of its creditors, or if a receiver, liquidator, trustee or assignee is appointed on account of its bankruptcy or insolvency; or if a receiver of all or any substantial portion of the Contractor's properties is appointed.**
- b. **abandons the Work; or if it fails, except in cases for which extension of time is provided, to prosecute promptly and diligently the Work or to supply enough properly skilled workmen or proper materials for the Work;**
- c. **submits an Application for Payment, sworn statement, waiver of lien, affidavit or document of any nature whatsoever which is intentionally falsified;**

- d. fails to make prompt payment to Subcontractors or for materials or labor or otherwise breaches their obligations under any subcontract with a Subcontractor; or if a mechanic's or materialman's lien or notice of lien is filed against any party of the Work or the site of the Project and not promptly bonded or insured over by the Contractor in a manner satisfactory to the Owner;
- e. disregards any laws, statutes, ordinances, rules, regulations or orders of any governmental body or public or quasi-public authority having jurisdiction of the Work or the site of the Project;
- f. otherwise violates any provision of the Contract Documents; then the Owner, upon the occurrence of the events described in clauses .1 through .6 above, without prejudice to any right or remedy available to the Owner under the Contract Documents or at law or in equity may, after giving the Contractor and the surety under the Performance Bond and under the Labor and Material Payment Bond, if any, seven (7) days written notice, terminate the employment of the Contractor and, in accordance with the Uniform Commercial Code, may enforce a Security Agreement by taking possession of and using all or any part of Contractor's materials, equipment, supplies and other property of every kind used by the Contractor in the performance of the Work in the completion of the Work. If requested by Owner, the Contractor shall remove any part or all of its equipment, machinery and supplies from the site of the Project within seven (7) days from the date of such request, and in the event of the Contractor's failure to do so, the Owner shall have the right to remove or store such equipment, machinery and supplies at the Contractor's expense. In case of such termination, the Contractor shall not be entitled to receive any further payment for Work performed by the contract through the date of termination. The Owner's right to terminate the Owner-Contractor Agreement pursuant to this Subparagraph 14.2.1 shall be in addition to and not in limitation of any rights or remedies existing hereunder or pursuant hereto or at law or in equity.

Paragraph 14.2 **TERMINATION BY THE OWNER FOR CAUSE**, in subparagraph 14.2.2, delete the last sentence.

Paragraph 14.2 **TERMINATION BY THE OWNER FOR CAUSE**, delete subparagraph 14.2.4 and replace with the following:

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

Paragraph 14.2 **TERMINATION BY THE OWNER FOR CAUSE**, add new subparagraph 14.2.5 as follows:

14.2.5 In the event the Owner terminates the contract for cause, and such cause is determined to be valid and justified, in addition and without prejudice to all other rights, remedies and relief which the Owner may obtain under this Agreement and pursuant to the law, the Owner shall be entitled to payment by Contractor of all reasonable professional fees, including attorney's fees, architectural fees, engineering fees, and consulting fees (together with reasonable expenses and disbursements incurred in connection therewith) which the Owner may incur in connection with any legal proceedings or action (including professional fees rendered in anticipation of such proceedings or action). This provision shall create no right to the Contractor or to any other person or entity for payment of such costs or expenses.

Paragraph 14.4 **TERMINATION BY THE OWNER FOR CONVENIENCE**, delete 14.4.3 and replace with the following:

14.4.3 In case of such termination for the Owner's convenience, the contractor shall be entitled to receive payment from the Owner only for Work completed, using the schedule of values provided by Contractor and used in making periodic payments.

ARTICLE 15, CLAIMS AND DISPUTES

Paragraph 15.1.5 **CLAIMS FOR ADDITIONAL TIME**, delete 15.1.5.2 and replace with the following:

15.1.5.2 No Claim for an Extension of Time will be granted for adverse weather. Contract completion date are as indicated in the contract documents.

END OF DOCUMENT

SECTION 00.7343 – PENNSYLVANIA PREVAILING WAGE RATE REQUIREMENTS**PART 1 - GENERAL**

1.1 Prevailing Wage Rates: Prevailing Wage Rates and notes are attached to the end of this section.

1.2 Prevailing Wage Rates

1. The general provisions of the Pennsylvania Prevailing Wage Act, approved August 15, 1961, as amended are applicable to this project.
2. The general prevailing minimum wage rates including contributions for employee benefits as shall have been determined by the Secretary of Labor and Industry (hereinafter "Secretary"), which must be paid to the workmen, employed in the performance of the Contract.
3. The Contractor shall pay no less than the wage rates as determined in the decision of the Secretary and shall comply with the conditions of the Pennsylvania Prevailing Wage Act approved August 15, 1961 (Act No. 442), as amended August 9, 1963 (Act No. 342), and the Regulations issued pursuant thereto, to assure the full and proper payment of said rates.
4. These Contract provisions shall apply to all work performed on the Contract by the Contractor and to all work performed on the contract by all subcontractors.
5. The Contractor shall insert in each of his subcontracts all of the stipulations contained in these required provisions.
6. No workmen may be employed on the Work except in accordance with the classifications set forth in the decision of the Secretary. In the event that additional or different classifications are necessary the procedure set forth in the Regulations shall be followed.
7. All workmen employed or working on the Work shall be paid unconditionally, regardless of whether any contractual relationship exists or the contractual relationship which may be alleged to exist between any contractor, subcontractor and workmen, not less than once a week without deductions or rebate, on any account, either directly or indirectly, except authorized deductions, the full amount due at the time of payment, computed at the rates applicable to the time worked in the appropriate classification. Nothing in this Contract, the Act or the Regulations shall prohibit the payment of more than the general prevailing minimum wage rates as determined by the Secretary to the workmen on the Work.
8. The Contractor and each subcontractor shall post for the entire period of construction the wage determination decisions of the Secretary, including the effective date of any changes thereof, in a prominent and easily accessible place or places at the site of the work and at such place or places used by them to pay workmen their wages. The posted notice of wage rates must contain the following information:
 - a. Name of project.
 - b. Name of public body of which it is constructed.

- c. The crafts and classifications of workmen listed in the Secretary's general prevailing minimum wage rate determination for the particular project.
 - d. The general prevailing minimum wage rates determined for each craft and classification and the effective date of any changes.
 - e. A statement advising workmen that if they have been paid less than the general prevailing minimum wage rate for their job classification or that the Contractor and/or subcontractor are not complying with the Act or the Regulations in any manner whatsoever, they may file a protest with the Secretary within three (3) months of the date of the occurrence, objecting to the payment to the Contractor to the extent of the amount or amounts due or to become due to them as wages for work performed on the Project. Any workmen paid less than the rate specified in the Contract shall have a civil right of action for the difference between the wage paid and wages stipulated in the Contract, which right of action must be exercised within six (6) months from the occurrence of the event creating such right.
9. The Contractor and all subcontractors, shall keep an accurate record showing the name, craft and/or classification, number of hours worked per day, and the actual hourly rate of wage paid (including employee benefits) to each workman employed by him in connection with the Work and such record must include any deductions from each workman. The record shall be preserved for two (2) years from the date of payment and shall open at all reasonable hours to the inspection of the Owner and to the Secretary or his duly authorized representative.
 10. Apprentices shall be limited to such numbers as shall be in accordance with a bona fide apprenticeship program registered with and approved by the Pennsylvania Apprenticeship and Training Council and only apprentices whose training and employment are in full compliance with the provisions of the Apprenticeship and Training Act approved July 14, 1961 (Act No. 304) and the Rules and Regulation issued pursuant thereto shall be employed on the Work. Any workmen using the tools of a craft that does not qualify as an apprentice within the provisions of this submission shall be paid the rate predetermined for journeyman in that particular craft and/or classification.
 11. Wages shall be paid without any deductions except authorized deductions. Employers not party to a contract requiring contributions for employee benefits which the Secretary has determined to be included in the general prevailing minimum wage rate shall pay the monetary equivalent thereof directly to the workman.
 12. Payment of compensation to workmen for work performed on public work on a lump sum basis, or apiece work system, or a price certain for the completion of a certain amount of work, or the production of a certain result shall be deemed a violation of the Act and the Regulations, regardless of the average hourly earnings resulting therefrom.
 13. Each Contractor and each subcontractor shall file a statement each week and a final statement at the conclusion of the Work on the Contract with Owner, under oath, and in form satisfactory to the Secretary, certifying that all workmen have been paid wages in strict conformity with the

provisions of the Contract as prescribed by the Regulations, or if any wages remain unpaid, to the amount of wages due and owing to each workman respectively.

14. The provision of the Act and the Regulations are incorporated by reference in the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 00.7343

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project Name:	Renovations to Palmerton Weight Room
Awarding Agency:	Palmerton Area School District
Contract Award Date:	3/13/2024
Serial Number:	24-01233
Project Classification:	Building
Determination Date:	2/8/2024
Assigned Field Office:	Scranton
Field Office Phone Number:	(570)963-4577
Toll Free Phone Number:	(877)214-3962
Project County:	Carbon County

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 24-01233 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Asbestos & Insulation Workers	7/1/2022		\$35.83	\$20.67	\$56.50
Asbestos & Insulation Workers	7/1/2023		\$37.08	\$21.92	\$59.00
Asbestos & Insulation Workers	7/1/2024		\$37.08	\$24.92	\$62.00
Asbestos & Insulation Workers	7/1/2025		\$37.08	\$28.17	\$65.25
Boilermakers	1/1/2023		\$51.27	\$35.30	\$86.57
Boilermakers	1/1/2024		\$52.10	\$35.72	\$87.82
Bricklayers, Stone Masons, Pointers, Caulkers, Cleaners	4/30/2023		\$37.19	\$21.32	\$58.51
Bricklayers, Stone Masons, Pointers, Caulkers, Cleaners	4/28/2024		\$39.04	\$21.32	\$60.36
Bricklayers, Stone Masons, Pointers, Caulkers, Cleaners	5/4/2025		\$40.89	\$21.32	\$62.21
Carpenter - Chief of Party (Surveying & Layout)	5/1/2023		\$44.38	\$26.49	\$70.87
Carpenter - Chief of Party (Surveying & Layout)	5/1/2024		\$45.87	\$26.49	\$72.36
Carpenter - Instrument Person (Surveying & Layout)	5/1/2023		\$38.59	\$26.49	\$65.08
Carpenter - Instrument Person (Surveying & Layout)	5/1/2024		\$39.89	\$26.49	\$66.38
Carpenter - Rodman (Surveying & Layout)	5/1/2023		\$19.30	\$20.20	\$39.50
Carpenter - Rodman (Surveying & Layout)	5/1/2024		\$19.95	\$20.20	\$40.15
Carpenters	5/1/2023		\$38.54	\$26.49	\$65.03
Carpenters	5/1/2024		\$39.84	\$26.49	\$66.33
Cement Finishers & Plasterers	4/30/2023		\$29.66	\$22.42	\$52.08
Cement Finishers & Plasterers	4/28/2024		\$31.66	\$22.42	\$54.08
Cement Finishers & Plasterers	5/4/2025		\$33.66	\$22.42	\$56.08
Cement Finishers & Plasterers	5/3/2026		\$35.66	\$22.42	\$58.08
Cement Masons	5/1/2023		\$35.18	\$24.45	\$59.63
Dockbuilder, Pile Drivers	5/1/2023		\$50.48	\$37.99	\$88.47
Dockbuilder, Pile Drivers	5/1/2024		\$52.98	\$37.99	\$90.97
Dockbuilder, Pile Drivers	5/1/2025		\$55.23	\$37.99	\$93.22
Dockbuilder, Pile Drivers	5/1/2026		\$56.98	\$37.99	\$94.97
Dockbuilder/Pile Driver Diver	5/1/2023		\$58.41	\$41.74	\$100.15
Dockbuilder/Pile Driver Diver	5/1/2024		\$61.54	\$41.74	\$103.28
Dockbuilder/Pile Driver Diver	5/1/2025		\$64.35	\$41.74	\$106.09
Dockbuilder/Pile Driver Diver	5/1/2026		\$66.54	\$41.74	\$108.28
Dockbuilder/pile driver tender	5/1/2023		\$50.48	\$37.99	\$88.47
Dockbuilder/pile driver tender	5/1/2024		\$52.98	\$37.99	\$90.97
Dockbuilder/pile driver tender	5/1/2025		\$55.23	\$37.99	\$93.22
Dockbuilder/pile driver tender	5/1/2026		\$56.98	\$37.99	\$94.97
Drywall Finisher	5/1/2023		\$31.24	\$23.58	\$54.82
Electricians	6/1/2022		\$43.80	\$23.73	\$67.53
Electricians	6/1/2023		\$46.49	\$23.06	\$69.55
Elevator Constructor	1/1/2023		\$56.46	\$38.36	\$94.82
Elevator Constructor	1/1/2024		\$58.88	\$43.90	\$102.78
Floor Coverer	5/1/2023		\$39.65	\$27.61	\$67.26
Floor Coverer	5/1/2024		\$41.41	\$27.61	\$69.02
Glazier	5/1/2023		\$37.71	\$23.68	\$61.39

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 24-01233 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2021		\$34.01	\$31.13	\$65.14
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2023		\$36.26	\$31.38	\$67.64
Laborers (Class 01 - See notes)	5/1/2023		\$30.59	\$18.99	\$49.58
Laborers (Class 02 - See notes)	5/1/2023		\$31.62	\$18.99	\$50.61
Laborers (Class 03 - See notes)	5/1/2022		\$30.54	\$18.58	\$49.12
Laborers (Class 03 - See notes)	5/1/2023		\$31.24	\$19.08	\$50.32
Laborers (Class 04 - See notes)	5/1/2022		\$32.04	\$18.58	\$50.62
Laborers (Class 04 - See notes)	5/1/2023		\$32.74	\$19.08	\$51.82
Laborers (Class 05 - See notes)	5/1/2023		\$32.59	\$18.99	\$51.58
Laborers (Class 06 - See notes)	5/1/2022		\$31.89	\$18.49	\$50.38
Marble Mason	5/1/2023		\$33.42	\$20.94	\$54.36
Marble Mason	5/1/2024		\$35.37	\$20.94	\$56.31
Marble Mason	5/1/2025		\$37.32	\$20.94	\$58.26
Millwright	5/1/2023		\$48.41	\$33.95	\$82.36
Millwright	5/1/2024		\$51.30	\$33.95	\$85.25
Millwright	5/1/2025		\$53.87	\$33.95	\$87.82
Millwright	5/1/2026		\$56.51	\$33.95	\$90.46
Operators (Building, Class 01 - See Notes)	5/1/2023		\$42.57	\$29.24	\$71.81
Operators (Building, Class 01A - See Notes)	5/1/2023		\$44.82	\$29.90	\$74.72
Operators (Building, Class 02 - See Notes)	5/1/2023		\$42.29	\$29.15	\$71.44
Operators (Building, Class 02A - See Notes)	5/1/2023		\$44.54	\$29.82	\$74.36
Operators (Building, Class 03 - See Notes)	5/1/2023		\$39.57	\$28.34	\$67.91
Operators (Building, Class 04 - See Notes)	5/1/2023		\$38.42	\$28.02	\$66.44
Operators (Building, Class 05 - See Notes)	5/1/2023		\$37.97	\$27.89	\$65.86
Operators (Building, Class 06 - See Notes)	5/1/2023		\$37.10	\$27.62	\$64.72
Operators (Building, Class 07A- See Notes)	5/1/2023		\$51.63	\$33.34	\$84.97
Operators (Building, Class 07B- See Notes)	5/1/2023		\$51.28	\$33.24	\$84.52
Painters Class 1 (see notes)	5/1/2023		\$29.98	\$23.28	\$53.26
Painters Class 2 (see notes)	5/1/2023		\$33.58	\$23.58	\$57.16
Painters Class 3 (see notes)	5/1/2023		\$40.18	\$23.58	\$63.76
Piledrivers	5/1/2021		\$43.73	\$37.99	\$81.72
Plasterers	5/1/2023		\$35.93	\$23.96	\$59.89
plumber	5/1/2023		\$52.48	\$34.56	\$87.04
Plumbers and Steamfitters	12/1/2021		\$46.24	\$22.07	\$68.31
Plumbers and Steamfitters	12/1/2023		\$49.39	\$23.67	\$73.06
Roofers (Composition)	5/1/2023		\$42.63	\$34.62	\$77.25
Roofers (Shingle)	5/1/2020		\$29.50	\$21.25	\$50.75
Roofers (Shingle)	5/1/2023		\$32.85	\$22.10	\$54.95
Roofers (Slate & Tile)	5/1/2020		\$32.50	\$21.25	\$53.75
Roofers (Slate & Tile)	5/1/2023		\$35.85	\$22.10	\$57.95
Sheet Metal Workers	5/1/2023		\$35.04	\$29.82	\$64.86
Sign Makers and Hangars	7/15/2022		\$30.54	\$24.35	\$54.89
Sign Makers and Hangars	7/15/2023		\$31.76	\$24.63	\$56.39

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 24-01233 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Sprinklerfitters	4/1/2023		\$44.33	\$28.04	\$72.37
Steamfitters	5/1/2023		\$57.07	\$41.99	\$99.06
Terrazzo Finisher	5/1/2023		\$35.79	\$19.25	\$55.04
Terrazzo Finisher	5/1/2024		\$37.16	\$19.26	\$56.42
Terrazzo Grinder	5/1/2023		\$36.54	\$19.25	\$55.79
Terrazzo Grinder	5/1/2024		\$37.92	\$19.26	\$57.18
Terrazzo Mechanics	5/1/2023		\$36.51	\$21.00	\$57.51
Terrazzo Mechanics	5/1/2024		\$37.94	\$21.01	\$58.95
Tile & Marble Finisher	5/1/2023		\$32.15	\$16.59	\$48.74
Tile & Marble Finisher	5/1/2024		\$34.10	\$16.59	\$50.69
Tile & Marble Finisher	5/1/2025		\$36.05	\$16.59	\$52.64
Tile Setter	5/1/2023		\$33.42	\$20.94	\$54.36
Tile Setter	5/1/2024		\$35.37	\$20.94	\$56.31
Tile Setter	5/1/2025		\$37.32	\$20.94	\$58.26
Truckdriver class 1(see notes)	5/1/2021		\$37.72	\$0.00	\$37.72
Truckdriver class 2 (see notes)	5/1/2021		\$37.79	\$0.00	\$37.79
Truckdriver class 3 (see notes)	5/1/2021		\$38.28	\$0.00	\$38.28
Window Film / Tint Installer	6/1/2019		\$24.52	\$12.08	\$36.60

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 24-01233 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Carpenter - Chief of Party (Surveying & Layout)	5/1/2021		\$41.42	\$15.49	\$56.91
Carpenter - Instrument Person (Surveying & Layout)	5/1/2021		\$36.02	\$15.49	\$51.51
Carpenter - Rodman I (Survey & Layout)	5/1/2021		\$28.82	\$12.39	\$41.21
Carpenter	5/1/2023		\$35.32	\$19.09	\$54.41
Carpenter	5/1/2024		\$36.12	\$19.79	\$55.91
Carpenter	5/1/2025		\$36.87	\$20.49	\$57.36
Carpenter	5/1/2026		\$37.63	\$21.18	\$58.81
Carpenter Welder	5/1/2023		\$36.07	\$19.09	\$55.16
Carpenter Welder	5/1/2024		\$36.87	\$19.79	\$56.66
Carpenter Welder	5/1/2025		\$37.62	\$20.49	\$58.11
Carpenter Welder	5/1/2026		\$38.38	\$21.18	\$59.56
Carpenters - Piledriver/Welder	1/1/2023		\$36.07	\$19.09	\$55.16
Carpenters - Piledriver/Welder	1/1/2024		\$36.87	\$19.79	\$56.66
Carpenters - Piledriver/Welder	1/1/2025		\$37.62	\$20.49	\$58.11
Carpenters - Piledriver/Welder	1/1/2026		\$38.38	\$21.18	\$59.56
Dockbuilder, Pile Drivers	5/1/2023		\$50.48	\$37.99	\$88.47
Dockbuilder, Pile Drivers	5/1/2024		\$52.98	\$37.99	\$90.97
Dockbuilder, Pile Drivers	5/1/2025		\$55.23	\$37.99	\$93.22
Dockbuilder, Pile Drivers	5/1/2026		\$56.98	\$37.99	\$94.97
Dockbuilder/Pile Driver Diver	5/1/2023		\$58.41	\$41.74	\$100.15
Dockbuilder/Pile Driver Diver	5/1/2024		\$61.54	\$41.74	\$103.28
Dockbuilder/Pile Driver Diver	5/1/2025		\$64.35	\$41.74	\$106.09
Dockbuilder/Pile Driver Diver	5/1/2026		\$66.54	\$41.74	\$108.28
Dockbuilder/pile driver tender	5/1/2023		\$50.48	\$37.99	\$88.47
Dockbuilder/pile driver tender	5/1/2024		\$52.98	\$37.99	\$90.97
Dockbuilder/pile driver tender	5/1/2025		\$55.23	\$37.99	\$93.22
Dockbuilder/pile driver tender	5/1/2026		\$56.98	\$37.99	\$94.97
Electric Lineman	8/29/2022		\$62.66	\$28.08	\$90.74
Electric Lineman	9/4/2023		\$64.68	\$29.01	\$93.69
Electric Lineman	1/1/2024		\$64.46	\$29.23	\$93.69
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2021		\$34.01	\$31.13	\$65.14
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2023		\$36.26	\$31.38	\$67.64
Laborers (Class 01 - See notes)	5/1/2023		\$24.81	\$18.99	\$43.80
Laborers (Class 01 - See notes)	5/1/2024		\$25.61	\$19.49	\$45.10
Laborers (Class 02 - See notes)	5/1/2023		\$31.43	\$18.99	\$50.42
Laborers (Class 02 - See notes)	5/1/2024		\$32.23	\$19.49	\$51.72
Laborers (Class 03 - See notes)	5/1/2023		\$28.42	\$18.99	\$47.41
Laborers (Class 03 - See notes)	5/1/2024		\$29.22	\$19.49	\$48.71
Laborers (Class 04 - See notes)	5/1/2023		\$28.77	\$18.99	\$47.76
Laborers (Class 04 - See notes)	5/1/2024		\$29.57	\$19.49	\$49.06
Laborers (Class 05 - See notes)	5/1/2023		\$29.44	\$18.99	\$48.43
Laborers (Class 05 - See notes)	5/1/2024		\$30.24	\$19.49	\$49.73
Laborers (Class 06 - See notes)	5/1/2023		\$28.86	\$18.99	\$47.85

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 24-01233 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Laborers (Class 06 - See notes)	5/1/2024		\$29.66	\$19.49	\$49.15
Laborers (Class 07 - See notes)	5/1/2023		\$29.15	\$18.99	\$48.14
Laborers (Class 07 - See notes)	5/1/2024		\$29.95	\$19.49	\$49.44
Laborers (Class 08 - See notes)	5/1/2023		\$29.63	\$18.99	\$48.62
Laborers (Class 08 - See notes)	5/1/2024		\$30.43	\$19.49	\$49.92
Operators (Heavy, Class 01 - See Notes)	5/1/2023		\$41.14	\$28.82	\$69.96
Operators (Heavy, Class 01 - See Notes)	5/1/2024		\$42.30	\$29.66	\$71.96
Operators (Heavy, Class 01 - See Notes)	5/1/2025		\$43.46	\$30.50	\$73.96
Operators (Heavy, Class 01 - See Notes)	5/1/2026		\$44.61	\$31.35	\$75.96
Operators (Heavy, Class 01A - See Notes)	5/1/2023		\$43.39	\$29.48	\$72.87
Operators (Heavy, Class 01A - See Notes)	5/1/2024		\$44.55	\$30.32	\$74.87
Operators (Heavy, Class 01A - See Notes)	5/1/2025		\$45.71	\$31.16	\$76.87
Operators (Heavy, Class 01A - See Notes)	5/1/2026		\$46.86	\$32.01	\$78.87
Operators (Heavy, Class 02 - See Notes)	5/1/2023		\$40.86	\$28.73	\$69.59
Operators (Heavy, Class 02 - See Notes)	5/1/2024		\$42.02	\$29.57	\$71.59
Operators (Heavy, Class 02 - See Notes)	5/1/2025		\$43.18	\$30.41	\$73.59
Operators (Heavy, Class 02 - See Notes)	5/1/2026		\$44.34	\$31.25	\$75.59
Operators (Heavy, Class 02A - See Notes)	5/1/2023		\$43.11	\$29.40	\$72.51
Operators (Heavy, Class 02A - See Notes)	5/1/2024		\$44.27	\$30.24	\$74.51
Operators (Heavy, Class 02A - See Notes)	5/1/2025		\$45.43	\$31.08	\$76.51
Operators (Heavy, Class 02A - See Notes)	5/1/2026		\$46.59	\$31.92	\$78.51
Operators (Heavy, Class 03 - See Notes)	5/1/2023		\$37.95	\$27.86	\$65.81
Operators (Heavy, Class 03 - See Notes)	5/1/2024		\$39.11	\$28.70	\$67.81
Operators (Heavy, Class 03 - See Notes)	5/1/2025		\$40.26	\$29.55	\$69.81
Operators (Heavy, Class 03 - See Notes)	5/1/2026		\$41.43	\$30.38	\$71.81
Operators (Heavy, Class 04 - See Notes)	5/1/2023		\$36.80	\$27.54	\$64.34
Operators (Heavy, Class 04 - See Notes)	5/1/2024		\$37.96	\$28.38	\$66.34
Operators (Heavy, Class 04 - See Notes)	5/1/2025		\$39.12	\$29.22	\$68.34
Operators (Heavy, Class 04 - See Notes)	5/1/2026		\$40.28	\$30.06	\$70.34
Operators (Heavy, Class 05 - See Notes)	5/1/2023		\$36.35	\$27.41	\$63.76
Operators (Heavy, Class 05 - See Notes)	5/1/2024		\$37.51	\$28.25	\$65.76
Operators (Heavy, Class 05 - See Notes)	5/1/2025		\$38.67	\$29.09	\$67.76
Operators (Heavy, Class 05 - See Notes)	5/1/2026		\$39.83	\$29.93	\$69.76
Operators (Heavy, Class 06 - See Notes)	5/1/2023		\$35.48	\$27.14	\$62.62
Operators (Heavy, Class 06 - See Notes)	5/1/2024		\$36.64	\$27.98	\$64.62
Operators (Heavy, Class 06 - See Notes)	5/1/2025		\$37.80	\$28.82	\$66.62
Operators (Heavy, Class 06 - See Notes)	5/1/2026		\$38.96	\$29.66	\$68.62
Operators (Heavy, Class 07A - See Notes)	5/1/2023		\$49.93	\$32.83	\$82.76
Operators (Heavy, Class 07A - See Notes)	5/1/2024		\$51.39	\$33.77	\$85.16
Operators (Heavy, Class 07A - See Notes)	5/1/2025		\$52.85	\$34.71	\$87.56
Operators (Heavy, Class 07A - See Notes)	5/1/2026		\$54.32	\$35.64	\$89.96
Operators (Heavy, Class 07B - See Notes)	5/1/2023		\$49.58	\$32.73	\$82.31
Operators (Heavy, Class 07B - See Notes)	5/1/2024		\$51.04	\$33.67	\$84.71
Operators (Heavy, Class 07B - See Notes)	5/1/2025		\$52.51	\$34.60	\$87.11

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 24-01233 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Operators (Heavy, Class 07B - See Notes)	5/1/2026		\$53.97	\$35.54	\$89.51
Operators (Highway, Class 01 - See Notes)	5/1/2023		\$40.25	\$28.55	\$68.80
Operators (Highway, Class 01 - See Notes)	5/1/2024		\$41.41	\$29.39	\$70.80
Operators (Highway, Class 01 - See Notes)	5/1/2025		\$42.56	\$30.24	\$72.80
Operators (Highway, Class 01 - See Notes)	5/1/2026		\$43.72	\$31.08	\$74.80
Operators (Highway, Class 01a - See Notes)	5/1/2023		\$42.50	\$29.23	\$71.73
Operators (Highway, Class 01a - See Notes)	5/1/2024		\$43.66	\$30.07	\$73.73
Operators (Highway, Class 01a - See Notes)	5/1/2025		\$44.81	\$30.92	\$75.73
Operators (Highway, Class 01a - See Notes)	5/1/2026		\$45.97	\$31.76	\$77.73
Operators (Highway, Class 02 - See Notes)	5/1/2023		\$39.08	\$28.20	\$67.28
Operators (Highway, Class 02 - See Notes)	5/1/2024		\$40.24	\$29.04	\$69.28
Operators (Highway, Class 02 - See Notes)	5/1/2025		\$41.39	\$29.89	\$71.28
Operators (Highway, Class 02 - See Notes)	5/1/2026		\$42.55	\$30.73	\$73.28
Operators (Highway, Class 03 - See Notes)	5/1/2023		\$38.39	\$27.99	\$66.38
Operators (Highway, Class 03 - See Notes)	5/1/2024		\$39.55	\$28.83	\$68.38
Operators (Highway, Class 03 - See Notes)	5/1/2025		\$40.70	\$29.68	\$70.38
Operators (Highway, Class 03 - See Notes)	5/1/2026		\$41.87	\$30.51	\$72.38
Operators (Highway, Class 04 - See Notes)	5/1/2023		\$37.94	\$27.86	\$65.80
Operators (Highway, Class 04 - See Notes)	5/1/2024		\$39.10	\$28.70	\$67.80
Operators (Highway, Class 04 - See Notes)	5/1/2025		\$40.26	\$29.54	\$69.80
Operators (Highway, Class 04 - See Notes)	5/1/2026		\$41.41	\$30.39	\$71.80
Operators (Highway, Class 05 - See Notes)	5/1/2023		\$37.42	\$27.72	\$65.14
Operators (Highway, Class 05 - See Notes)	5/1/2024		\$38.58	\$28.56	\$67.14
Operators (Highway, Class 05 - See Notes)	5/1/2025		\$39.73	\$29.41	\$69.14
Operators (Highway, Class 05 - See Notes)	5/1/2026		\$40.89	\$30.25	\$71.14
Operators (Highway, Class 06 - See Notes)	5/1/2023		\$40.48	\$28.62	\$69.10
Operators (Highway, Class 06 - See Notes)	5/1/2024		\$41.64	\$29.46	\$71.10
Operators (Highway, Class 06 - See Notes)	5/1/2025		\$42.80	\$30.30	\$73.10
Operators (Highway, Class 06 - See Notes)	5/1/2026		\$43.95	\$31.15	\$75.10
Operators (Highway, Class 06/A - See Notes)	5/1/2023		\$42.73	\$29.28	\$72.01
Operators (Highway, Class 06/A - See Notes)	5/1/2024		\$43.89	\$30.12	\$74.01
Operators (Highway, Class 06/A - See Notes)	5/1/2025		\$45.05	\$30.96	\$76.01
Operators (Highway, Class 06/A - See Notes)	5/1/2026		\$46.21	\$31.80	\$78.01
Operators (Highway, Class 07/A - See Notes)	5/1/2023		\$48.86	\$32.51	\$81.37
Operators (Highway, Class 07/A - See Notes)	5/1/2024		\$50.32	\$33.45	\$83.77
Operators (Highway, Class 07/A - See Notes)	5/1/2025		\$51.79	\$34.38	\$86.17
Operators (Highway, Class 07/A - See Notes)	5/1/2026		\$53.25	\$35.32	\$88.57
Operators (Highway, Class 07/B - See Notes)	5/1/2023		\$47.44	\$32.10	\$79.54
Operators (Highway, Class 07/B - See Notes)	5/1/2024		\$48.91	\$33.03	\$81.94
Operators (Highway, Class 07/B - See Notes)	5/1/2025		\$50.37	\$33.97	\$84.34
Operators (Highway, Class 07/B - See Notes)	5/1/2026		\$51.84	\$34.90	\$86.74
Painters Class 2 (see notes)	5/1/2020		\$31.53	\$20.71	\$52.24
Painters Class 3 (see notes)	5/1/2020		\$37.63	\$20.71	\$58.34
Piledrivers	5/1/2023		\$35.32	\$19.09	\$54.41

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

Project: 24-01233 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Piledrivers	5/1/2024		\$36.12	\$19.79	\$55.91
Piledrivers	5/1/2025		\$36.87	\$20.49	\$57.36
Piledrivers	5/1/2026		\$37.63	\$21.18	\$58.81
Steamfitters (Heavy and Highway - Gas Distribution)	5/1/2022		\$48.43	\$40.28	\$88.71
Steamfitters (Heavy and Highway - Gas Distribution)	5/1/2023		\$50.53	\$41.68	\$92.21
Truckdriver class 1 (see notes)	5/1/2021		\$37.72	\$0.00	\$37.72
Truckdriver class 2 (see notes)	5/1/2021		\$37.79	\$0.00	\$37.79
Truckdriver class 3 (see notes)	5/1/2021		\$38.28	\$0.00	\$38.28

SECTION 00.8200 – SAFETY & HEALTH MANAGEMENT PLAN PROJECT REQUIREMENTS

The Safety and Health Management Plan requirements are the minimum parameters that contractors must comply with. Contractors are required to prepare their own Safety Plan and comply with all applicable regulations.

As used in this Safety and Health Management Plan (herein referred to as "Plan"), "Contractor" shall mean the controlling Contractor (who has a contractual agreement with the Owner), who shall comply with these minimum requirements. The Contractor shall also agree to require each of their Subcontractors and Sub-subcontractors to comply with the minimum requirements of this Plan.

It is the responsibility of the Contractor to maintain total control of Safety to ensure that employees and the general public will be provided with a hazard free environment during Construction and renovation activities. This Plan does not relieve the Contractor of their responsibilities regarding the safety of their employees and the preservation of property. The Contractor agrees that he and all his Subcontractors or Sub-subcontractors shall be fully responsible for project Safety and Health Management. The Owner, the Construction Manager and the Architect shall not be responsible for any Safety precautions and programs in connection with the work.

The Contractor and Subcontractors of all tiers are solely responsible for safety on the job site and with respect to the work and indemnify, hold harmless and waive all claims against the Owner, the Construction Manager, and/or the Architect based on, arising out of or in any way involving any actual or alleged non-compliance with the Safety and Health Management Plan.

The Federal Occupational Safety and Health Act as well as other federal, state, and local regulations promulgated in the Interest of Safety are required by law and this Plan.

The Safety Requirements of this Plan is a supplementary document to all Government rules and regulations. It does not negate, abrogate, alter or otherwise change any provisions of those rules and/or regulations, and is intended to supplement and enforce the individual program of each Contractor and the overall safety effort. It is understood that the ultimate responsibility for providing a safe workplace rests with each individual Contractor.

I hereby acknowledge that I have received, read and evaluated the Project Safety and Health Management Plan and I hereby certify that I will ensure that at a minimum its requirements and conditions are fulfilled.

Company Name

Contractor – Project Manager

Contractor – Field Supervisor

Date

Date

Project Safety and Health Management Plan

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1.0 INTRODUCTION

The Safety and Health Management Plan requirements are the minimum parameters that contractors must comply with. Contractors are required to prepare their own Safety Plan and comply with all applicable regulations. These requirements have not been prepared by the Architect.

This Safety and Health Management Plan (herein referred to as "Plan") is intended to establish uniform policies and procedures for all Contractors, with the goal of reducing the frequency and severity of accidents. This Plan applies to all Work performed on the Project.

1. Contractor shall implement, maintain and adhere to a written Contractor Safety Program as required by the Bid Documents. Contractor, upon request, shall submit the Contractor Safety Program to the Owner or its representatives prior to commencement of the Work. In the event that the Contractor Safety Program does not comply with the requirements of this Agreement or of the Plan incorporated into this Agreement, the Contractor Safety Program shall be redrafted to comply with this Agreement and with the Plan, whichever provides the highest level of Safety. (The Contractor may, however, incorporate this Plan into their Safety Program for this project by reference.) One or more copies of the written Contractor Safety Program must be maintained on-site for employee review. Before the Contractor or any Subcontractor commences Work, the Contractor or Subcontractor, as applicable, shall make available to employees a copy of the Contractor Safety Program and the Contractor or Subcontractor, as applicable, and shall certify that prior to any employee, or any employee of any Subcontractor, beginning Work on the Project, the employees have been oriented with regards to the written Contractor Safety Program and have been directed by the Contractor or Subcontractor or its representatives to comply with Program requirements.
2. The Contractor, all Subcontractors and Sub-subcontractors shall assume all costs related, but not limited to, Personal Protective Equipment, Drug and Alcohol-Free Workplace Substance Abuse Program, all training requirements, etc.
3. Compliance with the Plan is a requirement of the Contract. Failure to comply will be considered a breach of Contract, subject to the remedies provided in the Contract including, but not limited to, withholding of progress payments or termination for cause.
4. The Contractor, all Subcontractors and Sub-subcontractors shall immediately correct unsafe conditions.
5. If the Contractor, any Subcontractors or Sub-subcontractor refuses to correct an unsafe condition, the Owner and/or its representatives is authorized to stop that portion of the Work until the Work can continue in accordance with the requirements of this Plan. The cost to bring the Work activity into compliance shall be incurred by the Contractor, Subcontractors and/or Sub-subcontractors and at no time shall the costs be charged to the Owner.
6. Each Contractor, all Subcontractors and Sub-subcontractors shall be responsible for payment of all fines, damages or other costs resulting from failure to comply with the Plan requirements. The Contractor shall reimburse the Owner for any fines, damages or costs incurred (including the costs of attorneys' fees for defense and appeals) arising out of the Contractor's operations.

2.0 General Requirements

Each Contractor, Subcontractor and Sub-subcontractor shall: (a) be solely responsible for the health, safety and security of employees and others under its control and/or supervision; and (b) comply with the terms and conditions of the Project Safety and Health Management Plan (herein referred to as "Plan") attached hereto and incorporated herein by reference as if fully set forth herein. The Project Manager and Field Supervisor of each Contractor and Subcontractor must execute a copy of the Plan certifying that each will ensure that the requirements of the Plan will be fulfilled. Notwithstanding anything to the contrary that is contained herein or in the Project Safety and Health Management Plan, the Contractor and Subcontractors of all tiers are solely responsible for safety on the job site and with respect to the work and indemnify, hold harmless and waive all claims against the Owner, the Construction Manager, and/or the Architect based on, arising out of or in any way involving any actual or alleged non-compliance with the Safety and Health Management Plan.

1. Contractor shall conduct its business in a professional manner to prevent the occurrence of incidents that lead to injuries or illnesses and/or equipment and property damage. Safety, health and security requirements for the Work under this Contract shall be administered by the Contractor and all of its Subcontractors and Sub-subcontractors in accordance with the following:
 - a. The importance of Safety with respect to all Work shall be recognized and accident prevention shall be an integral part of all planning and operations by the Contractor and its Subcontractors;
 - b. Contractor, Subcontractors and Sub-subcontractors shall conduct Work in accordance with: (i) the Occupational Safety and Health Act of 1970 (OSHA) and all additions, amendments and revisions thereto; and (ii) the Plan;
 - c. Contractor, Subcontractors and Sub-subcontractors shall follow all applicable federal, state and local laws/regulations pertaining to pollution control, water supply, fire protection, sanitation facilities, waste disposal and other related items;
 - d. Contractor, Subcontractors and Sub-subcontractors shall cooperate fully with the Owner and its representatives and all other Contractors and Subcontractors in providing and managing safety, health and security programs with respect to the Work;
 - e. Housekeeping shall be observed at all times and waste, debris and garbage shall be removed daily and placed in appropriate waste containers. All materials, tools and equipment shall be stored in a safe and orderly fashion.
 - f. Should Owner or its representatives notify Contractor of any safety non-compliance resulting in an unsafe act or improper equipment operation that puts the life and/or safety of Job Site personnel or other persons at risk, the Owner or its representatives shall have the right to immediately stop such Work or acts. Contractor shall correct the hazard or condition within the time specified prior to resuming Work in the area. Nothing in this Contract shall be construed as creating any duty on the part of the Owner or the Construction Manager to inspect the Work for safety.

2. Safety Program

- a. Any Contractor shall provide a site Safety Representative knowledgeable in the areas of construction safety, health and fire prevention. The Safety Representatives shall have completed the OSHA 500 Construction and Outreach Training Program, or have equivalent experience or training, as a minimum. This individual shall have the authority to act as liaison with the Owner and/or its representatives, other Contractors and Subcontractors on all matters related to safety. This individual shall have full authority to ensure safe Work practices and to correct unsafe or hazardous conditions. All Subcontractors shall designate a member of supervision, who may have other duties, as its Safety Representative whose duty shall be the prevention of accidents. The Safety Representative shall have a current (within the last Two (2) Years) OSHA 10 Hour Construction Outreach Training Certificate.
- b. Contractor shall inform the Owner and/or its representatives of any federal or state inspections. Contractor shall provide Owner and/or its representatives with copies of all federal and state inspection reports, citations, penalties, abatement dates, and the like, with respect to the Work or any aspect of the Work under this Contract.
- c. The Contractor shall cooperate with the Owner and/or its representatives, who may periodically observe any aspect of the Work and/or the Project Work Site without prior notice.
- d. All lay down and storage areas shall be coordinated with the designated Project official prior to set-up of these areas. Contractor shall be responsible for the security of said area(s) and for all material, equipment and tools.
- e. Any media contact or responses to media inquiries shall be directed to the Project official designated by the Owner. Contractor and Subcontractor shall not discuss accidents, incidents or other related issues with the media.
- f. All employee vehicles shall be restricted to designated parking areas. All parking areas shall be coordinated with the designated Project official.

3. Employee and Visitor Dress Requirements

- a. All projects shall enforce a One Hundred Percent (100%) hard hat requirement for all construction areas. All supervisors, employees and visitors shall be required to wear hard hats while on the Project Site.
- b. Contractor shall ensure that all workers wear durable work shoes and under no condition shall employees wear shorts, tank tops, sleeveless shirts, clogs or footwear with large openings, street shoes, tennis shoes or sandals.
- c. All Contractors shall enforce the required no smoking policy for the entire project site at all times.

4. Failure to Comply with Safety Regulations

- a. Failure to comply with the Contract Safety Requirements shall be deemed to constitute non-compliance with the Contract and may result in remedial action as provided by the Contract.

- b. If Contractor refuses to correct unsafe or unhealthy conditions or acts, the Owner and/or its representatives may take one or more of the following actions:
- i. Instruct the Contractor, Subcontractor or Sub-subcontractor, who shall comply with said instructions, to cease the Work, or a portion thereof, until the condition is brought into compliance with Contract and Safety Requirements;
 - ii. Require Contractor, Subcontractor or Sub-subcontractor, who shall comply with said requirement, to replace or supplement its site Safety Representative and/or supervisory personnel, as appropriate;
 - iii. Stop payment for the Work being performed; and/or
 - iv. Correct the situation using another employee or Contractor and charge Contractor who shall pay for the expenses and costs incurred.
 - v. All costs associated with ensuring a safe and healthful Work environment, shall be borne by any non-compliant Contractor or Subcontractor, and costs will be charged to and/or assessed against the non-conforming Contractor or Subcontractor. Contractor, Subcontractor, and Sub-subcontractor shall be responsible for the payment of all fines and/or claims for damages levied against the Owner and/or its representatives for deficiencies relating to the conduct of the Contractor's Work.

3.0 Safety Policy Statement

Objective

The objective of this Plan is to reduce the frequency and severity of accidents on this Project. There are Three (3) sound reasons for this objective:

1. No endeavor is worthy if it should cause human suffering through disabling injury or loss of life.
2. A good safety record reflects the quality of management.
3. Poor accident experience increases cost, and results in a loss of profit.

Policy Statement

The safety of persons and property is of paramount importance to the Owner. This Plan will establish employee safety and health as an integral part of the overall success of this Project.

By Contract, the Contractor, all Subcontractors and Sub-subcontractors on the Project Site shall comply with the requirements of the Federal Occupational Safety and Health Act of 1970 (OSHA) and all additions and revisions thereto, as well as any other applicable federal, state and local requirements and this Plan.

The on-site supervisory personnel are responsible for the actions of those they supervise, for maintaining safe and healthy working conditions in their areas of responsibility, and for strictly enforcing all safety and health policies and regulations. All employees shall comply with these Rules and Regulations.

4.0 Responsibilities

The Contractor, all Subcontractors and Sub-subcontractors shall prevent accidents and are responsible for thorough safety and risk control training and instruction for their employees.

The prevention of accidents and protection of property shall receive management's top priority, support and participation.

General Overview

- Provide a safe environment where employees can perform high quality Work.
- Use Safety Planning as a tool to reduce injury to persons and damage to property.
- Provide inspections to locate and abate unsafe conditions and practices before they result in bodily injury or property loss.
- Protect the public and property adjacent to the Construction Site.
- Educate and Train employees through:
 - New Hire Safety Orientation
 - Weekly Safety meetings
 - Task-Specific Safety Training, (i.e., hazard communications (HAZCOM), fall protection, construction safety practices, trenching safety, confined space entry, etc.)
- Mandatory Personal Protective Equipment (PPE) Programs.
- Injury reporting and record keeping to maintain an up-to-date accident experience and trends analysis.
- Using accident investigation information to abate deficiencies and eliminate any additional losses.
- Return-To-Work (Modified Duty) Programs.
- Site-Wide One Hundred Per Cent (100%) Six (6) Foot Fall Protection Policy. **THERE IS A ZERO TOLERANCE POLICY ON FALL PROTECTION. ONE VIOLATION OF THE FALL PROTECTION POLICY WILL RESULT IN THE CONTRACTOR REMOVING THE VIOLATING EMPLOYEE FROM THE SITE FOR THE DURATION OF THE PROJECT. THE EMPLOYEE'S SUPERVISOR MAY BE REMOVED FROM THE SITE FOR FAILURE TO ENFORCE THE FALL PROTECTION POLICY.**
- Drug and Alcohol-Free Work Place Program.

Contractor's Project Manager

The Contractor's Project Manager shall be responsible for:

- Promoting Total Job Safety with all employees and visitors;
- Accepting full and complete responsibility for the implementation and execution of the Plan on-site;
- Monitoring Contractor adherence to Plan Requirements; and
- Assisting in accident investigations with the Program's Safety Representative;

Contractor's Project Foremen

The Contractor's Project Foreman shall be responsible for:

- Setting a good safety example for workers;
- Using Pre-Task Planning, instructing workers on Safe Work Practices and Methods to prevent injury, damage to property and loss of productive time;
- Supplying and enforcing the use of Personal Protective Equipment (PPE);
- Familiarizing workers with the Safety Requirements applicable to their Work;
- Holding weekly Tool-Box Safety Meetings with their Work crews;
- Conducting daily Safety Inspections of their Work areas;
- Assisting in accident investigations with the Program's Safety Representative; and
- Assuring that proper first-aid treatment is administered to injured employees.

Contractors, Subcontractors and Sub-subcontractors

All Contractors, Subcontractors and Sub-subcontractors shall have overall responsibility for accident prevention and implementation of this Plan for their personnel.

Each Contractor, Subcontractor and Sub-subcontractor shall designate a member of supervision, who may have other duties, as their Safety Representative in accordance with the Contract Documents. The Safety Representative shall be knowledgeable and responsible for all applicable Safety Standards and site policies. This individual shall have, at a minimum, completed the OSHA 10 Hour Construction Outreach training course within the last Two (2) Years.

The Safety Representative is responsible for performing Construction Safety Inspections and identifying and resolving any safety related concerns pertaining to their Work.

All employees shall be orientated to their company's Contractor Safety Program as well as to the Plan. Documentation of this training (which includes but is not limited to: Attendance roster, date of training and course content) shall be maintained on file.

Each Contractor shall be responsible for providing their Subcontractor's and Sub-subcontractor's Safety Representative with an emergency communication plan for use in emergency response and other safety related communications.

Although many existing hazards may be corrected through informal communications, all corrective actions must be documented.

Worker's Responsibilities

The Workers shall be responsible for:

- Working according to good safety practices as posted, instructed and discussed;
- Complying with the Plan and the Contractor's Safety Program;
- Using all required and provided safety devices;

- Reporting any unsafe situation or act to their supervisor and/or designated Safety Representative immediately;
- Maintaining a clean and safe Work area;
- Performing assigned duties in an alert manner, free of any impairment that may affect safety;
- Following the Site's Safety Program; and
- Reporting injuries immediately to their supervisor.

5.0 Safety Related Meetings & Training

Safety Meetings and Training shall be conducted by the Contractor, all Subcontractors and Sub-subcontractors. The following meetings and training shall be conducted, documented and maintained on file:

- Indoctrination (Orientation) Safety Training
 - All new employees and visitors to the Construction Project shall be properly trained and oriented with regards to the Safety Plan, hazard recognition, Site-Specific Safety Requirements, emergency procedures, first-aid/medical procedures, assigned Panel of Physicians, etc.
- “Tool Box” Safety Meetings
 - The Contractor, all Subcontractors and Sub-subcontractors shall conduct weekly Safety Training Meetings with all employees working on the Construction Project. This training shall be conducted by a supervisor or foremen.
 - The meetings shall cover any Hazardous Work Conditions, unsafe Work practices that have been identified, safe working practices, review of accidents and near-misses that have occurred on the Construction Project and safety rules and regulations.
 - This training shall be documented to include names of employees attending the training and an outline of all topics discussed.
- Weekly Progress Management Meetings
 - Safety shall have a portion of the agenda in all Progress Meetings for discussion of the previous week’s safety issues and to discuss the current week’s activities. Minutes from the Progress Meetings shall reflect safety items discussed and any proposed resolution to issues.
- Periodic Safety Management Meetings
 - Upon request by the Owner or its representatives, a Safety Management Meeting will be held periodically on the Construction Project to review on-going safety issues. The Contractor’s, all Subcontractor’s and Sub-subcontractor’s Safety Representatives, Project Managers and Project Safety Representatives shall attend these meetings.
 - If the Contractor, any Subcontractor or Sub-subcontractor has a lost-time injury, a representative of the respective company shall explain at the next Safety Meeting:

- Why the accident occurred?
 - What corrective measures have been taken to prevent similar injuries from occurring?
 - What the claim status of the injured employee is?
 - What, if any, alternative (modified duty) work has been provided?
- Pre-Shift Hazard Recognition Training
 - The Contractor, all Subcontractors and Sub-subcontractors shall hold Pre-Shift Hazard Recognition Training with each work crew working under the following conditions:
 - One Hundred Percent (100%) Fall Protection
 - Scaffold Erection and Dismantling
 - Crane and all Material Hoisting Operations
 - Excavation and Trenching Operations
 - Non-Routine Work Operations, i.e. Emergency Procedures, Industrial Hygiene, etc.
 - Confined Space Operations

6.0 Project Disciplinary / Corrective Procedures

General Statement. The Project Disciplinary/Corrective Procedures are intended to encourage compliance with the requirements of OSHA, other applicable federal, state and local requirement, and this Plan. Workers performing Work in an unsafe manner shall be subject to counseling, training, discipline, transfer or termination.

Responsibilities of Contractor and Subcontractors. Each Contractor and Subcontractor shall respond to each work injury and known unsafe act as follows:

1. **Investigation.** The Contractor or Subcontractor, as applicable, shall conduct a proper investigation to determine: (a) the nature of the unsafe act; (b) the reasons the unsafe act occurred; and (c) the identity of the individual(s) who engaged in or was responsible for the unsafe act. With respect to any individual employee or representative who was identified as having engaged in or being responsible for an unsafe act, the following information shall be among the information reviewed and considered:
 - a. The individual's past training and experience as is relevant to the unsafe act committed;
 - b. The individual's prior disciplinary record;
 - c. The individual's prior record with respect to: (i) engaging in or allowing unsafe acts, and (ii) following instructions and directions; and
 - d. The individual's degree of culpability.
2. **Prevention.** The Contractor or Subcontractor, as applicable, shall take action that is reasonably calculated to insure that:

- a. The unsafe act will not be repeated; and
 - b. That the individual(s) responsible for engaging in or allowing the unsafe act to occur will not engage in or allow unsafe acts to occur in the future.
3. **Disciplinary/Corrective Options.** The options available to Contractors and Subcontractors when taking action that is reasonably calculated to ensure that the unsafe acts will not be repeated and that responsible individuals will not engage in or allow unsafe acts to occur include:
- a. Additional training for workers in general and/or to the responsible individual in particular;
 - b. Job performance counseling of the responsible individual(s);
 - c. Verbal Warning (which shall be documented);
 - d. Written Warning;
 - e. Suspension from Work without pay;
 - f. Transfer off the Project; and
 - g. Discharge from employment.
4. **Guiding Principles.** Contractors and Subcontractors shall decide which option(s) to exercise in accordance with the following guiding principles:
- a. Nothing in this Plan shall be construed to require any Contractor or Subcontractor to violate the terms or conditions of any applicable law, collective bargaining agreement or employment contract;
 - b. If any individual engages in a repeated unsafe act(s), a repeated violation(s) of the Contract, a repeated violation(s) of OSHA requirements, or a repeated violation(s) of this Plan, the actions taken by the Contractor or Subcontractor, as applicable, shall be progressive in severity and consequence;
 - c. Nothing in this Plan requires progressive discipline as a precondition to any suspension, transfer or discharge from employment and the Contractor or Subcontractor may impose a suspension, transfer or discharge for safety violations if it so chooses without having engaged in prior progressive discipline;
 - d. It is expected that individuals who engage in or who are responsible for any unmitigated life threatening conduct or for willful disregard to the safety requirements of this Plan shall be subject to immediate discharge or permanent transfer off the Project.
5. **Follow Up.** Contractors and Subcontractors shall take follow up action to ensure that the actions taken are effective. If it is observed that the actions originally taken have not been effective to prevent a repeat of the particular unsafe act or to prevent the particular individual(s) from engaging in that or other unsafe acts, the Contractor or Subcontractor, as applicable, shall take more aggressive disciplinary and corrective action.
6. **Documentation.**

- a. Each Contractor and Subcontractor shall fully document the following:
 - i. Known unsafe acts;
 - ii. The investigation undertaken in accordance with these procedures;
 - iii. The disciplinary and/or corrective action taken;
 - iv. The rationale for choosing the particular action taken;
 - v. The follow up action that is planned;
 - vi. The follow up action that is taken; and
 - vii. The results of the follow up action.
- b. The documentation shall be maintained in an organized manner by each Contractor or Subcontractor as applicable and in accordance with the Record-Keeping requirements of this Plan. Records of discipline, job counseling and training shall be placed in the personnel file of the employee. Copies of the documentation shall be provided to the Owner and/or its representatives.

7.0 Record-Keeping and Files

The Contractor, all Subcontractors and Sub-subcontractors shall maintain a master or central file for safety and health related documentation on the Job Site. Files shall be maintained in such a manner that distinguishes each Contractor and their Subcontractors and Sub-subcontractors.

The Owner and/or its representatives shall have the right to review all documentation at any time upon request. The Contractor shall give full cooperation during these reviews.

The following documentation shall be in the Safety Files:

- The Contractor Safety Plan.
- Hazard Communication Program, including current Material Safety Data Sheets (MSDS).
- Site Emergency Plans.
- All required safety & health permits.
- Weekly Tool Box/Tailgate Safety Meeting reports – including meeting topic(s) and employee attendance/sign-up sheets.
- Specific job hazard worker training.
- Job Site Safety Inspection reports – including documentation of corrective measures for closure.
- Equipment inspection reports.
- Crane inspection reports – daily and monthly (annual certification reports required prior to equipment operation).
- Employee orientation training records.
- Accident investigation reports, including near misses.

- Job Hazard Analysis.
- Competent person qualifications.
- Written Safety Violations.

8.0 Job Site Inspections

Inspections

Daily Safety and Health Inspections shall be continually conducted by the Contractor, all Subcontractors and Sub-subcontractors for each of their respective Work areas on the Job Site. Documentation of all identified and corrected deficiencies shall be maintained on file.

Corrective Measures

Corrective Measures to abate all deficiencies shall be completed immediately if life-threatening/serious conditions exist or no later than the end of the working shift for non-life threatening/serious conditions. All Work shall be stopped until imminent danger hazards have been abated. Documentation of these corrective measures shall be provided to the Program's Safety Representative.

If a deficiency can not be abated within the same shift, a letter shall be provided to the Owner or its representatives outlining the reason(s) why and the step(s) taken as an interim measure to control the potential hazard.

Non-Abatement

If Contractor, Subcontractor or Sub-subcontractor fails to make corrections to identified deficiencies in a timely manner, the Owner or its representatives will:

- Notify the Contractor in writing to take prompt corrective action to eliminate Construction Safety and Health concerns. Written notification will describe specific contract or code violations;
- Resolve outstanding Construction safety issues and maintain documentation of corrective actions;
- Report in writing to the Contractor, the name(s) of the individual(s) and their supervisor(s) who are observed to violate Construction Safety Requirements, with copies to the Project File. If necessary, the Owner or its representatives may require the Contractor to remove these individual(s) and/or their supervisor(s) from the Job Site.

Stoppage of the Work

The Owner and/or its representatives shall be authorized to order, at the Contractor's expense, a stoppage of the Work until unsafe conditions are abated.

9.0 Drug and Alcohol Free Workplace Program

General Statement. The Owner is committed to maintaining a drug and alcohol free workplace. The Owner has a vital interest in maintaining safe, healthful and efficient working conditions. Alcohol and illegal drug use or possession pose

a serious threat to workplace safety and health. Impairment from alcohol and the use and possession of illegal drugs pose a danger. The costs associated with implementing the Drug and Alcohol Free Workplace Program, (herein referred to as "Program") shall be the responsibility of the Contractor, Subcontractor or Sub-subcontractor, as applicable.

Responsibilities of Contractor and Subcontractors. Contractors and subcontractors shall adopt, implement and enforce drug and alcohol free workplace programs that comply with the following minimum conditions:

1. Employee Prohibitions

- a. No covered employee shall report for duty or remain on duty (i) while having an alcohol concentration of 0.04 or greater; (ii) while possessing alcohol; (iii) while using alcohol; or (iv) within Four (4) Hours after using alcohol.
- b. No covered employee shall report for duty or remain on duty when the employee uses any controlled substance (except when the use is pursuant to the written instructions or prescription of a physician who has advised the employee that the substance does not adversely affect the employee's ability to work safely) or tests positive for controlled substances.
- c. No covered employee required to take a post-accident alcohol test under this program shall use alcohol for Eight (8) Hours following the accident, or until he or she undergoes a post-accident alcohol test, whichever first occurs.
- d. No covered employee shall refuse to submit to a post-accident alcohol or controlled substances test required under this program or a reasonable suspicion alcohol or controlled substances test required by this program, or a follow-up alcohol or controlled substances test required under this program.

2. Employee Duties

- a. Covered employees shall comply with all mandates and prohibitions contained in this Program.
- b. Covered employees shall cooperate fully with all required testing and shall promptly report to all testing as directed.
- c. Covered employees are required to notify the Contractor or Subcontractor as applicable if they are taking any therapeutic drugs and shall supply a written certification on a form provided by the Contractor or Subcontractor from the physician prescribing the drug(s) that the substance(s) will not adversely affect the employee's ability to work safely and to comply with the safety requirements on the job.

3. Consequences of Covered Employees Engaging in Substance Use-Related Conduct.

- a. Consistent with contractual, legal and constitutional requirements, a determination shall be made by the Contractor or Subcontractor, as applicable, as to the appropriate disciplinary action, if any, to be imposed upon any covered employee who violates any of the prohibitions or mandates of this Program. Nothing in this Program shall be construed to limit the authority of any Contractor or Subcontractor to impose discipline, including discharge, as it shall determine so long as the minimums set forth in this Program are satisfied. Unless prohibited by law, contract or collective bargaining agreement, any employee who engages in any of the following conduct shall not be permitted access to the Construction Project and shall not be permitted to engage in any of the Work:

- i. Fails a drug test;
 - ii. Possesses illegal drugs;
 - iii. Refuses to submit to a drug or alcohol test;
 - iv. Is in possession of alcohol on the Work Site; or
 - v. Is convicted or pleads guilty or *nolo contendere* of illegal drug use, possession or trafficking.
 - b. Any covered employee tested under this Program who is found to have an alcohol concentration of 0.02 or greater but less than 0.04 shall be suspended without pay at least until the start of the employee's next regularly scheduled duty period that is at least Twenty-Four (24) Hours following the administration of the test.
 - c. Any covered employee: (i) who reports or remains on duty while having an alcohol concentration of 0.04 or greater, possessing alcohol, using alcohol or having used alcohol within Four (4) Hours of reporting to Work; or (ii) who reports or remains on duty when the employee uses or has used any controlled substance (except when the use is pursuant to the written instructions or prescription of a physician who has advised the employee that the substance does not adversely affect the employee's ability to safely Work and the employee has so advised the Contractor or Subcontractor) or tests positive for controlled substances; or (iii) who consumes alcohol in contravention of a post-accident alcohol test requirement or refuses to submit to any drug or alcohol test required under this Program, and who is not to be discharged from employment, shall be suspended without pay and shall not be reinstated until the following requirements have been met:
 - i. The employee has been advised of the resources available to the employee in evaluating and resolving problems associated with the misuse of alcohol and the use of controlled substances, including the names, addresses and telephone numbers of substance abuse professionals and counseling and treatment programs; and
 - ii. The employee has been evaluated by a substance abuse professional who shall determine what assistance, if any, the employee needs in resolving problems associated with alcohol misuse and controlled substances use; and
 - iii. The employee has undergone a return-to-work alcohol test with a result indicating an alcohol concentration of less than 0.02 if the conduct involved alcohol, or a controlled substance test with a verified negative result if the conduct involved a controlled substance; and
 - iv. If the employee has been identified as needing assistance in resolving problems associated with alcohol misuse or controlled substances use, the employee shall be evaluated by a substance abuse professional to determine that the employee has properly followed a rehabilitation program as prescribed.
4. Mandatory Drug and Alcohol Testing. Contractors and Subcontractors shall, as part of this Program, adhere to the following Post-Accident, Reasonable Suspicion, Return-to-Work and Follow-Up drug and alcohol testing of covered employees:
 - a. Post-Accident Testing. As soon as practicable following an accident in connection with the Work involving any personal injury of the employee or of another requiring medical attention or first aid, or any property damage greater than One Thousand Dollars (\$1,000), the employee shall be tested for alcohol and controlled substances.

- i. An employee who is subject to post-accident testing under this policy shall remain readily available for such testing or may be deemed by the Contractor or Subcontractor, as applicable, to have refused to submit to testing;
 - ii. If a post-accident alcohol test is not administered within Two (2) Hours following the accident, the Contractor or Subcontractor as applicable, shall prepare and maintain a record stating the reasons the test was not promptly administered. If the test is not administered within Eight (8) Hours following the accident, attempt to administer the alcohol test shall cease and the Contractor or Subcontractor, as applicable, shall prepare and maintain a record setting forth why testing was not performed.
 - iii. If a post-accident controlled substances test is not administered within Thirty-Two (32) Hours following the accident, attempts to administer the test shall cease and the Contractor or Subcontractor, as applicable, shall prepare and maintain a record stating the reasons why the test was not administered within the required time.
 - iv. A breath or blood test for the use of alcohol or a urine test for the use of controlled substance conducted by federal, state or local officials or policy having authority to conduct such testing shall be considered to meet the requirements of this Program if the results will be turned over to the Contractor or Subcontractor.
- b. Reasonable Suspicion Testing. A covered employee shall be required to submit to an alcohol and/or controlled substances test when the Contractor or Subcontractor, as applicable, has reasonable suspicion that the employee is using or has used alcohol or controlled substances in violation of the prohibitions or mandates of this Program.
- i. The determination that reasonable suspicion exists to require an employee to undergo testing must be based on specific, contemporaneous, articulable observations concerning the appearance, behavior, speech or body odors of the employee. The observations may include indications of the chronic and withdrawal effects of controlled substances. Reasonable suspicion as to alcohol use may be based only on observations made while the employee is working or just before the employee begins Work or just after the employee stops working.
 - ii. The Contractor and Subcontractors shall designate individuals who shall have obtained necessary training that covers the physical, behavioral, speech and performance indicators of probable alcohol misuse and use of controlled substances. Only those so trained are permitted to make the determination that can lead to Reasonable Suspicion Testing.
 - iii. Reasonable Suspicion Testing may not be performed by the individual who made the determination that there was reasonable suspicion for testing.
 - iv. A written record shall be prepared and maintained setting forth the basis and observations for the reasonable suspicion leading to the testing. With respect to suspicion related to controlled substances, such record shall be made and signed by the individual who made the observation within Twenty-Four (24) Hours of the observed behavior or before the results of the controlled substances test are released, whichever is earlier.

- v. Reasonable Suspicion Alcohol Testing shall be required while the employee is working, just before the employee begins work, or just after the employee stops working. If an alcohol test is not administered within Two (2) Hours following the determination that reasonable suspicion exists, the Contractor or Subcontractor shall prepare and maintain a record stating the reasons the test was not promptly administered. If the test is not administered within Eight (8) Hours following the determination that reasonable suspicion exists, attempts to administer the alcohol test shall cease and the Contractor or Subcontractor, as applicable, shall prepare and maintain a record setting forth the reasons the test was not administered. Notwithstanding the absence of a reasonable suspicion alcohol test, where there was reasonable suspicion of alcohol use, the employee shall not be permitted to work until:
 - (1) An alcohol test is administered and the employee's alcohol concentration measures to less than 0.02; or
 - (2) Twenty-Four (24) Hours have elapsed following the determination of reasonable suspicion.
- c. Return-to-Work Testing. No employee may return to work after engaging in conduct prohibited by this Program until after he or she has, as appropriate, undergone an alcohol test with a result indicating an alcohol concentration of less than 0.02 or a controlled substances test with a result indicating a verified negative result for controlled substance use.
- d. Follow-Up Testing. Any employee who is in need of assistance in resolving problems associated with alcohol misuse and/or use of controlled substances shall be subject to unannounced Follow-up Testing as directed by a substance abuse professional. Follow-up Testing shall be conducted only when the employee is working, just before the employee begins work, or just after the employee has stopped working.

5. Miscellaneous

- a. A "covered employee" under this program shall mean any person who is an employee of the Contractor or any Subcontractor and who engages in any Work that is subject to the safety requirements of the Contract or this Plan and any employee of any Contractor or any Subcontractor who operates a commercial vehicle as defined by law in connection with any of the Work.
- b. The means, manner and methods of the testing procedures for alcohol and substances under this Program shall be in accordance with the procedures set forth in Title 49, Part 40 of the Code of Federal Regulations, which, by this reference, are hereby incorporated herein by reference as if fully set forth herein. Without intending to limit the generality of the foregoing requirement, preparation for testing, specimen collection procedures, laboratory personnel requirements, laboratory analysis procedures, quality assurance and quality control procedures, reporting and review of results procedures, protection of employee records procedures, individual access to test and laboratory results, use of certified laboratory requirements, breath alcohol technician requirements, breath alcohol device requirements, quality assurance plans, procedures for confirmation of tests, refusal to test and uncompleted test procedures, inability to provide an

adequate amount of breath, invalid test procedures, etc., as governed by 49 CFR, Part 40, shall all be implemented by Contractors and Subcontractors with respect to any drug or alcohol test administered in accordance with this Program.

- c. Work Related Injuries. Contractors and Subcontractors shall require Post-Accident Testing in accordance with the terms and conditions of this Program in the event of any accident that results in a work-related accident. The Post-Accident Testing may be arranged by the Contractor or Subcontractor or may be arranged by the Workers' Compensation carrier. In either event, the procedures contained in 49 CFR, Part 40, shall be followed.
- d. Employee Training. Each Contractor and Subcontractor shall require that all employees are trained and periodically retrained in the requirements of the Drug and Alcohol Free Workplace Program. This training shall be properly documented.

10.0 Accident/Injury Management

Accident Reporting

All accidents resulting in employee injury, property damage, or involving the public shall be reported immediately to the project officials in accordance with the claims reporting instructions provided by the Contractor's Insurance Administrator. All accidents resulting in injuries or illnesses shall be thoroughly investigated by the ***injured worker's supervisor***.

The Contractor shall complete an Accident Investigation Report for all accidents resulting in employee injury, property damage, public involvement or near miss incidents. All Contractors shall cooperate with the Owner and its representatives in the investigation, analysis and defense of any claim, accident, occurrence or insured loss.

Accident Investigation

A formal written "Accident Investigation Report" and "First Report of Injury" shall be completed by the end of the working day/shift of the accident. Identification and review of accident causes shall be completed, identifying corrective actions, persons responsible for corrective actions and date of completion shall be established. Follow-up documentation verifying corrective action shall be required.

Copies of all accident investigation documents shall be maintained on file.

11.0 Workers' Compensation Claims Cooperation

Responsibilities of Contractor and Subcontractors

Contractors and Subcontractors shall adopt, implement and enforce a Workers' Compensation Program that complies with the following minimum conditions:

1. **Compliance with Posting and Notice Requirements.** Each Contractor and Subcontractor shall comply with all posting and notice requirements imposed by Pennsylvania's Workers' Compensation Act. Contractors and Subcontractors shall maintain documentation proving that they have complied with these requirements.

2. **Posting and Designation of Physicians.** In the event that the Workers' Compensation insurer has provided a list of designated physicians to the Contractor and/or Subcontractor, the Contractor and Subcontractor shall properly post and provide notice of the designated physicians to employees in accordance with the requirements of the Workers' Compensation Act. Contractors and Subcontractors shall maintain documentation proving that they have complied with these requirements. Where a designated physician panel is in place, Contractors and Subcontractors shall take action to ensure that injured employees receive treatment from the designated physicians in accordance with the law.
3. **Notice of Workers' Compensation Injuries.** Contractors and Subcontractors shall receive reports of occupational injuries and diseases in accordance with the terms and conditions of the Workers' Compensation Act and shall promptly complete and file the necessary forms and reports with the Commonwealth and the insurer or its representative.
4. **Participation in Claims Meetings.** Contractors and Subcontractors shall participate in claims review meetings when and if scheduled by the Workers' Compensation insurer or its representative.
5. **Return-to-Work Programs.** Contractors and Subcontractors shall cooperate with the Workers' Compensation insurer or its representative to return injured employees to Work as soon as possible consistent with their medical capabilities. Contractors and Subcontractors shall consider and offer modified Work to employees when such Work is available or can reasonably be made available.
6. **Litigation Cooperation.** In the event that there is any litigation growing out of a Work-related injury, each Contractor or Subcontractor, as applicable, shall cooperate with the insurer, its representatives and attorneys, in the defense of the claim and shall make necessary evidence and witnesses available for hearing preparation and testimony.
7. **Nothing in this Plan shall be construed as a requirement that any Contractor or Subcontractor take any action that is in violation of law, any applicable collective bargaining agreement or contract.**

12.0 General Safety and Health Policies

All employees shall use protective equipment prescribed by federal, state, and local laws and by this Plan to control hazards or other exposure to illness or injury. **Any employee who willfully refuses to use prescribed protective equipment designed to protect them or willfully damages such equipment shall be subject to disciplinary action which may include immediate removal from the Job Site.**

Competent Person Requirements

The Contractor, all Subcontractors and Sub-subcontractors shall develop and maintain documentation identifying employee(s) designated as a competent person(s). The qualifications for Competent Persons are identified in the Subpart of OSHA 29 CFR 1926. NOTE: Various subparts of OSHA have interpretations as to the qualifications and training required to be designated as a Competent Person (i.e., Subpart P – Excavations; Subpart L – Scaffolding; etc.)

Personal Protective Equipment

Eye and Face Protection

Contractors, Subcontractors and Sub-subcontractors shall provide, maintain and manage eye and face protection for their employees in accordance with OSHA Construction Standards 29 CFR 1926.102.

The Owner and/or its representatives reserve the right to mandate a 100% Eye Protection Policy throughout designated phases of the Work or specific areas of the Project if it is deemed necessary.

Only clear safety glasses shall be worn inside any building(s).

Head Protection

All Construction workers shall wear hard hats which meet ANSI Z 89.1-1986, One Hundred Percent (100%) of the time while on the Construction Site. Hard hats should display the company decal where the employee works.

All delivery personnel, vendors and visitors shall wear approved hard hats while on the Construction Site.

Hearing Protection

All Work areas identified as high noise exposure shall be properly posted to warn employees of the exposure.

Appropriate hearing protection shall be worn in Work areas where noise levels are 85 dBA or greater.

Respiratory Protection

Contractors whose Work activities warrant that employees wear respiratory protection, shall establish and implement a Respiratory Protection Program. The Program shall meet the requirements set forth in 29 CFR 1926.134.

Foot Protection

All personnel on the Construction Site shall wear leather hard-soled work boots. No one is permitted to wear sneakers (including ANSI approved), tennis shoes or athletic shoes of any type, sandals, high heels or open toed shoes on the Construction Site.

Clothing

Suitable clothing for Construction Work shall be worn on the Construction Site. Shirts with sleeves (at least t-shirt (4 inches in length) and full-length pants shall be required. Polyester or similar material is not allowed. Shorts, sweat pants or tank-tops are not allowed.

Fall Prevention

The Fall Prevention Policy is based on the following observations:

- All fall hazards can be eliminated, prevented and/or controlled.
- To control fall hazards is morally responsible, good business and cost effective.
- The establishment and implementation of a Fall Prevention Program is the most effective way to provide a continuous process to identify, evaluate and control fall hazards.

No person/employee shall be exposed to a fall hazard from any elevation greater than Six (6) Feet. In addition, all other construction activities that involves fall protection/prevention shall be performed in accordance with 29 CFR 1926, Subpart M:

- Employees exposed to a fall distance of Six (6) Feet or more (no exceptions), or less where the distance has a likelihood of a serious or fatal injury, shall be protected by the means of a Fall Protection System. **THERE IS A ZERO TOLERANCE POLICY ON FALL PROTECTION. ONE VIOLATION OF THE FALL PROTECTION POLICY WILL RESULT IN THE CONTRACTOR REMOVING THE VIOLATING EMPLOYEE FROM THE SITE FOR THE DURATION OF THE PROJECT. THE EMPLOYEE'S SUPERVISOR MAY BE REMOVED FROM THE SITE FOR FAILURE TO ENFORCE THE FALL PROTECTION POLICY.**
- Fall prevention controls shall be based on the principle that engineering and design techniques for the elimination and prevention of fall hazards shall be utilized above and beyond the use of Personal Fall Protection Equipment. When it is not feasible to provide fall prevention controls, workers exposed to falls shall be equipped with:
 - ◆ Only full-body harnesses and Lanyards with shock absorbers with locking snap-hooks. Body Belts are not permitted on the Project. All Personal Fall Protection Equipment shall be compatible and all manufacturers equipment guidelines shall be understood and followed.
 - ◆ Appropriate anchorage points, capable of supporting Five Thousand (5,000) Pounds per worker attached shall be properly installed.
- Contractors performing structural erection activities (such as precast concrete and steel erection) shall provide upon request a "Task Specific Fall Protection Plan" which complies with the Six (6) Foot Fall Protection Requirement. **THE ABOVE STATED ZERO TOLERANCE POLICY FOR FALL PROTECTION ALSO APPLIES TO STEEL ERECTION.**
- Ladders (straight, extension & step) shall be used only for employee access and short duration miscellaneous light Work where 3-point contact with the ladder can be maintained. If ladders are to be used for performing long duration heavy Work at heights Six (6) Feet and greater (or any height where the likelihood of a serious or fatal injury exists), the fall hazards shall be controlled through the use of fall protection.

Excavations and Trenches

Excavations shall be performed in accordance with 29 CFR 1926, Subpart P:

- A safe means of access and egress shall be provided for employees from excavations and trenches regardless of their depth at intervals that provide no more than Twenty-Five (25) Feet of lateral travel.
- A Competent Person shall be present anytime excavation Work is performed. The Competent Person shall inspect each excavation before the start of each shift and as conditions change (rain run-off, seeping water, freezing/thawing conditions, vibration, atmospheric conditions, etc.). All inspections shall be documented and maintained on file.
- All soils shall be classified as type "C" until the Competent Person can demonstrate the soil can be reclassified as another type, using acceptable soil analysis practices.
- All open excavations and trenches shall be barricaded or adequately guarded at all times with highly visible material.

- Equipment, material and spoil piles shall not be placed closer than Two (2) Feet from the excavation or trench edge.
- Atmospheric testing shall be conducted and completed in excavations and trenches where possible hazardous conditions exist prior to employees entering.

Electrical

Electrical Work shall be performed in accordance with 29 CFR 1926, Subpart K:

- Only qualified electricians familiar with code requirements shall be allowed to perform electrical Work.
- Extension cords used with portable electrical tools and appliances shall be heavy duty and of the three-wire type. Cords shall be covered, elevated or otherwise protected from damage which would create a hazard to Construction Site Personnel.
- Electrical cords and equipment shall be visually inspected before each shift for external defects. All damaged and defective cords shall be removed from service immediately (this includes cords with the ground prong missing). Cords shall be repaired with approved heat-shrink methods, electrical tape is not permitted.
- All temporary electrical tools, cords and equipment shall be properly protected by Ground Fault Circuit Interrupters (GFCI). All portable generators shall have properly functioning GFCI outlets. GFCI receptacles shall be tested monthly with a multi-range GFCI tester (the tests shall be documented) to insure the GFCI is properly functioning and protecting the worker.
- Electrical equipment or machinery shall be de-energized and rendered inoperative by the electrician performing Work on the system. Any company performing Work on electrical equipment shall develop a "task-specific" lockout/tagout safety plan. Lockout/Tagout shall be performed in accordance with 29 CFR 1910.147. The failure to follow lockout/tagout procedures will result in immediate removal from the Project.

Scaffolds

Scaffold Work

- Lean-to scaffolds and makeshift platforms shall be prohibited.
- Scaffolds shall not be used for storage of materials except material currently being used.
- All scaffolds shall be adequately designed to carry, without failure, Four (4) Times the maximum intended load. At no time shall any scaffold be overloaded.
- All scaffolds shall be maintained in safe condition. Scaffolds damaged or weakened, from any cause, shall be immediately removed from service.
- Scaffolding more than Six (6) Feet above the working surface shall have standard guardrails and toeboards properly installed.

- Each Contractor working with scaffolds shall designate, in writing, the name of their designated Competent Person for erection, dismantling, altering and moving of scaffolds.
- Scaffolds shall be inspected prior to each shift by the designated Competent Person.
- Proper access shall be provided for all employees to working areas. Employees shall not climb on cross-bracing to access scaffold.
- Scaffolds shall be erected on sound, rigid surfaces. Base-plates and mud-sills shall be used with all scaffolds. Unstable objects such as brick, block, etc. shall not be used to support scaffolds.

Welding and Cutting

Welding and Cutting Work shall be performed in accordance with 29 CFR 1926, Subpart J:

- Welding leads and cutting hoses shall be kept clear of walkways and stairways.
- Flash arrestors shall be installed on both oxygen and acetylene hoses at the regulator connection.
- All welders shall wear approved eye and head protection when welding. All personnel assisting the welder shall also wear approved protective eye protection.
- Prior to welding or cutting a "20-ABC" rated fire extinguisher shall be within easy reach of the worker. A fire watch shall be stationed at all locations where sparks and/or flames may fall to a lower floor/work area or to another side of a wall.
- A suitable cylinder truck, with chain, shall be used to keep cylinders from being knocked over while in use.
- Spent welding rods shall be picked up and disposed of daily.
- When practical, all welding and cutting operations shall be shielded by non-combustible or flame-proof screens.
- Oxygen and acetylene cylinders shall not be stored inside buildings.
- Rubber boot protectors shall be provided on all welding leads where they make connections at the welding machine.

Cranes

Crane Operations shall be in accordance with 29 CFR 1926, Subpart N:

The following requirements shall be followed by the Contractor and all tiered Subcontractors for all cranes entering the Construction Area:

- All hydraulic and lattice boom cranes operating on the Construction Site shall be equipped with a functioning "anti-two blocking" device.
- The operator shall know the weight of every suspended load, regardless of size.

- All cranes shall have an annual inspection (completed and certified by a nationally recognized crane inspection organization).

All crane operators shall be qualified prior to operating any crane on the Job Site:

- Operators shall meet the requirements of Chapter 5, ANSI B30.5c-1992.
- An up-to-date résumé detailing the operator's qualifications (i.e., years of experience, previous jobs worked on, etc.) shall be maintained in the Contractor's and/or any Subcontractors and Sub-subcontractor's files at the Job Site.
- Before any operator is allowed to operate a crane on the Construction Site, the Contractor and/or Subcontractors and Sub-subcontractors shall have the operator perform a functional operation appraisal to ensure the operator is qualified. This shall be documented and maintained on file.

Cranes shall be inspected for safety-related deficiencies and defective/damaged parts that effect the safe operation of a crane. Cranes shall be immediately removed from service until repairs can be made. The following inspection criteria shall be followed:

- After set-up and prior to initial lift;
- Before each shift;
- After every malfunction;
- Manufacturer's inspection guidelines.

Motor Vehicles and Heavy Equipment

Heavy Equipment Work shall be performed in accordance with 29 CFR 1926, Subpart O:

- All employees who operate equipment and vehicles shall have sufficient experience with that particular piece of equipment and shall be trained in the safe operation of that equipment.
- All heavy equipment including: cranes, forklifts, dozers, endloaders, etc. shall have a reverse signal/back-up alarm audible above surrounding background noise.
- No one shall ride in a vehicle or mobile equipment unless they are in a seat (exceptions if the equipment is designed to be operated while standing up). Riding in the back of pick-up trucks shall not be allowed.
- All motor vehicles and equipment brought on-site shall be thoroughly inspected and shall be in safe operating condition.

Demolition Activities

All Contractors performing any removal or demolition activities shall ensure compliance with OSHA 29CFR 1926.62 rules and regulations to prevent any lead contamination.

END OF SECTION 00 8200

SECTION 02.4119 – SELECTIVE DEMOLITION**PART 1 - GENERAL**

1.1 SUMMARY

- A. Selective building demolition:
 - 1. Selective demolition of interior partitions, systems, and building components designated to be removed.
 - 2. Protection of portions of building adjacent to or affected by selective demolition.
 - 3. Notification to Owner of schedule of shut-off of utilities which serve occupied spaces.
 - 4. Pollution control during selective demolition, including noise control.
 - 5. Removal and legal disposal of materials.
 - 6. Protection of designated site improvements and adjacent construction.
 - 7. Salvage of designated items.
 - 8. Interruption, capping or removal of utilities as applicable.

1.2 SUBMITTALS

- A. Submit under provisions of Section 01.3000 – Administrative Requirements.
- B. Schedule: Submit for approval selective demolition schedule, including schedule and methods for capping utilities to be abandoned and maintaining existing utility service.

1.3 QUALITY ASSURANCE

- 1. Codes and Regulations: Comply with governing codes and regulations. Use experienced workers,

1.4 PRE-INSTALLATION MEETINGS

- A. Convene minimum two weeks prior to starting work of this section.

1.5 SEQUENCING

- A. Immediate areas of work will not be occupied during selective demolition. The public, including children, may occupy adjacent areas.
- B. No responsibility for buildings and structures to be demolished will be assumed by the owner.
- C. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

PART 2 - PRODUCTS**PART 3 - EXECUTION****3.1 SELECTIVE DEMOLITION**

- A. Demolition Operations: Do not damage building elements and improvements indicated to remain. Items of salvage value, not included on schedule of salvage items to be returned to Owner, shall be removed from structure. Storage or sale of items at project site is prohibited.
- B. Utilities: Locate, identify, disconnect, and seal or cap off utilities in buildings to be demolished.
- C. Shoring and Bracing: Provide and maintain interior and exterior shoring and bracing.
- D. Occupied Spaces: Do not close or obstruct streets, walks, drives or other occupied or used spaces or facilities without the written permission of the Owner and the authorities having jurisdiction. Do not interrupt utilities serving occupied or used facilities without the written permission of the Owner and authorities having jurisdiction. If necessary, provide temporary utilities.
- E. Operations: Cease operations if public safety or remaining structures are endangered. Perform temporary corrective measures until operations can be continued properly.
- F. Security: Provide adequate protection against accidental trespassing. Secure project after work hours.
- G. Restoration: Restore finishes of patched areas.

3.2 SCHEDULE

- A. Items for Protection During Demolition and Construction:
 - 1. Trees and plantings as selected by owner prior to construction
 - 2. Existing adjacent structure
- B. Items to be Salvaged for Reinstallation:
 - 1. Verify with owner prior to construction
- C. Items to be Salvaged for Delivery to Owner:
 - 1. Verify with owner prior to construction
- D. Utilities Requiring Interruption, Capping, or Removal:
 - 1. Electric
 - 2. Heat
 - 3. Water
 - 4. Cable Television

END OF SECTION 02.4119

SECTION 03.3000 - CAST-IN-PLACE CONCRETE**PART 1 - GENERAL**

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes.
- B. Related Requirements:
 - 1. Section 312000 "Earth Moving" for drainage fill under slabs-on-grade.
 - 2. Section 321313 "Concrete Paving" for concrete pavement and walks.

1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash, slag cement, other pozzolans, and silica fume; materials subject to compliance with requirements.
- B. W/C Ratio: The ratio by weight of water to cementitious materials.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
 - a. Contractor's superintendent.
 - b. Independent testing agency responsible for concrete design mixtures.
 - c. Ready-mix concrete manufacturer.
 - d. Concrete Subcontractor.
 - 2. Review special inspection and testing and inspecting agency procedures for field quality control, concrete finishes and finishing, cold- and hot-weather concreting procedures, curing procedures, construction contraction and isolation joints, and joint-filler strips, semirigid joint fillers, forms and form removal limitations, vapor-retarder installation, anchor rod and anchorage device installation tolerances,

steel reinforcement installation, methods for achieving specified floor and slab flatness and levelness; floor and slab flatness and levelness measurement, concrete repair procedures, and concrete protection.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
- C. Steel Reinforcement Shop Drawings: Placing Drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.
- D. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.
 - 1. Location of construction joints is subject to approval of the Architect.
- E. Contraction Joint Layout: Indicate proposed contraction joint locations.
 - 1. Location of contraction joints is subject to approval of the Architect.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer; manufacturer; testing agency.
- B. Welding certificates.
- C. Material Certificates: For each of the following, signed by manufacturers:
 - 1. Cementitious materials.
 - 2. Admixtures.
 - 3. Form materials and form-release agents.
 - 4. Steel reinforcement and accessories.
 - 5. Waterstops.
 - 6. Curing compounds.
 - 7. Bonding agents.
 - 8. Adhesives.
 - 9. Vapor retarders.
 - 10. Semirigid joint filler.
 - 11. Joint-filler strips.
 - 12. Repair materials.
- D. Floor surface flatness and levelness measurements indicating compliance with specified tolerances.
- E. Field quality-control reports.

- F. Minutes of preinstallation conference.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.
- B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
 - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- C. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
 - 1. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician, Grade I. Testing agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician, Grade II.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.
- B. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

1.9 FIELD CONDITIONS

- A. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
 - 1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
 - 2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
 - 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.
- B. Hot-Weather Placement: Comply with ACI 301 and as follows:
 - 1. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.

2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

- A. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:

1. ACI 301.
2. ACI 117.

2.2 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
 1. Plywood, metal, or other approved panel materials.
- B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.
- C. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, or as detailed.
- D. Rustication Strips: Wood, metal, PVC, or rubber strips, kerfed for ease of form removal.
- E. Form-Release Agent: Commercially formulated form-release agent that does not bond with, stain, or adversely affect concrete surfaces and does not impair subsequent treatments of concrete surfaces.
 1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
- F. Form Ties: Factory-fabricated, removable or snap-off glass-fiber-reinforced plastic or metal form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
 1. Furnish units that leave no corrodible metal closer than 1 inch to the plane of exposed concrete surface.
 2. Furnish ties that, when removed, leave holes no larger than 1 inch in diameter in concrete surface.
 3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

2.3 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.

- B. Plain-Steel Welded-Wire Reinforcement: ASTM A 1064/A 1064M, plain, fabricated from as-drawn steel wire into flat sheets.

2.4 REINFORCEMENT ACCESSORIES

- A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded-wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:
 - 1. For concrete surfaces exposed to view, where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.
 - 2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.

2.5 CONCRETE MATERIALS

- A. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.
- B. Cementitious Materials:
 - 1. Portland Cement: ASTM C 150/C 150M, Type I.
 - 2. Fly Ash: ASTM C 618, Class F.
 - 3. Ground Granulated Blast-Furnace Slag, ASTM C989, Grade 100 or 120.
- C. Normal-Weight Aggregates: ASTM C 33/C 33M, Class 3S coarse aggregate or better, graded. Provide aggregates from a single source. Aggregate for door sills and steel pan stairs shall not exceed 1/2inch.
 - 1. Maximum Coarse-Aggregate Size: 1 inchnominal.
 - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- D. Air-Entraining Admixture: ASTM C 260/C 260M.
- E. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures and that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
 - 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
 - 2. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
 - 3. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
- F. Water: ASTM C 94/C 94M and potable.

2.6 WATERSTOPS

- A. Self-Expanding Butyl Strip Waterstops: Manufactured rectangular or trapezoidal strip, butyl rubber with sodium bentonite or other hydrophilic polymers, for adhesive bonding to concrete, 3/4 by 1 inch.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Carlisle Coatings & Waterproofing, Inc.; MiraSTOP.
 - b. CETCO; Volclay Waterstop-RX.
 - c. Concrete Sealants Inc.; Con Seal CS-231.
 - d. Greenstreak; Swellstop.
 - e. Henry Company, Sealants Division; Hydro-Flex.
 - f. JP Specialties, Inc.; Earth Shield Type 20.

2.7 VAPOR RETARDERS

- A. Sheet Vapor Retarder: ASTM E 1745, Class A, except with maximum water-vapor permeance of not more than 0.01 gr/sq.ft. complying with ASTM E 1745. Include manufacturer's recommended adhesive or pressure-sensitive tape.
 - 1. Stego Industries LLC.; Stego Wrap Vapor Barrier, 15 mil.
 - 2. WR Meadows, Inc.; Perminator HP, 15 mil
 - 3. Insulation Solutions, Inc.; Viper Vaporcheck II, 15 mil.

2.8 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
- B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.
- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class A, certified by curing compound manufacturer to not interfere with bonding of floor covering.

2.9 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.
- B. Bonding Agent: ASTM C 1059/C 1059M, Type II, nonredispersible, acrylic emulsion or styrene butadiene.

- C. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:
 - 1. Types I and II, nonload bearing, for bonding hardened or freshly mixed concrete to hardened concrete.
- D. Reglets: Fabricate reglets of not less than 0.022-inch- thick, galvanized-steel sheet. Temporarily fill or cover face opening of reglet to prevent intrusion of concrete or debris.
- E. Dovetail Anchor Slots: Hot-dip galvanized-steel sheet, not less than 0.034 inch thick, with bent tab anchors. Temporarily fill or cover face opening of slots to prevent intrusion of concrete or debris.

2.10 REPAIR MATERIALS

- A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.
 - 1. Cement Binder: ASTM C 150/C 150M, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
 - 2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
 - 3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by underlayment manufacturer.
 - 4. Compressive Strength: Not less than 4100 psi at 28 days when tested according to ASTM C 109/C 109M.
- B. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch and that can be filled in over a scarified surface to match adjacent floor elevations.
 - 1. Cement Binder: ASTM C 150/C 150M, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
 - 2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
 - 3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.
 - 4. Compressive Strength: Not less than 5000 psi at 28 days when tested according to ASTM C 109/C 109M.

2.11 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
 - 1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

- B. Cementitious Materials, Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
 - 1. Fly Ash: 25 percent.
 - 2. Combined Fly Ash and Ground Granulated Blast Furnace Slag: 25 percent.
 - 3. Granulated Blast Furnace Slag: 25 percent.
- C. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.
- D. Admixtures: Use admixtures according to manufacturer's written instructions.
 - 1. Use water-reducing or high-range water-reducing admixture in concrete, as required, for placement and workability.
 - 2. Use water-reducing and -retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
 - 3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a w/c ratio below 0.50.

2.12 CONCRETE MIXTURES FOR BUILDING ELEMENTS

- A. Footings, Foundation Walls and Pit Bottoms: Normal-weight concrete.
 - 1. Minimum Compressive Strength: 3500 psi at 28 days.
 - 2. Maximum W/C Ratio: 0.55.
 - 3. Slump Limit: 4 inches.
 - 4. Air Content: **5** percent, plus or minus 1.0 percent at point of delivery.
- B. Concrete Slabs: Normal-weight concrete:
 - 1. Minimum Compressive Strength: 4000 psi at 28 days.
 - 2. Maximum W/C Ratio: 0.50, except 0.45 for concrete exposed to deicers or subject to freezing and thawing while moist.
 - 3. Minimum Cementitious Materials Content: 520 lb/cu. yd.
 - 4. Slump Limit: 4 inches.
 - 5. Air Content: Do not allow air content of trowel-finished floors to exceed 3 percent.

2.13 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.14 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.

1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 FORMWORK INSTALLATION

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Limit concrete surface irregularities, designated by ACI 347 as abrupt or gradual, as follows:
 1. Class A, 1/8 inch for smooth-formed finished surfaces.
 2. Class C, 1/2 inch for rough-formed finished surfaces.
- D. Construct forms tight enough to prevent loss of concrete mortar.
- E. Construct forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast-concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
 1. Install keyways, reglets, recesses, and the like, for easy removal.
 2. Do not use rust-stained steel form-facing material.
- F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- H. Chamfer exterior corners and edges of permanently exposed concrete.
- I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

- L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEM INSTALLATION

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
 - 1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC 303.
 - 2. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.
 - 3. Install dovetail anchor slots in concrete structures as indicated.

3.3 REMOVING AND REUSING FORMS

- A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations, and curing and protection operations need to be maintained.
 - 1. Leave formwork for beam soffits, joists, slabs, and other structural elements that support weight of concrete in place until concrete has achieved at least 70 percent of its 28-day design compressive strength.
 - 2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.
- B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material are not acceptable for exposed surfaces. Apply new form-release agent.
- C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.4 SHORING AND RESHORING INSTALLATION

- A. Comply with ACI 318 and ACI 301 for design, installation, and removal of shoring and reshoring.
 - 1. Do not remove shoring or reshoring until measurement of slab tolerances is complete.
- B. Plan sequence of removal of shores and reshore to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection.

3.5 VAPOR-RETARDER INSTALLATION

- A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder according to ASTM E 1643 and manufacturer's written instructions.
 - 1. Lap joints 6 inches and seal with manufacturer's recommended tape.

3.6 STEEL REINFORCEMENT INSTALLATION

- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
 - 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that reduce bond to concrete.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
- D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.
- E. Install welded-wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

3.7 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
 - 1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
 - 2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete.
 - 3. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
 - 4. Space vertical joints in walls as indicated. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
- C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows:

1. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
- D. If joint pattern is not shown, provide joints not exceeding 15' in either direction and located to conform to bay spacing wherever possible (at column centerlines, half bays, third bays) and as approved by the Architect. Consult with Architect prior to locating joints.
- E. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
 1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless otherwise indicated.
 2. Terminate full-width joint-filler strips not less than 1/2 inch or more than 1 inch below finished concrete surface where joint sealants, specified in Section 079200 "Joint Sealants," are indicated.
 3. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.

3.8 WATERSTOP INSTALLATION

- A. Flexible Waterstops: Install in construction joints and at other joints indicated to form a continuous diaphragm. Install in longest lengths practicable. Support and protect exposed waterstops during progress of the Work. Field fabricate joints in waterstops according to manufacturer's written instructions.
- B. Self-Expanding Strip Waterstops: Install in construction joints and at other locations indicated, according to manufacturer's written instructions, adhesive bonding, mechanically fastening, and firmly pressing into place. Install in longest lengths practicable.

3.9 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections are completed.
- B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect.
- C. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
 1. Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid inclined construction joints.

2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
 3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.
- D. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
1. Consolidate concrete during placement operations, so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 2. Maintain reinforcement in position on chairs during concrete placement.
 3. Screed slab surfaces with a straightedge and strike off to correct elevations.
 4. Slope surfaces uniformly to drains where required.
 5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

3.10 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
1. Apply to concrete surfaces not exposed to public view.
- B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
1. Apply to concrete surfaces exposed to public view, to receive a rubbed finish or to be covered with a coating or covering material applied directly to concrete.
- C. Rubbed Finish: Apply the following to smooth-formed-finished as-cast concrete where indicated:
1. Smooth-Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.
 2. Grout-Cleaned Finish: Wet concrete surfaces and apply grout of a consistency of thick paint to coat surfaces and fill small holes. Mix 1 part portland cement to 1-1/2 parts fine sand with a 1:1 mixture of bonding admixture and water. Add white portland cement in amounts determined by trial patches, so color of dry grout matches adjacent surfaces. Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean burlap and keep surface damp by fog spray for at least 36 hours.

- D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.11 FINISHING FLOORS AND SLABS

- A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of **1/4 inch** in one direction.
 - 1. Apply scratch finish to surfaces indicated, and to receive concrete floor toppings, and if scheduled to receive mortar setting beds for bonded cementitious floor finishes.
- C. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power-driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.
 - 1. Apply float finish to surfaces indicated to receive trowel finish and to be covered with fluid-applied or sheet waterproofing, built-up or membrane roofing.
- D. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
 - 1. Apply a trowel finish to surfaces indicated and exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin-film-finish coating system.
 - 2. Finish surfaces to the following tolerances, according to ASTM E 1155, for a randomly trafficked floor surface:
 - a. Specified overall values of flatness, F(F) 35; and of levelness, F(L) 25; with minimum local values of flatness, F(F) 24; and of levelness, F(L) 17; for slabs-on-grade.
- E. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces where ceramic or quarry tile is to be installed by either thickset or thinset method. While concrete is still plastic, slightly scarify surface with a fine broom.
 - 1. Comply with flatness and levelness tolerances for trowel-finished floor surfaces.
- F. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated.

1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

3.12 MISCELLANEOUS CONCRETE ITEM INSTALLATION

- A. Filling In: Fill in holes and openings left in concrete structures after work of other trades is in place unless otherwise indicated. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.
- B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.
- C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on Drawings. Set anchor bolts for machines and equipment at correct elevations, complying with diagrams or templates of manufacturer furnishing machines and equipment.
- D. Steel Pan Stairs: Provide concrete fill for steel pan stair treads, landings, and associated items. Cast-in inserts and accessories as shown on Drawings. Screed, tamp, and trowel finish concrete surfaces.

3.13 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for remainder of curing period.
- D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.
- E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
 - a. Water.
 - b. Continuous water-fog spray.

- c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period, using cover material and waterproof tape.
 - a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
 - b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
 - c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies does not interfere with bonding of floor covering used on Project.
 3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
 - a. Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer unless manufacturer certifies curing compound does not interfere with bonding of floor covering used on Project.
 4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.14 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.
- B. Patching Mortar: Mix dry-pack patching mortar, consisting of 1 part portland cement to 2-1/2 parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.
- C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
 1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension to solid concrete. Limit cut depth to 3/4 inch. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids

- with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar matches surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
 3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.
- D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
 2. After concrete has cured at least 14 days, correct high areas by grinding.
 3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
 4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
 5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
 6. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete, except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
 7. Repair random cracks and single holes 1 inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.
- E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.
- F. Repair materials and installation not specified above may be used, subject to Architect's approval.

3.15 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a special inspector and qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.
- B. Inspections:
1. Steel reinforcement placement.
 2. Headed bolts and studs.
 3. Verification of use of required design mixture.
 4. Concrete placement, including conveying and depositing.
 5. Curing procedures and maintenance of curing temperature.
 6. Verification of concrete strength before removal of shores and forms from beams and slabs.
- C. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172/C 172M shall be performed according to the following requirements:
1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.
 - a. When frequency of testing provides fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
 2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
 3. Air Content: ASTM C 231/C 231M, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
 4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below or 80 deg F and above, and one test for each composite sample.
 5. Compression Test Specimens: ASTM C 31/C 31M.
 - a. Cast and laboratory cure one set of five standard cylinder specimens for each composite sample.
 - b. Cast and field cure one set of five standard cylinder specimens for each composite sample.
 6. Compressive-Strength Tests: ASTM C 39/C 39M; test two specimens (one field and one lab) at 7 days, test six specimens (three field and three lab) at 28 days and two specimens retained in reserve for later testing if required.
 - a. Test two field-cured specimens at 7 days and two specimens at 28 days.
 - b. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.

7. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
 8. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
 9. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
 10. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
 11. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Architect.
 12. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
 13. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.
- D. Measure floor and slab flatness and levelness according to ASTM E 1155 within 24 to 36 hours of finishing.

END OF SECTION 03.3000

SECTION 04.2000 - UNIT MASONRY**PART 1 - GENERAL**

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Concrete masonry units.
2. Mortar and grout.
3. Steel reinforcing bars.
4. Masonry joint reinforcement.
5. Embedded flashing.
6. Miscellaneous masonry accessories.

B. Related Sections:

1. Section 033150 "Precast Concrete U-Lintels" for precast lintels.
2. Section 051200 "Structural Steel Framing" for installing anchor sections of adjustable masonry anchors for connecting to structural steel frame.
3. Section 055000 "Metal Fabrications" for furnishing steel lintels and shelf angles for unit masonry.
4. Section 076200 "Sheet Metal Flashing and Trim" for exposed sheet metal flashing and for furnishing manufactured reglets installed in masonry joints.

1.3 DEFINITIONS

- A. CMU(s): Concrete masonry unit(s).
- B. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.4 PERFORMANCE REQUIREMENTS

- A. Provide structural unit masonry that develops indicated net-area compressive strengths at 28 days.
 1. Determine net-area compressive strength of masonry from average net-area compressive strengths of masonry units and mortar types (unit-strength method) according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.
 2. Determine net-area compressive strength of masonry by testing masonry prisms according to ASTM C 1314.

1.5 PRECONSTRUCTION TESTING

- A. Preconstruction Testing Service: Owner will engage a qualified independent testing agency to perform preconstruction testing indicated below. Retesting of materials that fail to comply with specified requirements shall be done at Contractor's expense.
1. Concrete Masonry Unit Test: For each type of unit required, according to ASTM C 140 for compressive strength.
 2. Mortar Test (Property Specification): For each mix required, according to ASTM C 109/C 109M for compressive strength, ASTM C 1506 for water retention, and ASTM C 91 for air content.
 3. Mortar Test (Property Specification): For each mix required, according to ASTM C 780 for compressive strength.
 4. Grout Test (Compressive Strength): For each mix required, according to ASTM C 1019.
 5. Prism Test: For each type of construction required, according to ASTM C 1314.

1.6 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For the following:
1. Masonry Units: Show sizes, profiles, coursing, and locations of special shapes.
 2. Reinforcing Steel: Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement." Show elevations of reinforced walls.
 3. Fabricated Flashing: Detail corner units, end-dam units, and other special applications.
- C. Samples for Initial Selection:
1. Colored mortar.
 2. Weep holes/vents.
- D. Samples for Verification: For each type and color of the following:
1. Exposed CMUs.
Pigmented and colored-aggregate mortar. Make Samples using same sand and mortar ingredients to be used on Project.
 2. Weep holes and vents.
 3. Accessories embedded in masonry.

1.7 INFORMATIONAL SUBMITTALS

- A. List of Materials Used in Constructing Mockups: List generic product names together with manufacturers, manufacturers' product names, model numbers, lot numbers, batch numbers, source of supply, and other information as required to identify materials used. Include mix proportions for mortar and grout and source of aggregates.

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1. Submittal is for information only. Neither receipt of list nor approval of mockup constitutes approval of deviations from the Contract Documents unless such deviations are specifically brought to the attention of Architect and approved in writing.
 - B. Qualification Data: For testing agency.
 - C. Material Certificates: For each type and size of the following:
 1. Masonry units.
 - a. Include material test reports substantiating compliance with requirements.
 - b. For brick, include size-variation data verifying that actual range of sizes falls within specified tolerances.
 - c. For exposed brick, include test report for efflorescence according to ASTM C 67.
 - d. For masonry units used in structural masonry, include data and calculations establishing average net-area compressive strength of units.
 2. Cementitious materials. Include brand, type, and name of manufacturer.
 3. Preblended, dry mortar mixes. Include description of type and proportions of ingredients.
 4. Grout mixes. Include description of type and proportions of ingredients.
 5. Reinforcing bars.
 6. Joint reinforcement.
 7. Anchors, ties, and metal accessories.
 - 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 for air content.
 2. Include test reports, according to ASTM C 1019, for grout mixes required to comply with compressive strength requirement.
 - E. Statement of Compressive Strength of Masonry: For each combination of masonry unit type and mortar type, provide statement of average net-area compressive strength of masonry units, mortar type, and resulting net-area compressive strength of masonry determined according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.
 - F. Cold-Weather and Hot-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with requirements.
- 1.8 QUALITY ASSURANCE
- A. Testing Agency Qualifications: Qualified according to ASTM C 1093 for testing indicated.
 - B. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from single source from single manufacturer for each product required.

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- C. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from single manufacturer for each cementitious component and from single source or producer for each aggregate.
- D. Masonry Standard: Comply with ACI 530.1/ASCE 6/TMS 602 unless modified by requirements in the Contract Documents.
- E. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
1. Build mockups for each type of exposed unit masonry construction in sizes approximately 88 inches long by 72 inches high by full thickness, including face and backup wythes and accessories. Build mock-up in location as approved by Architect for each type of exposed masonry construction.
 - a. Include a sealant-filled joint at least 16 inches long in each exterior wall mockup.
 - b. Include lower corner of window opening framed with limestone sill at upper corner of exterior wall mockup. Make opening approximately 12 inches wide by 16 inches high.
 - c. Include through-wall flashing installed for a 24-inch length in corner of exterior wall mockup approximately 16 inches down from top of mockup, with a 12-inch length of flashing left exposed to view (omit masonry above half of flashing).
 - d. Include metal studs, sheathing, air barrier, insulation, veneer anchors, flashing, cavity drainage material, and weep holes in exterior masonry-veneer wall mockup.
 - e. The upper one-third of the mockup shall be metal wall panel wall construction. The mockup shall include the transition between the masonry and metal wall panel construction.
 2. Clean exposed faces of mockups with masonry cleaner as indicated.
 3. Protect accepted mockups from the elements with weather-resistant membrane.
 4. Approval of mockups is for color, texture, and blending of masonry units; relationship of mortar and sealant colors to masonry unit colors; tooling of joints; and aesthetic qualities of workmanship.
 - a. Approval of mockups is also for other material and construction qualities specifically approved by Architect in writing.
 - b. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless such deviations are specifically approved by Architect in writing.
- F. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination."
- 1.9 DELIVERY, STORAGE, AND HANDLING
- A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

- C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- D. Deliver preblended, dry mortar mix in moisture-resistant containers designed for use with dispensing silos. Store preblended, dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in covered weatherproof dispensing silos.
- E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.10 PROJECT CONDITIONS

- A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
 - 1. Extend cover a minimum of 24 inches down both sides of walls and hold cover securely in place.
 - 2. Where one wythe of multiwythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24 inches down face next to unconstructed wythe and hold cover in place.
- B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least three days after building masonry walls or columns.
- C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.
 - 1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
 - 2. Protect sills, ledges, and projections from mortar droppings.
 - 3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
 - 4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.
- D. 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 ACI 530.1/ASCE 6/TMS 602.
 - 1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and higher and will remain so until masonry has dried, but not less than seven days after completing cleaning.
- E. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

PART 2 - PRODUCTS

2.1 MASONRY UNITS, GENERAL

- A. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not use units where such defects will be exposed in the completed Work.
- B. Fire-Resistance Ratings: Where indicated, provide units that comply with requirements for fire-resistance ratings indicated as determined by testing according to ASTM E 119, by equivalent masonry thickness, or by other means, as 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.
 - 2. Provide bullnose units for outside corners unless otherwise indicated.
- B. Pattern: Refer to Drawings for stacking pattern.
- C. CMUs: ASTM C 90.
 - 1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 2800 psi.
 - 2. Density Classification: Normal weight unless otherwise indicated.
 - 3. Size (Width): Manufactured to dimensions 3/8 inch less than nominal dimensions.

2.3 CONCRETE AND MASONRY LINTELS

- A. General: Provide one of the following as indicated in lintel schedule.
- B. Concrete Lintels: ASTM C 1623, matching CMUs in color, texture, and density classification; and with reinforcing bars indicated. Provide lintels with net-area compressive strength not less than CMUs.
- C. Masonry Lintels: Prefabricated or built-in-place masonry lintels made from bond beam CMUs with reinforcing bars placed as indicated and filled with coarse grout. Cure precast lintels before handling and installing. Temporarily support built-in-place lintels until cured.

2.4 MORTAR AND GROUT MATERIALS

- A. NO Masonry Cement: Mortar to comply with ASTM C270
- B. Portland Cement: ASTM C 150, 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.
- C. Hydrated Lime: ASTM C 207, Type S.
- D. Portland Cement-Lime Mix: Packaged blend of portland cement complying with ASTM C 150, Type I or III, and hydrated lime containing no other ingredients, complying with ASTM C 207, Type S.
- E. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes and complying with ASTM C 979. Use only pigments with a record of satisfactory performance in masonry mortar.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Davis Colors; True Tone Mortar Colors.
 - b. Lanxess Corporation; Bayferrox Iron Oxide Pigments.
 - c. Solomon Colors, Inc.; SGS Mortar Colors.
- F. Colored Cement Product: Packaged blend made from portland cement and lime mix or mortar pigments, all complying with specified requirements, and containing no other ingredients.
 - 1. Colored Masonry Cement:
 - a. Products: Subject to compliance with requirements, provide one of the following:
 - 1) Capital Materials Corporation; Flamingo Color Masonry Cement.
 - 2) Essroc, Italcementi Group; Brixment-in-Color.
 - 3) Holcim (US) Inc.; Rainbow Mortamix Custom Color Masonry Cement.
 - 4) Lafarge North America Inc.; U.S. Cement Custom Color Masonry Cement.
 - 5) Lehigh Cement Company; Lehigh Custom Color Masonry Cement.
 - 6) National Cement Company, Inc.; Coosa Masonry Cement.
 - 2. Formulate blend as required to produce color indicated or, if not indicated, as selected from manufacturer's standard colors.
 - 3. Pigments shall not exceed 10 percent of portland cement by weight.
- G. Aggregate for Mortar: ASTM C 144.
 - 1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
 - 2. For joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.
 - 3. White-Mortar Aggregates: Natural white sand or crushed white stone.

4. Colored-Mortar Aggregates: Natural sand or crushed stone of color necessary to produce required mortar color.
- H. Aggregate for Grout: ASTM C 404.
- I. 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.
 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Euclid Chemical Company (The); Accelguard 80.
 - b. Grace Construction Products, W. R. Grace & Co. - Conn.; Morset.
 - c. Sonneborn Products, BASF Aktiengesellschaft; Trimix-NCA.
- J. Water: Potable.

2.5 REINFORCEMENT

- A. Uncoated Steel Reinforcing Bars: ASTM A 615/A 615M or ASTM A 996/A 996M, Grade 60.
- B. Masonry Joint Reinforcement, General: ASTM A 951/A 951M.
 1. Interior Walls: Mill- galvanized, carbon steel.
 2. Exterior Walls: Hot-dip galvanized, carbonsteel.
 3. Wire Size for Side Rods: 0.148-inch diameter.
 4. Wire Size for Cross Rods: 0.148-inch.
 5. Wire Size for Veneer Ties: 0.187-inchdiameter.
 6. Spacing of Cross Rods, Tabs, and Cross Ties: Not more than 16 inches o.c.
 7. Provide in lengths of not less than 10 feet, with prefabricated corner and tee units.
- C. Masonry Joint Reinforcement for Single-Wythe Masonry: Either ladder or truss type with single pair of side rods.
- D. Masonry Joint Reinforcement for Multiwythe Masonry:
 1. Adjustable(two piece) type, either ladder or truss design, with one side rod at each face shell of backing wythe and with separate adjustable ties with pintle-and-eye connections having a maximum horizontal play of 1/16 inch (1.5mm) and maximum vertical adjustment of 1-1/4 inches . Size ties to extend at least halfway through facing wythe but at least 5/8-inc cover on outside face,
 2. Basis of Design Product: Subject to compliance with requirements, provide Hohmann & Barnard Inc Model #270-2X Ladder-eye Lox-All adjustable Joint Reinforcement with 2X Hook, or Equal as approved by Architect in Writing before bid.
 - a. Where Discrepancies occur between the information contained in contract drawings and specification, submit discrepancies to the Architect in writing before the Bid.

2.6 TIES AND ANCHORS

- A. 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.
- B. Wire Ties, General: Unless otherwise indicated, size wire ties to extend at least halfway through veneer but with at least 5/8-inch cover on outside face. Outer ends of wires are bent 90 degrees and extend 2 inches parallel to face of veneer.
- C. Brick Veneer Anchor for Stud Back Up – Adjustable
1. Basis of Design Product: Subject to compliance with requirements, provide Hohmann & Barnard, Inc. Model HB-213-2X Adjustable Veneer Anchor with 2X HOOK, or equal as approved by the Architect in writing before the Bid.
 - a. Where discrepancies occur between the information contained in the Contract Documents and the Specification, submit discrepancies to the Architect in writing for clarification before the Bid.
 2. Backplate: 14 ga.
 3. Pintle: Length as desired.
 4. Finish: Hot-Dipped Galvanized.
- D. Individual Wire Ties: Rectangular units with closed ends and not less than 4 inches wide.
1. Z-shaped ties with ends bent 90 degrees to provide hooks not less than 2 inches long may be used for masonry constructed from solid units.
 2. Where wythes do not align, use adjustable ties with pintle-and-eye connections having a maximum adjustment of 1-1/4 inches.
 3. Wire: Fabricate from 3/16-inch- diameter, hot-dip galvanized steel wire.
- E. 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. Tie Section: Triangular-shaped wire tie, sized to extend within 1 inch of masonry face, made from 0.25-inch- diameter, hot-dip galvanized steel wire.
- F. Adjustable Anchors for Connecting to Concrete: Provide anchors that allow vertical or horizontal adjustment but resist tension and compression forces perpendicular to plane of wall.
1. Tie Section: Triangular-shaped wire tie, sized to extend within 1 inch of masonry face, made from 0.25-inch- diameter, hot-dip galvanized steel wire.
- G. Partition Top anchors: 0.105-inch- thick metal plate with 3/8-inch- diameter metal rod 6 inches long welded to plate and with closed-end plastic tube fitted over rod that allows rod to move in and out of tube. Fabricate from steel, hot-dip galvanized after fabrication.
- H. Rigid Anchors: Fabricate from steel bars 1-1/2 inches wide by 1/4 inch thick by 24 inches long, with ends turned up 2 inches or with cross pins unless otherwise indicated.
1. Corrosion Protection: Hot-dip galvanized to comply with ASTM A 153/A 153M.

2.7 MISCELLANEOUS ANCHORS

- A. Unit Type Inserts in Concrete: Cast-iron or malleable-iron wedge-type inserts.
- B. Dovetail Slots in Concrete: Furnish dovetail slots with filler strips, of slot size indicated, fabricated from 0.034-inch, galvanized steel sheet.
- C. Anchor Bolts: Headed steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers; hot-dip galvanized to comply with ASTM A 153/A 153M, Class C; of dimensions indicated.
- D. Post-installed Anchors: Torque-controlled expansion anchors or chemical anchors.
 - 1. Load Capacity: Capable of sustaining, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.
 - 2. Material for Interior Locations: Carbon-steel components zinc plated to comply with ASTM B 633 or ASTM F 1941, Class Fe/Zn 5 unless otherwise indicated.
 - 3. Material for Exterior Locations and Where Stainless Steel Is Indicated: Alloy Group 2 stainless-steel bolts, ASTM F 593, and nuts, ASTM F 594.

2.8 EMBEDDED THRU WALL FLASHING MATERIALS

- A. Flexible Flashing: Use the following unless otherwise indicated:
 - 1. Product standard of quality:
 - a. York Manufacturing, Inc.; Multi-Flash SS
 - b. Illinois Products, Inc.; IPCO Stainless Steel Fabric Flashing
 - c. Prosoco, Inc.; R-Guard SS ThruWall
 - d. STS Coatings, Inc.; Wall Guardian Stainless Steel TWF
 - e. TK Products, Inc.; TK TWF
- B. Characteristics:
 - 1. Type: Stainless steel core with polymer fabric laminated to the bottom stainless-steel face with non-asphalt adhesive. The top face (exposed side) must not be covered with a polymer fabric.
 - 2. Stainless steel: type 304, ASTM A240. Domestically sourced per DFARS 252.225-7008 and/or DFARS 252.225-7009.
 - 3. Fabric: polymer fabric; laminated back face (non-exposed side) of stainless-steel core.
 - 4. Size: Manufacturer's standard width rolls, flashing to be a minimum 4" above mortar net.
- C. Accessories:
 - 1. Mastic/sealant: Product standard of quality is York Manufacturing, Inc.; UniverSeal US100.
 - a. Characteristics:
 - 1) Type: One part 100% solids, solvent-free formulated silyl-terminated polyether (STPE), ASTM C920-11, Type S, Grade NS, Class 50.
 - 2. Outside corner and inside corner material; manufacturer's standard available units using:
 - a. Stainless steel: 26 gauge stainless steel.

3. End dam: Product may be folded in line with the flashing material or utilize preformed end dams by manufacturer using:
 - a. Stainless steel: 26 gauge stainless steel
4. Splice material: Product standard of quality is York304 SS by York. Manufacturer's standard self-adhered metal material; material matching system material or use Multi-Flash Stainless Steel 6" lap piece and polyether sealant as a splice.
5. Termination bar: Product standard of quality is York T-96 termination bar. Manufacturer's standard 1" composite material bar or a 1" 26 gauge stainless steel termination bar with sealant lip.
6. Weep vent protection: Product standard of quality is York's Weep Armor. Geotextile drainage fabric at least 12" in height.
7. Repair and other materials/accessories: Manufacturer's standard.
8. Fasteners: Domestic manufactured fastener types and sizes recommended by flashing manufacturer for intended use.

D. Application: Unless otherwise indicated, use the following:

1. Where flashing is indicated to receive counterflashing, use metal flashing.
2. Where flashing is indicated to be turned down at or beyond the wall face, use metal flashing.
3. Where flashing is partly exposed and is indicated to terminate at the wall face, use metal flashing with a drip edge.
4. Where flashing is fully concealed, use flexible flashing.

E. Single-Wythe CMU Flashing System: System of CMU cell flashing pans and interlocking CMU web covers made from high-density polyethylene incorporating chemical stabilizers that prevent UV degradation. Cell flashing pans have integral weep spouts that are designed to be built into mortar bed joints and weep collected moisture to the exterior of CMU walls and that extend into the cell to prevent clogging with mortar.

1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Mortar Net USA, Ltd.; Blok-Flash.
 - b. Approved equal.

F. Adhesives, Primers, and Seam Tapes for Flashings: Flashing manufacturer's standard products or products recommended by flashing manufacturer for bonding flashing sheets to each other and to substrates.

2.9 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 neopreneurethane.
- 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, organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).

- D. Weep/Vent Products: Use the following unless otherwise indicated:
1. Mesh Weep/Vent: "CavClear" non-woven recycled polymer mesh flame-retarant binder and "M" notched bottom as manufactured by Archovations, Inc., Hudson, WI, or equal product of other manufacturer approved in advance by Architect. Color as selected from the full range of manufacturer's colors.
- E. Cavity Drainage Material: Free-draining mesh, made from polymer strands that will not degrade within the wall cavity.
1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Mortar Trap by Hohmann Barnard.
 - b. Mortar Net USA, Ltd.; Mortar Net.
 2. Provide one of the following configurations:
 - a. Strips, full-depth of cavity and 10 inches high, with dovetail shaped notches 7 inches deep that prevent clogging with mortar droppings.
- F. Reinforcing Bar Positioners: Wire units designed to fit into mortar bed joints spanning masonry unit cells and hold reinforcing bars in center of cells. Units are formed from 0.148-inch steel wire, hot-dip galvanized after fabrication. Provide units designed for number of bars indicated.
1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Dayton Superior Corporation, Dur-O-Wal Division; D/A 810, D/A 812 or D/A 817.
 - b. Heckmann Building Products Inc.; No. 376 Rebar Positioner.
 - c. Hohmann & Barnard, Inc.; #RB or #RB-Twin Rebar Positioner.
 - d. Wire-Bond; O-Ring or Double O-Ring Rebar Positioner.
- G. Control Joints: Premolded rubber Rapid Control Joint products as manufactured by Dur-O-Wal, Inc., or approved equal. Use "regular" flange type at non-exposed walls and No. 8 wide flange type at exposed areas. All units must be used with grooved type blocks.
- H. Premolded Joint Fillers: Premolded joint filler Number G-207-N black, as manufactured by Rubatex Corporation, Bedford, VA; or approved equal. Use for control joints in bond beam units.
- I. Compressible Filler: Compressible 3/8-inch thick closed cell neoprene material conforming to ASTM D1056 Grade 2A1, "Rapid Soft-Joint/Expansion Control" as manufactured by Dur-O-Wal, Inc.; or approved equal approved by Architect.

2.10 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.

2.11 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. 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, Property Specification. Provide the following types of mortar for applications stated unless another type is indicated or needed to provide required compressive strength of masonry.
 1. For masonry below grade or in contact with earth, use Type S.
 2. For reinforced masonry, use Type S.
 3. For exterior, above-grade, load-bearing and non-load-bearing walls and parapet walls; for interior load-bearing walls; for interior non-load-bearing partitions; and for other applications where another type is not indicated, use Type N.
 4. For interior non-load-bearing partitions, Type O may be used instead of Type N.
- D. Pigmented Mortar: Use colored cement product. Do not add pigments to colored cement products.
 1. Pigments shall not exceed 10 percent of portland cement by weight.
 2. Mix to match Architect's sample.
 3. Application: Use pigmented mortar for exposed mortar joints with the following units:
 - a. Face brick.
 - b. Limestone trim units.
- E. Colored-Aggregate Mortar: Produce required mortar color by using colored aggregates and natural color or white cement as necessary to produce required mortar color.
 1. Mix to match Architect's sample.
 2. Application: Use colored aggregate mortar for exposed mortar joints with the following units:
 - a. Face brick.
 - b. Limestone trim units.
- F. Grout for Unit Masonry: Comply with ASTM C 476.

1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with Table 1.15.1 in ACI 530.1/ASCE 6/TMS 602 for dimensions of grout spaces and pour height.
2. Proportion grout in accordance with ASTM C 476, Table 1 or paragraph 4.2.2 for specified 28-day compressive strength indicated, but not less than 3000 psi.
3. Provide grout with a slump of 10 to 11 inches as measured according to ASTM C 143/C 143M.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
 1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of work.
 2. Verify that foundations are within tolerances specified.
 3. Verify that reinforcing dowels are properly placed.
- B. Before installation, examine rough-in and built-in construction for piping systems to verify actual locations of piping connections.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. Thickness: Build cavity and composite walls and other masonry construction to full thickness shown. Build singlewythe walls to actual widths of masonry units, using units of widths indicated.
- B. Build chases and recesses to accommodate items specified in this and other Sections.
- C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to opening.
- D. 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.
- E. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures.
 1. Mix units from several pallets or cubes as they are placed.
- F. Wetting of Brick: Wet brick before laying if initial rate of absorption exceeds 30 g/30 sq. in. per minute when tested per ASTM C 67. Allow units to absorb water so they are damp but not wet at time of laying.

3.3 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 or minus 1/4 inch.
2. For location of elements in plan do not vary from that indicated by more than plus or minus 1/2 inch.
3. For location of elements in elevation do not vary from that indicated by more than plus or minus 1/4 inch in a story height or 1/2 inch 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, or 1/2 inch 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, 1/4 inch in 20 feet, or 1/2 inch maximum.
3. For vertical lines and surfaces do not vary from plumb by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2 inch 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, 1/4 inch in 20 feet, or 1/2 inch maximum.
5. For lines and surfaces do not vary from straight by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2 inch maximum.
6. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet, or 1/2 inch maximum.
7. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch except due to warpage of masonry units within tolerances specified for warpage of units.

C. Joints:

1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch.
2. For exposed bed joints, do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch.
3. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch or minus 1/4 inch.
4. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch. Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch. For exposed bed joints and head joints of stacked bond, do not vary from a straight line by more than 1/16 inch from one masonry unit to the next.

3.4 LAYING MASONRY WALLS

- #### A.
- Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

- B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in bond pattern indicated on Drawings; do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.
- C. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 4-inches. Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.
- D. Stopping and Resuming Work: Stop work by racking back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.
- E. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.
- F. Fill space between steel frames and masonry solidly with mortar unless otherwise indicated.
- G. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below and rod mortar or grout into core.
- H. Fill cores in hollow CMUs with grout 24 inches under bearing plates, beams, lintels, posts, and similar items unless otherwise indicated.
- I. Build non-load-bearing interior partitions full height of story to underside of solid floor or roof structure above unless otherwise indicated.
 - 1. Install compressible filler in joint between top of partition and underside of structure above.
 - 2. Fasten partition top anchors to structure above and build into top of partition. Grout cells of CMUs solidly around plastic tubes of anchors and push tubes down into grout to provide 1/2-inch clearance between end of anchor rod and end of tube. Space anchors 48 inches o.c. unless otherwise indicated.
 - 3. Wedge non-load-bearing partitions against structure above with small pieces of tile, slate, or metal. Fill joint with mortar after dead-load deflection of structure above approaches final position.
 - 4. At fire-rated partitions, treat joint between top of partition and underside of structure above to comply with Section 078446 "Fire-Resistive Joint Systems."

3.5 MORTAR BEDDING AND JOINTING

- A. Lay hollow brick and CMUs as follows:
 - 1. With face shells fully bedded in mortar and with head joints of depth equal to bed joints.
 - 2. With webs fully bedded in mortar in all courses of piers, columns, and pilasters.
 - 3. With webs fully bedded in mortar in grouted masonry, including starting course on footings.
 - 4. With entire units, including areas under cells, fully bedded in mortar 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.

3.6 COMPOSITE MASONRY

- A. Bond wythes of composite masonry together using one of the following methods:
 - 1. Individual Metal Ties: Provide ties as shown installed in horizontal joints, but not less than one metal tie for 2.67 sq. ft. of wall area spaced not to exceed 24 inches o.c. horizontally and 16 inches o.c. vertically. Stagger ties in alternate courses. Provide additional ties within 12 inches of openings and space not more than 36 inches apart around perimeter of openings. At intersecting and abutting walls, provide ties at no more than 24 inches o.c. vertically.
 - a. Where bed joints of wythes do not align, use adjustable (two-piece) type ties.
 - 2. Masonry Joint Reinforcement: Installed in horizontal mortar joints.
 - a. Where bed joints of both wythes align, use ladder-type reinforcement extending across both wythes.
 - b. Where bed joints of wythes do not align, use adjustable (two-piece) type reinforcement with continuous horizontal wire in facing wythe attached to ties.
 - 3. Header Bonding: Provide masonry unit headers extending not less than 3 inches into each wythe. Space headers not over 8 inches clear horizontally and 16 inches clear vertically.
- B. Bond wythes of composite masonry together using bonding system indicated on Drawings.
- C. Collar Joints: Solidly fill collar joints by parging face of first wythe that is laid and shoving units of other wythe into place.
- D. Corners: Provide interlocking masonry unit bond in each wythe and course at corners unless otherwise indicated.
 - 1. Provide continuity with masonry joint reinforcement at corners by using prefabricated L-shaped units as well as masonry bonding.
- E. Intersecting and Abutting Walls: Unless vertical expansion or control joints are shown at juncture, bond walls together as follows:
 - 1. Provide individual metal ties not more than 16 inches o.c.
 - 2. Provide continuity with masonry joint reinforcement by using prefabricated T-shaped units.
 - 3. Provide rigid metal anchors not more than 24 inches o.c. If used with hollow masonry units, embed ends in mortar-filled cores.

3.7 MASONRY JOINT REINFORCEMENT

- A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches.
 - 1. Space reinforcement not more than 16 inches o.c.
 - 2. Space reinforcement not more than 8 inches o.c. in foundation walls and parapet walls.
 - 3. Provide reinforcement not more than 8 inches above and below wall openings and extending 12 inches beyond openings in addition to continuous reinforcement.
- 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.
- E. Cut and bend reinforcing units as directed by manufacturer for continuity at corners, returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

3.8 ANCHORING MASONRY TO STRUCTURAL STEEL AND CONCRETE

- A. Anchor masonry to structural steel and concrete where masonry abuts or faces structural steel or concrete to comply with the following:
 - 1. Provide an open space not less than 1 inch wide between masonry and structural steel or concrete unless otherwise indicated. Keep open space free of mortar and other rigid materials.
 - 2. Anchor masonry with anchors embedded in masonry joints and attached to structure.
 - 3. Space anchors as indicated, but not more than 24 inches o.c. vertically and 36 inches o.c. horizontally.

3.9 CONTROL AND EXPANSION JOINTS

- A. General: Install control and expansion joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.
- B. Form control joints in concrete masonry using one of the following methods:
 - 1. Fit bond-breaker strips into hollow contour in ends of CMUs on one side of control joint. Fill resultant core with grout and rake out joints in exposed faces for application of sealant.
 - 2. Install preformed control-joint gaskets designed to fit standard sash block.
 - 3. Install interlocking units designed for control joints. Install bond-breaker strips at joint. Keep head joints free and clear of mortar or rake out joint for application of sealant.
 - 4. Install temporary foam-plastic filler in head joints and remove filler when unit masonry is complete for application of sealant.
- C. Form expansion joints in brick as follows:

1. Build flanges of metal expansion strips into masonry. Lap each joint 4 inches in direction of water flow. Seal joints below grade and at junctures with horizontal expansion joints if any.
 2. Build flanges of factory-fabricated, expansion-joint units into masonry.
 3. Build in compressible joint fillers where indicated.
 4. Form open joint full depth of brick wythe and of width indicated, but not less than 1/2 inch for installation of sealant and backer rod specified in Section 079200 "Joint Sealants."
- D. Provide horizontal, pressure-relieving joints by either leaving an air space or inserting a compressible filler of width required for installing sealant and backer rod specified in Section 079200 "Joint Sealants," but not less than 3/8 inch > .
1. Locate horizontal, pressure-relieving joints beneath shelf angles supporting masonry.

3.10 LINTELS

- A. Install steel lintels where indicated.
- B. Provide concrete lintels where shown and where openings of more than 12 inches for brick-size units and 24 inches for block-size units are shown without structural steel or other supporting lintels.
- C. Provide minimum bearing of 8 inches at each jamb unless otherwise indicated.

3.11 FLASHING, WEEP HOLES, CAVITY DRAINAGE, AND VENTS

- A. General: Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges, other obstructions to downward flow of water in wall, and where indicated. Install vents at shelf angles, ledges, and other obstructions to upward flow of air in cavities, and where indicated.
- B. Install flashing as per Drawings.
- C. Install weep holes in head joints in exterior wythes of first course of masonry immediately above embedded flashing and as follows:
 1. Use specified weep/vent products to form weep holes.
 2. Space weep holes 24 inches o.c. unless otherwise indicated.

3.12 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 other loads that may be placed on them during construction.

- B. Placing Reinforcement: Comply with requirements in ACI 530.1/ASCE 6/TMS 602.
- 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 ACI 530.1/ASCE 6/TMS 602 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 60 inches

3.13 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Owner 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 "International 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. 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.
- J. Prism Test: For each type of construction provided, according to ASTM C 1314 at 7 days and at 28 days.

3.14 PARGING

- A. Parge exterior faces of below-grade masonry walls, where indicated, in 2 uniform coats to a total thickness of 3/4 inch. Dampen wall before applying first coat and scarify first coat to ensure full bond to subsequent coat.
- B. Use a steel-trowel finish to produce a smooth, flat, dense surface with a maximum surface variation of 1/8 inch per foot. Form a wash at top of parging and a cove at bottom.
- C. Damp-cure parging for at least 24 hours and protect parging until cured.

3.15 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.
- B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.
- C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
 - 1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
 - 2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
 - 3. Protect adjacent stone and nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
 - 4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
 - 5. Clean brick by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
 - 6. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.
 - 7. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A applicable to type of stain on exposed surfaces.
 - 8. Clean stone trim to comply with stone supplier's written instructions.
 - 9. Clean limestone units to comply with recommendations in ILLI's "Indiana Limestone Handbook."

3.16 MASONRY WASTE DISPOSAL

- A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.

- B. Waste Disposal as Fill Material: Dispose of clean masonry waste, including excess or soil-contaminated sand, waste mortar, and broken masonry units, by crushing and mixing with fill material as fill is placed.
 - 1. Crush masonry waste to less than 4 inches in each dimension.
 - 2. Mix masonry waste with at least two parts of specified fill material for each part of masonry waste. Fill material is specified in Section 312000 "Earth Moving."
 - 3. Do not dispose of masonry waste as fill within 18 inches of finished grade.

- C. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above, and other masonry waste, and legally dispose of off Owner's property.

END OF SECTION 04.2000

SECTION 06.1053 - MISCELLANEOUS ROUGH CARPENTRY**PART 1 - GENERAL**

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

- 1. Wood blocking , cants, and nailers.
- 2. Wood furring.

- B. Related Requirements:

- 1. Section 061600 "Sheathing" for sheathing, subflooring, and underlayment.

1.3 DEFINITIONS

- A. Boards or Strips: Lumber of less than **2 inches nominal** size in least dimension.
- B. Dimension Lumber: Lumber of **2 inches nominal** or greater size but less than **5 inches nominal** size in least dimension.

1.4 ACTION SUBMITTALS

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

1.5 INFORMATIONAL SUBMITTALS

- A. Evaluation Reports: For the following, from ICC-ES:
 - 1. Preservative-treated wood.
 - 2. Fire-retardant-treated wood.
 - 3. Power-driven fasteners.
 - 4. Post-installed anchors.
 - 5. Metal framing anchors.

1.6 QUALITY ASSURANCE

- A. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant-treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

1.7 DELIVERY, STORAGE, AND HANDLING

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

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
 - 1. Factory mark each piece of lumber with grade stamp of grading agency.
 - 2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece or omit grade stamp and provide certificates of grade compliance issued by grading agency.
 - 3. Dress lumber, S4S, unless otherwise indicated.
- B. Maximum Moisture Content of Lumber: 15 percent unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. Preservative Treatment by Pressure Process: AWP A U1; Use Category UC2 for interior construction not in contact with ground, Use Category UC3b for exterior construction not in contact with ground, and Use Category UC4a for items in contact with ground.

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium. Do not use inorganic boron (SBX) for sill plates.
 2. For exposed items indicated to receive a stained or natural finish, chemical formulations shall not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or 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.
1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece or omit marking and provide certificates of treatment compliance issued by inspection agency.
- D. Application: Treat all miscellaneous carpentry unless otherwise indicated.

2.3 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Where fire-retardant-treated materials are indicated, materials shall comply with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.
- B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than **10.5 feet** beyond the centerline of the burners at any time during the test.
1. Treatment shall not promote corrosion of metal fasteners.
 2. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D2898. Use for exterior locations and where indicated.
 3. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D3201 at 92 percent relative humidity. Use where exterior type is not indicated.
 4. Design Value Adjustment Factors: Treated lumber shall be tested according to ASTM D5664, and design value adjustment factors shall be calculated according to ASTM D6841. For enclosed roof framing, framing in attic spaces, and where high-temperature fire-retardant treatment is indicated, provide material with adjustment factors of not less than 0.85 modulus of elasticity and 0.75 for extreme fiber in bending for Project's climatological zone.
- C. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Kiln-dry 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.

1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece or omit marking and provide certificates of treatment compliance issued by inspection agency.
- E. For exposed items indicated to receive a stained or natural finish, chemical formulations shall not bleed through, contain colorants, or otherwise adversely affect finishes.
- F. Application: Treat all miscellaneous carpentry unless otherwise indicated.

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. Cants.
- B. Dimension Lumber Items: Construction or No. 2 grade lumber of any of the following species:
 1. Mixed southern pine or southern pine; SPIB.
 2. Western woods; WCLIB or WWPA.
 3. Northern species; NLGA.
 4. Eastern softwoods; NeLMA.
- C. Concealed Boards: 15 percent maximum moisture content of 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.
- D. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.
- E. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.
- F. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

2.5 PLYWOOD BACKING PANELS

- A. Equipment Backing Panels: Plywood, DOC PS 1, Exposure 1, C-D Plugged, fire-retardant treated, in thickness indicated or, if not indicated, not less than **1/2-inch** nominal thickness.

2.6 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
 - 1. Where carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A153/A153M .
- B. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

2.7 MISCELLANEOUS MATERIALS

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 carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry accurately to other construction. Locate furring, nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- C. Install plywood backing panels by fastening to studs; coordinate locations with utilities requiring backing panels. Install fire-retardant-treated plywood backing panels with classification marking of testing agency exposed to view.
- D. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.
- E. Do not splice structural members between supports unless otherwise indicated.
- F. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
 - 1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than **16 inches** o.c.
- G. Provide fire blocking in furred spaces, stud spaces, and other concealed cavities as indicated and as follows:
 - 1. Fire block furred spaces of walls, at each floor level, at ceiling, and at not more than **96 inches** o.c. with solid wood blocking or noncombustible materials accurately fitted to close furred spaces.

2. Fire block concealed spaces of wood-framed walls and partitions at each floor level, at ceiling line of top story, and at not more than **96 inches** o.c. Where fire blocking is not inherent in framing system used, provide closely fitted solid wood blocks of same width as framing members and **2-inch nominal** thickness.
 3. Fire block concealed spaces between floor sleepers with same material as sleepers to limit concealed spaces to not more than **100 sq. ft.** and to solidly fill space below partitions.
 4. Fire block concealed spaces behind combustible cornices and exterior trim at not more than **20 feet** o.c.
- H. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- I. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
1. Use inorganic boron for items that are continuously protected from liquid water.
 2. Use copper naphthenate for items not continuously protected from liquid water.
- J. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- K. Securely attach 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.
 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.
- L. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.
- 3.2 INSTALLATION OF WOOD BLOCKING AND NAILER
- A. Install where indicated and where required for screeding or attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.
- C. Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than **1-1/2 inches** wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.

3.3 PROTECTION

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

END OF SECTION 06.1053

SECTION 08.1113 - HOLLOW METAL DOORS AND FRAMES**PART 1 - GENERAL**

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Standard and custom hollow metal doors and frames.
2. Louvers installed in hollow metal doors.

B. Related Sections:

1. Division 04 Section "Unit Masonry" for embedding anchors for hollow metal work into masonry construction.
2. Division 08 Section "Glazing" for glass view panels in hollow metal doors.
3. Division 08 Section "Door Hardware".
4. Division 09 Sections "Exterior Painting" and "Interior Painting" for field painting hollow metal doors and frames.

C. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI/SDI A250.8 - Recommended Specifications for Standard Steel Doors and Frames.
2. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames, Frames Anchors and Hardware Reinforcing.
3. ANSI/SDI A250.6 - Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames.
4. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.
5. ANSI/SDI A250.11 - Recommended Erection Instructions for Steel Frames.
6. ASTM A1008 - Standard Specification for Steel Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
7. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
8. ASTM A924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
9. ASTM C 1363 - Standard Test Method for Thermal Performance of Building Assemblies by Means of a Hot Box Apparatus.
10. ANSI/BHMA A156.115 - Hardware Preparation in Steel Doors and Frames.
11. ANSI/SDI 122 - Installation and Troubleshooting Guide for Standard Steel Doors and Frames.
12. ANSI/NFPA 80 - Standard for Fire Doors and Fire Windows; National Fire Protection Association.

13. ANSI/NFPA 105: Standard for the Installation of Smoke Door Assemblies.
14. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; National Fire Protection Association.
15. UL 10C - Positive Pressure Fire Tests of Door Assemblies.
16. UL 1784 - Standard for Air Leakage Tests of Door Assemblies.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, core descriptions, hardware reinforcements, profiles, anchors, fire-resistance rating, and finishes.
- B. Door hardware supplier is to furnish templates, template reference number and/or physical hardware to the steel door and frame supplier in order to prepare the doors and frames to receive the finish hardware items.
- C. Shop Drawings: Include the following:
 1. Elevations of each door design.
 2. Details of doors, including vertical and horizontal edge details and metal thicknesses.
 3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
 4. Locations of reinforcement and preparations for hardware.
 5. Details of anchorages, joints, field splices, and connections.
 6. Details of accessories.
 7. Details of moldings, removable stops, and glazing.
 8. Details of conduit and preparations for power, signal, and control systems.
- D. Samples for Verification:
 1. Samples are only required by request of the architect and for manufacturers that are not current members of the Steel Door Institute.

1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain hollow metal doors and frames through one source from a single manufacturer wherever possible.
- B. Quality Standard: In addition to requirements specified, comply with ANSI/SDI A250.8, latest edition, "Recommended Specifications for Standard Steel Doors and Frames".
- C. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to UL10C (neutral pressure at 40" above sill) or UL 10C.
 1. Oversize Fire-Rated Door Assemblies Construction: For units exceeding sizes of tested assemblies, attach construction label certifying doors are built to standard construction requirements for tested and labeled fire rated door assemblies except for size.

2. Temperature-Rise Limit: Where indicated and at vertical exit enclosures (stairwell openings) and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire-test exposure.
3. Smoke Control Door Assemblies: Comply with NFPA 105.
 - a. Smoke "S" Label: Doors to bear "S" label, and include smoke and draft control gasketing applied to frame and on meeting stiles of pair doors.
- D. Fire-Rated, Borrowed-Light Frame Assemblies: Assemblies complying with NFPA 80 that are listed and labeled, by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 257. Provide labeled glazing material.
- E. Pre-Submittal Conference: Conduct conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier, Installer, and Contractor to review proper methods and procedures for installing hollow metal doors and frames and to verify installation of electrical knockout boxes and conduit at frames with electrified or access control hardware.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver hollow metal work palletized, wrapped, or crated to provide protection during transit and Project site storage. Do not use non-vented plastic.
- B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- C. Store hollow metal work under cover at Project site. Place in stacks of five units maximum in a vertical position with heads up, spaced by blocking, on minimum 4-inch high wood blocking. Do not store in a manner that traps excess humidity.
 1. Provide minimum 1/4-inch space between each stacked door to permit air circulation. Door and frames to be stacked in a vertical upright position.

1.6 PROJECT CONDITIONS

- A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

1.7 COORDINATION

- A. Coordinate installation of anchorages for hollow metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

1.8 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.

- B. Warranty includes installation and finishing that may be required due to repair or replacement of defective doors.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. CECO Door Products (C).
 2. Curries Company (CU).
 3. Steelcraft (S).

2.2 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
- B. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.
- C. Frame Anchors: ASTM A 653/A 653M, Commercial Steel (CS), Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.

2.3 HOLLOW METAL DOORS

- A. General: Provide 1-3/4 inch doors of design indicated, not less than thickness indicated; fabricated with smooth surfaces, without visible joints or seams on exposed faces unless otherwise indicated. Comply with ANSI/SDI A250.8 and ANSI/NAAMM HMMA 867.
- B. Exterior Doors: Face sheets fabricated of commercial quality hot-dipped zinc coated steel that complies with ASTM A 653/A 653M, Coating Designation A60. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:
 1. Design: Flush panel.
 2. Core Construction: Manufacturer's standard polystyrene. Where indicated, provide doors fabricated as thermal-rated assemblies with a minimum R-value of 2.8 or better.
 3. Level/Model: Level 3 and Physical Performance Level A (Extra Heavy Duty), Minimum 16 gauge (0.053-inch - 1.3-mm) thick steel, Model 2.
 4. Top and Bottom Edges: Reinforce tops and bottoms of doors with a continuous steel channel not less than 16 gauge, extending the full width of the door and welded to the face sheet. Doors with an inverted top channel to include a steel closure channel, screw attached, with the web of the channel flush with the face sheets of the door. Plastic or composite channel fillers are not acceptable.
 5. Hinge Reinforcement: Minimum 7 gauge (3/16") plate 1-1/4" x 9" or minimum 14 gauge continuous channel with pierced holes, drilled and tapped.

6. Hardware Reinforcements: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.
- C. Interior Doors: Face sheets fabricated of commercial quality hot-dipped zinc coated steel that complies with ASTM A 653/A 653M, Coating Designation A60. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:
1. Design: Flush panel.
 2. Core Construction: Manufacturer's standard kraft-paper honeycomb, or one-piece polystyrene core, securely bonded to both faces.
 - a. Fire Door Core: As required to provide fire-protection and temperature-rise ratings indicated.
 3. Level/Model: Level 2 and Physical Performance Level B (Heavy Duty), Minimum 18 gauge (0.042-inch - 1.0-mm) thick steel, Model 2.
 4. Top and Bottom Edges: Reinforce tops and bottoms of doors with a continuous steel channel not less than 16 gauge, extending the full width of the door and welded to the face sheet.
 5. Hinge Reinforcement: Minimum 7 gauge (3/16") plate 1-1/4" x 9" or minimum 14 gauge continuous channel with pierced holes, drilled and tapped.
 6. Hardware Reinforcements: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.
- D. Manufacturers Basis of Design:
1. Curries Company (CU) - Polystyrene Core - 707 Series.
- 2.4 HOLLOW METAL FRAMES
- A. General: Comply with ANSI/SDI A250.8 and with details indicated for type and profile.
- B. Exterior Frames: Fabricated of hot-dipped zinc coated steel that complies with ASTM A 653/A 653M, Coating Designation A60.
1. Fabricate frames with mitered or coped corners. Profile as indicated on drawings.
 2. Frames: Minimum 14 gauge (0.067-inch -1.7-mm) thick steel sheet.
 3. Manufacturers Basis of Design:
 - a. Curries Company (CU) – M Series.
- C. Interior Frames: Fabricated of hot-dipped zinc coated steel that complies with ASTM A 653/A 653M, Coating Designation A60.
1. Fabricate frames with mitered or coped corners. Profile as indicated on drawings.
 2. Frames: Minimum 16 gauge (0.053-inch -1.3-mm) thick steel sheet.
 3. Manufacturers Basis of Design:
 - a. Curries Company (CU) - M Series.

- D. Fire rated frames: Fabricate frames in accordance with NFPA 80, listed and labeled by a qualified testing agency, for fire-protection ratings indicated.
- E. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 Table 4 with reinforcement plates from same material as frames.

2.5 FRAME ANCHORS

- A. Jamb Anchors:
 - 1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, formed from A60 metallic coated material, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.
 - 2. Stud Wall Type: Designed to engage stud and not less than 0.042 inch thick.
- B. Floor Anchors: Floor anchors to be provided at each jamb, formed from A60 metallic coated material, not less than 0.042 inches thick.
- C. Mortar Guards: Formed from same material as frames, not less than 0.016 inches thick.

2.6 LIGHT OPENINGS AND GLAZING

- A. Stops and Moldings: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted or mitered hairline joints at fabricator's shop. Fixed and removable stops to allow multiple glazed lites each to be removed independently. Coordinate frame rabbet widths between fixed and removable stops with the type of glazing and installation indicated.
- B. Moldings for Glazed Lites in Doors and Loose Stops for Glazed Lites in Frames: Minimum 20 gauge thick, fabricated from same material as door face sheet in which they are installed.
- C. Fixed Frame Moldings: Formed integral with hollow metal frames, a minimum of 5/8 inch (16 mm) high unless otherwise indicated. Provide fixed frame moldings and stops on outside of exterior and on secure side of interior doors and frames.
- D. Preformed Metal Frames for Light Openings: Manufacturer's standard frame formed of 0.048-inch-thick, cold rolled steel sheet; with baked enamel or powder coated finish; and approved for use in doors of fire protection rating indicated. Match pre-finished door paint color where applicable.

2.7 ACCESSORIES

- A. Mullions and Transom Bars: Join to adjacent members by welding or rigid mechanical anchors.
- B. Grout Guards: Formed from same material as frames, not less than 0.016 inches thick.

2.8 FABRICATION

- A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and

assemble units in manufacturer's plant. When shipping limitations so dictate, frames for large openings are to be fabricated in sections for splicing or splining in the field by others.

- B. Tolerances: Fabricate hollow metal work to tolerances indicated in ANSI/SDI A250.8.
- C. Hollow Metal Doors:
1. Exterior Doors: Provide optional weep-hole openings in bottom of exterior doors to permit moisture to escape where specified.
 2. Glazed Lites: Factory cut openings in doors with applied trim or kits to fit. Factory install glazing where indicated.
- D. Hollow Metal Frames:
1. Shipping Limitations: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
 2. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.
 - a. Welded frames are to be provided with two steel spreaders temporarily attached to the bottom of both jambs to serve as a brace during shipping and handling. Spreader bars are for bracing only and are not to be used to size the frame opening.
 3. Continuous Hinge Reinforcement: Provide welded continuous 12 gauge straps for continuous hinges specified in hardware sets in Division 08 Section "Door Hardware".
 4. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated for removable stops, provide security screws at exterior locations.
 5. Mortar Guards: Provide guard boxes at back of hardware mortises in frames at all hinges and strike preps regardless of grouting requirements.
 6. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
 7. Jamb Anchors: Provide number and spacing of anchors as follows:
 - a. Masonry Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
 - 1) Two anchors per jamb up to 60 inches high.
 - 2) Three anchors per jamb from 60 to 90 inches high.
 - 3) Four anchors per jamb from 90 to 120 inches high.
 - 4) Four anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 120 inches high.
 - b. Stud Wall Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
 - 1) Three anchors per jamb up to 60 inches high.
 - 2) Four anchors per jamb from 60 to 90 inches high.
 - 3) Five anchors per jamb from 90 to 96 inches high.

- 4) Five anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.
 - 5) Two anchors per head for frames above 42 inches wide and mounted in metal stud partitions.
 8. Door Silencers: Except on weatherstripped or gasketed doors, drill stops to receive door silencers. Silencers to be supplied by frame manufacturer regardless if specified in Division 08 Section "Door Hardware".
 9. Bituminous Coating: Where frames are fully grouted with an approved Portland Cement based grout or mortar, coat inside of frame throat with a water based bituminous or asphaltic emulsion coating to a minimum thickness of 3 mils DFT, tested in accordance with UL 10C and applied to the frame under a 3rd party independent follow-up service procedure.
- E. Hardware Preparation: Factory prepare hollow metal work to receive template mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified in Division 08 Section "Door Hardware."
1. Locate hardware as indicated, or if not indicated, according to ANSI/SDI A250.8.
 2. Reinforce doors and frames to receive non-template, mortised and surface mounted door hardware.
 3. Comply with applicable requirements in ANSI/SDI A250.6 and ANSI/DHI A115 Series specifications for preparation of hollow metal work for hardware.
 4. Coordinate locations of conduit and wiring boxes for electrical connections with Division 26 Sections.

2.9 STEEL FINISHES

- A. Prime Finishes: Doors and frames to be cleaned, and chemically treated to insure maximum finish paint adhesion. Surfaces of the door and frame exposed to view to receive a factory applied coat of rust inhibiting shop primer.
1. Shop Primer: Manufacturer's standard, fast-curing, lead and chromate free primer complying with ANSI/SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; and compatible with substrate and field-applied coatings.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. General Contractor to verify the accuracy of dimensions given to the steel door and frame manufacturer for existing openings or existing frames (strike height, hinge spacing, hinge back set, etc.).
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Remove welded in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.
- B. Prior to installation, adjust and securely brace welded hollow metal frames for square, level, twist, and plumb condition.
- C. Tolerances shall comply with SDI-117 "Manufacturing Tolerances Standard Steel Doors and Frames."
- D. Drill and tap doors and frames to receive non-template, mortised, and surface-mounted door hardware.

3.3 INSTALLATION

- A. General: Install hollow metal work plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.
- B. Hollow Metal Frames: Install hollow metal frames of size and profile indicated. Comply with ANSI/SDI A250.11 and NFPA 80 at fire rated openings.
 - 1. Set frames accurately in position, plumbed, leveled, aligned, and braced securely until permanent anchors are set. After wall construction is complete and frames properly set and secured, remove temporary braces, leaving surfaces smooth and undamaged. Shim as necessary to comply with installation tolerances.
 - 2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with post-installed expansion anchors.
 - 3. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with mortar.
 - 4. Grout Requirements: Do not grout head of frames unless reinforcing has been installed in head of frame. Do not grout vertical or horizontal closed mullion members.
- C. Hollow Metal Doors: Fit hollow metal doors accurately in frames, within clearances specified below. Shim as necessary.
 - 1. Non-Fire-Rated Standard Steel Doors:
 - a. Jamb and Head: 1/8 inch plus or minus 1/16 inch.
 - b. Between Edges of Pairs of Doors: 1/8 inch plus or minus 1/16 inch.
 - c. Between Bottom of Door and Top of Threshold: Maximum 3/8 inch.
 - d. Between Bottom of Door and Top of Finish Floor (No Threshold): Maximum 3/4 inch.
 - 2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.
- D. Field Glazing: Comply with installation requirements in Division 08 Section "Glazing" and with hollow metal manufacturer's written instructions.

3.4 ADJUSTING AND CLEANING

- A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.
- B. Remove grout and other bonding material from hollow metal work immediately after installation.
- C. Prime-Coat and Painted Finish Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat, or painted finishes, and apply touchup of compatible air drying, rust-inhibitive primer, zinc rich primer (exterior and galvanized openings) or finish paint.

END OF SECTION 08.1113

SECTION 08.3100 – ACCESS DOORS AND PANELS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Gasketed access doors

1.2 RELATED SECTIONS

- A. Section 05 50 00 - Metal Fabrications.
- B. Section 06 10 00 - Rough Carpentry.
- C. Section 09 24 13 - Adobe Finish Portland Cement Plaster.
- D. Section 09 23 13 - Acoustical Gypsum Plastering Gypsum Plaster.
- E. Section 09 90 00 - Painting and Coating.

1.3 REFERENCES

- A. American National Standards Institute (ANSI):
 - 1. ANSI-UL 10B - Standard for Fire Tests of Door Assemblies.
- B. Underwriters Laboratories (UL).
- C. Underwriters Laboratories Canada (ULc).

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data:
 - 1. Manufacturer's data sheets on each product to be used.
 - 2. Preparation instructions and recommendations.
 - 3. Storage and handling requirements and recommendations.
 - 4. Typical installation methods.
- C. Verification Samples: Two representative units of each type, size, pattern, and color.
- D. Shop Drawings: Include details of materials, construction, and finish. Include relationship with adjacent construction.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum five years documented experience.
- B. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
- C. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.
- D. Mock-Up: Construct a mock-up with actual materials in sufficient time for Architect's review and to not delay construction progress. Locate mock-up as acceptable to Architect and provide temporary foundations and support.
 - 1. Intent of mock-up is to demonstrate quality of workmanship and visual appearance.
 - 2. If mock-up is not acceptable, rebuild mock-up until satisfactory results are achieved.
 - 3. Retain mock-up during construction as a standard for comparison with completed work.
 - 4. Do not alter or remove mock-up until work is completed or removal is authorized.

1.6 PRE-INSTALLATION CONFERENCE

- A. Convene a conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Contractor and trades involved. Agenda shall include schedule, responsibilities, critical path items and approvals.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
- B. Protect from damage due to weather, excessive temperature, and construction operations.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.9 WARRANTY

- A. Manufacturer's standard limited warranty unless indicated otherwise.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. ELMDOR/STONEMAN: Morris Group International
- B. Substitutions: Substitutions to be submitted to architect for review

2.2 ACCESS DOORS

- A. Elmdoor Access Doors: GD Series
 - 1. AKL – Allen Key Latch
 - 2. CL – Cylinder Lock (one per door)
 - 3. CLD – Cylinder Lock with Dust Shutter (one per door)
 - 4. SS – Stainless Steel Construction (Type 304 No. 4 Stain Finish)
- B. Door and Frame
 - 1. Fabricated from 18 gage, galvanized steel
 - a. White prime coat finish.
- C. Gasket
 - 1. Material consists of 1/8" x 3/8" oil-resistant, fire-retardent blended Buna-N Foam.
- D. Frame
 - 1. Four-piece construction 1" wide and provides perfect concealment of the rough wall opening. Wall frame is provided with 1/4" mounting holes for fastening within the furred spaces allowing faster installation and fixing maximum clearance.
- E. Hardware:
 - 1. Concealed pivoting rod hinge
 - 2. Latch
 - a. Screwdriver operated
 - 3. Finish:
 - a. White prime coat

F. Nominal Door (Size W x H)

INCHES	WALL OPENING	LATCHES	LBS.
GD 8" x 8"	8-1/2" x 8-1/2"	1	3.5
GD 12" x 12"	12-1/2" x 12-1/2"	1	6
GD 16" x 16"	16-1/2" x 16-1/2"	2	9
GD 18" x 18"	18-1/2" x 18-1/2"	2	10.5
GD 24" x 24"	24-1/2" x 24-1/2"	2	16
GD 24" x 36"	24-1/2" x 36-1/2"	2	22

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly constructed and prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding

3.2 PREPARATION

- A. Do not begin installation until substrates have been properly constructed and prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions, approved submittals, and in proper relationship with adjacent construction.

3.4 FIELD QUALITY CONTROL

- A. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.
- B. Manufacturer's Services: Coordinate manufacturer's services in accordance with appropriate sections in Division 01.

3.5 CLEANING AND PROTECTION

- A. Clean products in accordance with the manufacturer's recommendations.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 08.3100

SECTION 087100 – DOOR HARDWARE AND SCHEDULE**PART 1 - GENERAL**

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes commercial door hardware for the following:
 - 1. Swinging doors.
- B. Door hardware includes, but is not necessarily limited to, the following:
 - 1. Mechanical door hardware.
 - 2. Electromechanical door hardware.
 - 3. Cylinders specified for doors in other sections.
- C. Related Sections:
 - 1. Division 08 Section "Hollow Metal Doors and Frames".
- D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
 - 1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
 - 2. ICC/IBC - International Building Code.
 - 3. NFPA 70 - National Electrical Code.
 - 4. NFPA 80 - Fire Doors and Windows.
 - 5. NFPA 101 - Life Safety Code.
 - 6. NFPA 105 - Installation of Smoke Door Assemblies.
 - 7. State Building Codes, Local Amendments.
- E. Standards: All hardware specified herein shall comply with the following industry standards as applicable. Any undated reference to a standard shall be interpreted as referring to the latest edition of that standard:
 - 1. ANSI/BHMA Certified Product Standards - A156 Series.
 - 2. UL10C – Positive Pressure Fire Tests of Door Assemblies.
 - 3. CAN/ULC-S104 – Standard Method for Fire Tests of Door Assemblies.
 - 4. ANSI/UL 294 – Access Control System Units.
 - 5. ULC-S319 - Electronic Access Control Systems.

6. ULC-60839-11-1, Alarm and Electronic Security Systems - Part 11-1: Electronic Access Control Systems - System and Components Requirements.
7. CAN-ULC-S132 -- Standard Method of Tests for Emergency Exit and Emergency Fire Exit Hardware.
8. CAN-ULC-S533 - Egress Door Securing and Releasing Devices.
9. UL 305 – Panic Hardware.
10. ULC-S132, Emergency Exit and Emergency Fire Exit Hardware.
11. ULC-S533 – Egress Door Securing and Releasing Devices.
12. ANSI/UL 437- Key Locks.
13. ULC-S328, - Burglary Resistant Key Locks.

1.3 SUBMITTALS

- A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.
- B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
 2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
 3. Content: Include the following information:
 - a. Type, style, function, size, label, hand, and finish of each door hardware item.
 - b. Manufacturer of each item.
 - c. Fastenings and other pertinent information.
 - d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 - e. Explanation of abbreviations, symbols, and codes contained in schedule.
 - f. Mounting locations for door hardware.
 - g. Door and frame sizes and materials.
 - h. Warranty information for each product.
 4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop

Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

- C. Shop Drawings: Details of electrified access control hardware indicating the following:
1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:
 - a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
 - b. Complete (risers, point-to-point) access control system block wiring diagrams.
 - c. Wiring instructions for each electronic component scheduled herein.
 2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.
- D. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.
- E. Informational Submittals:
1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.
- F. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.

1.4 QUALITY ASSURANCE

- A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.
- B. Certified Products: Where specified, products must maintain a current listing in the Builders Hardware Manufacturers Association (BHMA) Certified Products Directory (CPD).

- C. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- D. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.
- E. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.
1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
 2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.
- F. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.
- G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:
1. Function of building, purpose of each area and degree of security required.
 2. Plans for existing and future key system expansion.
 3. Requirements for key control storage and software.
 4. Installation of permanent keys, cylinder cores and software.
 5. Address and requirements for delivery of keys.
- H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.
1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
 2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
 3. Review sequence of operation narratives for each unique access controlled opening.

4. Review and finalize construction schedule and verify availability of materials.
5. Review the required inspecting, testing, commissioning, and demonstration procedures

- I. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.
- B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
- C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.6 COORDINATION

- A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.
- B. Door Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.
- C. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.7 WARRANTY

- A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within

specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:

1. Structural failures including excessive deflection, cracking, or breakage.
 2. Faulty operation of the hardware.
 3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 4. Electrical component defects and failures within the systems operation.
- C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.
- D. Special Warranty Periods:
1. Ten years for mortise locks and latches.
 2. Five years for exit hardware.
 3. Twenty five years for manual overhead door closer bodies.
 4. Five years for motorized electric latch retraction exit devices.
 5. Two years for electromechanical door hardware.

1.8 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

- A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.
- B. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:
1. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.
- C. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 HANGING DEVICES

- A. Hinges: ANSI/BHMA A156.1 certified butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.
1. Quantity: Provide the following hinge quantity:
 - a. Two Hinges: For doors with heights up to 60 inches.
 - b. Three Hinges: For doors with heights 61 to 90 inches.
 - c. Four Hinges: For doors with heights 91 to 120 inches.
 - d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.
 2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
 - a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
 - b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.
 3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:
 - a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
 - b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.
 4. Hinge Options: Comply with the following:
 - a. Non-removable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.
 5. Manufacturers:
 - a. Basis of Design: McKinney Products; Kelley Bros (MK)
 - b. Bommer Industries (BO).
 - c. Hager Companies (HA).

2.3 DOOR OPERATING TRIM

- A. Flush Bolts and Surface Bolts: ANSI/BHMA A156.3 and A156.16, Grade 1, certified.
1. Flush bolts to be furnished with top rod of sufficient length to allow bolt retraction device location approximately six feet from the floor.
 2. Furnish dust proof strikes for bottom bolts.
 3. Surface bolts to be minimum 8" in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable.

4. Provide related accessories (mounting brackets, strikes, coordinators, etc.) as required for appropriate installation and operation.
5. Manufacturers:
 - a. Basis of Design: Rockwood Products; Kelley Bros (RO)
 - b. Door Controls International (DC).
 - c. Trimco (TC).

2.4 CYLINDERS AND KEYING

- A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.
- B. Source Limitations: Obtain each type of keyed cylinder and keys from the same source manufacturer as locksets and exit devices, unless otherwise indicated.
 1. Manufacturers:
 - a. INTERIOR:
 - 1) Basis of Design: Corbin Russwin Hardware; Kelley Bros
- C. Cylinders: Original manufacturer cylinders complying with the following:
 1. Mortise Type: Threaded cylinders with rings and cams to suit hardware application.
 2. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
 3. Bored-Lock Type: Cylinders with tailpieces to suit locks.
 4. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
 5. Keyway: Manufacturer's Standard.
- D. Keying System: Each type of lock and cylinders to be factory keyed.
 1. Supplier shall conduct a "Keying Conference" to define and document keying system instructions and requirements.
 2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
 3. Existing System: Field verify and key cylinders to match Owner's existing system.
- E. Key Quantity: Coordinate with owner.
- F. Construction Keying: Provide construction master keyed cylinders.
- G. Key Registration List (Bitting List):

1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
2. Provide transcript list in writing or electronic file as directed by the Owner.

2.5 LOCK AND LATCH STRIKES

- A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:
1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
 2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
 3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
 4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.
- B. Standards: Comply with the following:
1. Strikes for Mortise Locks and Latches: BHMA A156.13.
 2. Strikes for Bored Locks and Latches: BHMA A156.2.
 3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
 4. Dustproof Strikes: BHMA A156.16.

2.6 DOOR CLOSERS

- A. All door closers specified herein shall meet or exceed the following criteria:
1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers.
 2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
 3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the Americans with Disabilities Act, provide units complying with ANSI ICC/A117.1.
 4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
 5. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.

6. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.
- B. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard.
1. Manufacturers:
 - a. Basis of Design: Norton Door Controls (NO) – 7500 Series; Kelley Bros
 - b. Sargent Manufacturing (SA) – 351 Series.
 - c. Yale Commercial(YA) – 4400 Series.
- C. Door Protective Trim
1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.
 2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1" LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.
 3. Where plates are applied to fire rated doors with the top of the plate more than 16" above the bottom of the door, provide plates complying with NFPA 80. Consult manufacturer's catalog and template book for specific requirements for size and applications.
 4. Protection Plates: ANSI/BHMA A156.6 certified protection plates (kick, armor, or mop), fabricated from the following:
 - a. Stainless Steel: 300 grade, 050-inch thick.
 5. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.
 6. Manufacturers:
 - a. Basis of Design: Rockwood Products; Kelley Bros (RO).
 - b. Hiawatha, Inc. (HI).
 - c. Trimco (TC).

2.7 DOOR STOPS AND HOLDERS

- A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.
- B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 certified door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.
 - 1. Manufacturers:
 - a. Basis of Design: Rockwood Products; Kelley Bros (RO)
 - b. Hiawatha, Inc. (HI).
 - c. Trimco (TC).

2.8 ARCHITECTURAL SEALS

- A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.
- B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.
 - 1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.
- C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.
 - 1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NPFA 252, Standard Methods of Fire Tests of Door Assemblies.
- D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.
- E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- F. Manufacturers:
 - 1. National Guard Products (NG).
 - 2. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE).

3. Reese Enterprises, Inc. (RE).

2.9 FABRICATION

- A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.10 FINISHES

- A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.
- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware
- C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

- A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.
- B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

- A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.

1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.
- B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
 2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
 3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
 4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.
- C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
- D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."
- E. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

- A. Field Inspection (Punch Report): Reference Division 01 Sections "Closeout Procedures" and "Cash Allowances". Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.
1. Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.
 2. Submit documentation of incomplete items in the following formats:
 - a. PDF electronic file.
 - b. Electronic formatted file integrated with the Openings Studio™ door opening management software platform.

3.5 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.6 CLEANING AND PROTECTION

- A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.
- B. Clean adjacent surfaces soiled by door hardware installation.
- C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

- A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SETS

- A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.
 1. Quantities listed are for each pair of doors, or for each single door.
 2. The supplier is responsible for handling and sizing all products.
 3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.
 4. At existing openings with new hardware the supplier shall field inspect existing conditions prior to the submittal stage to verify the specified hardware will work as required. Provide alternate solutions and proposals as needed.
- B. Refer to Section 087100.01, Door Hardware Sets, for hardware sets.

Heading # 01

Qty Act	Qty Inact	Description		Finish	Mfgr	
1	0	Continuous Hinge	CFMxxSLF-HD1 x 2 @ TKS1267UCR21	C	Pemko	100
1	0	Deadlock, Mortise	DL4117 x CT6B	626	Corbin / Russwin	300
1	0	Core	CR8500	626	Corbin / Russwin	301
1	0	Push Plate	70F	US32D	Rockwood	400
1	0	Pull Plate	110 X 70C x Type 1HD	US32D	Rockwood	401
1	0	Closer	7500/P	689	Norton	500
1	0	Kickplate	K1050 x 4BE x CSK x 10" x 2" L.D.W.	US32D	Rockwood	600
1	0	Wall Stop	415	US26D	Rockwood	700
1	0	Sweep	315CN x L.A.R.	C	Pemko	804
1	0	Threshold	271A x MSES25SS x L.A.R.	A	Pemko	800
1	0	Gasketing	S88BL x L.A.R.	BL	Pemko	801

Note

DOOR:104, 105

Heading # 02

Qty Act	Qty Inact	Description		Finish	Mfgr	
1	0	Continuous Hinge	CFMxxSLF-HD1 x 2 @ TKS1267UCR21	C	Pemko	100
1	0	Cylindrical Lever	CLX3355 - NZD x CT6B	626	Corbin / Russwin	302
1	0	Core	CR8500	626	Corbin / Russwin	301
1	0	Closer	7500/P	689	Norton	500
1	0	Kickplate	K1050 x 4BE x CSK x 10" x 2" L.D.W.	US32D	Rockwood	600
1	0	Wall Stop	415	US26D	Rockwood	700
1	0	Sweep	315CN x L.A.R.	C	Pemko	804
1	0	Threshold	271A x MSES25SS x L.A.R.	A	Pemko	800
1	0	Gasketing	S88BL x L.A.R.	BL	Pemko	801

Note

DOOR: 101, 110

Heading # 03

Qty Act	Qty Inact	Description		Finish	Mfgr	
1	0	Continuous Hinge	CFMxxSLF-HD1 x 2 @ TKS1267UCR21	C	Pemko	100
1	0	Mortise Privacy	ML2020 - NSA x V21 x EMC	626	Corbin Russwin	304
1	0	Closer	7500/P	689	Norton	500
1	0	Kickplate	K1050 x 4BE x CSK x 10" x 2" L.D.W.	US32D	Rockwood	600
1	0	Wall Stop	415	US26D	Rockwood	700
1	0	Sweep	315CN x L.A.R.	C	Pemko	804
1	0	Threshold	271A x MSES25SS x L.A.R.	A	Pemko	800
1	0	Gasketing	S88BL x L.A.R.	BL	Pemko	801

Note

DOOR: 102, 103

END OF SECTION 087100

SECTION 08.8000 - GLAZING**PART 1 - GENERAL**

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Related Sections: Section(s) related to this section include:
 - 1. Section 08.1113 "Hollow Metal Doors and Frames"
- C. Section includes glazing for the following products and applications, including those specified in other Sections where glazing requirements are specified by reference to this Section:
 - 1. Hollow metal window frame

1.2 DEFINITIONS

- A. Glass Manufacturers: Firms that produce primary glass, fabricated glass, or both, as defined in referenced glazing publications.
- B. Glass Thicknesses: Indicated by thickness designations in millimeters according to ASTM C 1036.
- C. Interspace: Space between lites of an insulating-glass unit.

1.3 PERFORMANCE REQUIREMENTS

- A. General: Installed glazing systems shall withstand normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, or installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.
- B. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on glass framing members and glazing components.
 - 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

1.4 SUBMITTALS

- A. Product Data: For each glass product and glazing material indicated.
- B. Glass Samples: For each type of glass product; 12 inches square.

- C. Glazing Schedule: List glass types and thicknesses for each size opening and location. Use same designations indicated on Drawings.
- D. Qualification Data: For installers.
- E. Product Certificates: For glass and glazing products, from manufacturer.
- F. Warranties: Sample of special warranties.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications for Insulating-Glass Units with Sputter-Coated, Low-E Coatings: A qualified insulating-glass manufacturer who is approved by coated-glass manufacturer.
- B. Installer Qualifications: A qualified installer who employs glass installers for this Project who are certified under the National Glass Association's Certified Glass Installer Program.
- C. Source Limitations for Glass: Obtain from single source from single manufacturer for each glass type.
- D. Source Limitations for Glazing Accessories: Obtain from single source from single manufacturer for each product and installation method.
- E. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, unless more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards.
 - 1. GANA Publications: GANA's "Laminated Glazing Reference Manual" and GANA's "Glazing Manual."
 - 2. AAMA Publications: AAMA GDSG-1, "Glass Design for Sloped Glazing," and AAMA TIR-A7, "Sloped Glazing Guidelines."
 - 3. IGMA Publication for Sloped Glazing: IGMA TB-3001, "Guidelines for Sloped Glazing."
 - 4. IGMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."
- F. Safety Glazing Labeling: Where safety glazing labeling is indicated, permanently mark glazing with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.
- G. Fire-Protection-Rated Glazing Labeling: Permanently mark fire-protection-rated glazing with certification label of a testing agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's name, test standard, whether glazing is for use in fire doors or other openings, whether or not glazing passes hose-stream test, whether or not glazing has a temperature rise rating of 450 deg F, and the fire-resistance rating in minutes.
- H. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of IGCC.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect glazing materials according to manufacturer's written instructions. Prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.
- B. Comply with insulating-glass manufacturer's written recommendations for venting and sealing units to avoid hermetic seal ruptures due to altitude change.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not proceed with glazing when ambient and substrate temperature conditions are outside limits permitted by glazing material manufacturers and when glazing channel substrates are wet from rain, frost, condensation, or other causes.
 - 1. Do not install glazing sealants when ambient and substrate temperature conditions are outside limits permitted by sealant manufacturer or below 40 deg F.

1.8 WARRANTY

- A. Manufacturer's Special Warranty for Coated-Glass Products: Manufacturer's standard form in which coated-glass manufacturer agrees to replace coated-glass units that deteriorate within specified warranty period. Deterioration of coated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in coating.
 - 1. Warranty Period: 10 years from date of Substantial Completion.
- B. Manufacturer's Special Warranty on Laminated Glass: Manufacturer's standard form in which laminated-glass manufacturer agrees to replace laminated-glass units that deteriorate within specified warranty period. Deterioration of laminated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning laminated glass contrary to manufacturer's written instructions. Defects include edge separation, delamination materially obstructing vision through glass, and blemishes exceeding those allowed by referenced laminated-glass standard.
 - 1. Warranty Period: Five years from date of Substantial Completion.
- C. Manufacturer's Special Warranty on Insulating Glass: Manufacturer's standard form in which insulating-glass manufacturer agrees to replace insulating-glass units that deteriorate within specified warranty period. Deterioration of insulating glass is defined as failure of hermetic seal under normal use that is not attributed to glass breakage or to maintaining and cleaning insulating glass contrary to manufacturer's written instructions. Evidence of failure is the obstruction of vision by dust, moisture, or film on interior surfaces of glass.
 - 1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GLASS PRODUCTS, GENERAL

- A. Basis of Design: Vitro Architectural Glass Solarban 70
- B. Thickness: Where glass thickness is indicated, it is a minimum. Provide glass lites in thicknesses as needed to comply with requirements indicated.
 - 1. Minimum Glass Thickness for Exterior Lites: Not less than 6.0 mm.
- C. Strength: Where float glass is indicated, provide annealed float glass, Kind HS heat-treated float glass, or Kind FT heat-treated float glass as needed to comply with "Performance Requirements" Article. Where heat-strengthened glass is indicated, provide Kind HS heat-treated float glass or Kind FT heat-treated float glass as needed to comply with "Performance Requirements" Article. Where fully tempered glass is indicated, provide Kind FT heat-treated float glass.
- D. Thermal and Optical Performance Properties: Provide glass with performance properties specified, as indicated in manufacturer's published test data, based on procedures indicated below:
 - 1. For monolithic-glass lites, properties are based on units with lites 6.0 mm thick.
 - 2. For laminated-glass lites, properties are based on products of construction indicated.
 - 3. For insulating-glass units, properties are based on units of thickness indicated for overall unit and for each lite.
 - 4. U-Factors: Center-of-glazing values, according to NFRC 100 and based on LBL's WINDOW 5.2 computer program, expressed as Btu/sq. ft. x h x deg F.
 - 5. Solar Heat-Gain Coefficient and Visible Transmittance: Center-of-glazing values, according to NFRC 200 and based on LBL's WINDOW 5.2 computer program.
 - 6. Visible Reflectance: Center-of-glazing values, according to NFRC 300.

2.2 GLASS PRODUCTS

- A. Provide heat-strengthened glass at locations where recommended by the glass manufacturer.
- B. Provide safety glass as specified in locations where required by Consumer Product Safety Commission "Safety Standard for Architectural Glazing Material" (16 CFR 1201.)
- C. Provide Clear Laminated Insulating Low-E-Glass "LIG" on all windows, storefronts, curtainwalls and doors on first floor up to 10' above grade.
- D. TYPES
 - 1. Clear Tempered Glass: Indicated on Drawings as "CT"
 - a. glass; 1/4 inch thick, clear tempered glass;
 - b. Provide "Tempered Glass" by VITRO ARCHITECTURAL GLASS, Guardian; or equal products of alternatives of the quality necessary to meet the specifications
 - c. Provide where indicated on the Drawings
 - 2. Clear Insulating Low-E Glass: Indicated on Drawings as "IG"
 - a. consisting of an exterior side of 1/4" clear glass and an interior side of 1/4" clear glass.

- b. Glass shall be separated by a spacer and be hermetically sealed using double seal organic sealants.
 - c. Low E coating on #2 surface.
 - d. Unit thickness including 1/2-inch air space shall total 1 inch.
 - e. Provide "Solorban 70 - Clear" by VITRO ARCHITECTURAL GLASS; or "Sun-Guard SN-68" by Guardian; or equal products of alternatives of the quality necessary to meet the specifications.
 - f. Provide at locations indicated except where safety glass is required by CPSC 16 CFR 1201;
3. Clear Insulating Tempered Low-E Glass: Indicated on Drawings as "**CIT**"
 - a. exterior side of 1/4" clear tempered glass
 - b. interior side of 1/4" clear tempered glass.
 - c. Glass shall be separated by a spacer and be hermetically sealed using double seal organic sealants.
 - d. Unit thickness including 1/2-inch air space shall total 1 inch.
 - e. Low-E Coating on #2 surface.
 - f. Provide "Solorban 70 - Clear" by VITRO ARCHITECTURAL GLASS; or equal products of alternatives of the quality necessary to meet the specifications.
 - g. Provide in Curtainwall and/or Storefront System where safety glass is required by CPSC 16 CFR 1201.
4. Insulating Glass Spandrel: Indicated on Drawings as "**SP-01**"
 - a. exterior side of 1/4 inch tinted tempered glass
 - b. interior side of spandrelite glass fourth surface.
 - c. Glass separated by a spacer and hermetically sealed using double seal organic sealants.
 - d. Unit thickness including 1/2-inch air space shall total 1 inch.
 - e. "OPACI-COAT-300[®]" by VITRO ARCHITECTURAL GLASS, or alternatives of the quality necessary to meet the specifications.
5. Clear Glass: Indicated on Drawings as "**CG**"
 - a. 1/4 inch thick ultra-clear glass, VLT: 90 percent
 - b. U-Value Winter 1.02
 - c. U-Value Summer 0.93
 - d. SHGC .90
 - e. Shading Coefficient 1.03
 - f. Visible Light reflectance 8 percent.
 - g. Provide "Starphire" by VITRO ARCHITECTURAL GLASS; or equal products of alternatives of the quality necessary to meet the specifications
6. Laminated Insulated Glass: Indicated on Drawings as "**LIG**"
 - a. Double-Glazed Sputter-Coated Insulating Glass Units
 - b. Laminated Outboard Lite, 1/4 inch thick Outboard Lite Guardian UltraClear[®] float glass
 - c. HeatTreatment: Heat-strengthened, ASTM C 1048, Kind HS
 - d. Interlayer: Polyvinyl butyral (PVB) plastic interlayer, clear 0.060 inch thick.
 - e. Coating on Surface No. 4: SunGuard SN 68
 - f. Glass shall be separated by a spacer and be hermetically sealed using double seal organic sealants
 - g. Inboard Lite: UltraClear[®] Float Glass: ASTM C 1036, Type 1, Class 1, Quality q3.

- h. Provide Solar control insulating Laminated Coated Glass as manufactured by Guardian Glass; or equal products of alternatives of the quality necessary to meet the specifications

2.3 GLAZING GASKETS

- A. Dense Compression Gaskets: Molded or extruded gaskets of profile and hardness required to maintain watertight seal, made from one of the following:
 1. Neoprene complying with ASTM C 864.
 2. EPDM complying with ASTM C 864.
 3. Silicone complying with ASTM C 1115.
 4. Thermoplastic polyolefin rubber complying with ASTM C 1115.
- B. Soft Compression Gaskets: Extruded or molded, closed-cell, integral-skinned neoprene, EPDM, silicone, or thermoplastic polyolefin rubber gaskets complying with ASTM C 509, Type II, black; of profile and hardness required to maintain watertight seal.
- C. Lock-Strip Gaskets: Neoprene extrusions in size and shape indicated, fabricated into frames with molded corner units and zipper lock-strips, complying with ASTM C 542, black.
- D. Neoprene Glazing Gaskets for bullet resistant glazing:
 1. Interior Glazing gaskets closed cell cellular neoprene conforming to ASTM C509 Type II Option 1 with a 40-50 Shore A Durometer.
 2. Exterior Glazing gaskets solid neoprene conforming to ASTM C864 with a 65-75 Shore A Durometer.

2.4 GLAZING SEALANTS

- A. General: Provide products of type indicated, complying with the following requirements:
 1. Compatibility: Provide glazing sealants that are compatible with one another and with other materials they will contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
 2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
 3. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range.
- B. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 100/50, Use NT.
 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Dow Corning Corporation; 790.
 - b. GE Advanced Materials - Silicones; SilPruf LM SCS2700.
 - c. Tremco Incorporated; Spectrem 1.

- C. Glazing Sealants for Fire-Rated Glazing Products: Products that are approved by testing agencies that listed and labeled fire-resistant glazing products with which they are used for applications and fire-protection ratings indicated.
- D. Glazing Sealants for bullet resistant glazing:
 - 1. Dow 995 or Dow 795 for exterior applications.
 - 2. Dow 995, Dow 795, or 3M IPA for interior applications.

2.5 GLAZING TAPES

- A. Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based, 100 percent solids elastomeric tape; nonstaining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; and complying with ASTM C 1281 and AAMA 800 for products indicated below:
 - 1. AAMA 804.3 tape, where indicated.
 - 2. AAMA 806.3 tape, for glazing applications in which tape is subject to continuous pressure.
 - 3. AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure.
- B. Expanded Cellular Glazing Tapes: Closed-cell, PVC foam tapes; factory coated with adhesive on both surfaces; and complying with AAMA 800 for the following types:
 - 1. AAMA 810.1, Type 1, for glazing applications in which tape acts as the primary sealant.
 - 2. AAMA 810.1, Type 2, for glazing applications in which tape is used in combination with a full bead of liquid sealant.

2.6 MISCELLANEOUS GLAZING MATERIALS

- A. General: Provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.
- B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.
- C. Setting Blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, plus or minus 5.
- D. Spacers: Elastomeric blocks or continuous extrusions of hardness required by glass manufacturer to maintain glass lites in place for installation indicated.
- E. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).
- F. Cylindrical Glazing Sealant Backing: ASTM C 1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.
- G. Perimeter Insulation for Fire-Resistive Glazing: Product that is approved by testing agency that listed and labeled fire-resistant glazing product with which it is used for application and fire-protection rating indicated.

2.7 FABRICATION OF GLAZING UNITS

- A. Fabricate glazing units in sizes required to fit openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing publications, to comply with system performance requirements.
- B. Clean-cut or flat-grind vertical edges of butt-glazed monolithic lites to produce square edges with slight chamfers at junctions of edges and faces.
- C. Grind smooth and polish exposed glass edges and corners.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine framing, glazing channels, and stops, with Installer present, for compliance with the following:
 - 1. Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.
 - 2. Presence and functioning of weep systems.
 - 3. Minimum required face and edge clearances.
 - 4. Effective sealing between joints of glass-framing members.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.

3.3 GLAZING, GENERAL

- A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.
- B. Adjust glazing channel dimensions as required by Project conditions during installation to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances.
- C. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.

- D. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.
 - E. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.
 - F. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.
 - G. Provide spacers for glass lites where length plus width is larger than 50 inches.
 - 1. Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.
 - 2. Provide 1/8-inch minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.
 - H. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.
 - I. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.
 - J. Set glass lites with proper orientation so that coatings face exterior or interior as specified.
 - K. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.
 - L. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.
- 3.4 TAPE GLAZING
- A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.
 - B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.
 - C. Cover vertical framing joints by applying tapes to heads and sills first and then to jambs. Cover horizontal framing joints by applying tapes to jambs and then to heads and sills.
 - D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.
 - E. Do not remove release paper from tape until right before each glazing unit is installed.

- F. Apply heel bead of elastomeric sealant.
- G. Center glass lites in openings on setting blocks and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.
- H. Apply cap bead of elastomeric sealant over exposed edge of tape.

3.5 GASKET GLAZING (DRY)

- A. Fabricate compression gaskets to lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.
- B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.
- C. Installation with Drive-in Wedge Gaskets: Center glass lites in openings on setting blocks and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.
- D. Installation with Pressure-Glazing Stops: Center glass lites in openings on setting blocks and press firmly against soft compression gasket. Install dense compression gaskets and pressure-glazing stops, applying pressure uniformly to compression gaskets. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.
- E. Install gaskets so they protrude past face of glazing stops.

3.6 SEALANT GLAZING (WET)

- A. Install continuous spacers, or spacers combined with cylindrical sealant backing, between glass lites and glazing stops to maintain glass face clearances and to prevent sealant from extruding into glass channel and blocking weep systems until sealants cure. Secure spacers or spacers and backings in place and in position to control depth of installed sealant relative to edge clearance for optimum sealant performance.
- B. Force sealants into glazing channels to eliminate voids and to ensure complete wetting or bond of sealant to glass and channel surfaces.
- C. Tool exposed surfaces of sealants to provide a substantial wash away from glass.

3.7 APPLIED GLAZING FILM

- A. Apply glazing film at locations indicated, according to manufacturer's written instructions.

3.8 CLEANING AND PROTECTION

- A. Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels and clean surfaces.
- B. Protect glass from contact with contaminating substances resulting from construction operations. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended in writing by glass manufacturer.
- C. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains; remove as recommended in writing by glass manufacturer.
- D. Remove and replace glass that is broken, chipped, cracked, or abraded or that is damaged from natural causes, accidents, and vandalism, during construction period.
- E. Wash glass on both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended in writing by glass manufacturer.

END OF SECTION 08.8000

SECTION 08.8700 – WINDOW FILM**PART 1 - GENERAL**

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Related Sections: Section(s) related to this section include:
 - 1. Division 08 Section "Glazing": Glass and glazing for storefront systems.

1.2 DEFINITIONS/REFERENCES

- A. ASHRAE - American Society for Heating, Refrigeration, and Air Conditioning Engineers; Handbook of Fundamentals.
- B. ASTM International (ASTM):
 - 1. ASTM E 84 - Standard Method of Test for Surface Burning Characteristics of Building Materials
- C. ASTM E 308 - Standard Recommended Practice for Spectrophotometry and Description of Color in CIE 1931 System.
- D. ASTM E 903 - Standard Methods of Test for Solar Absorbance, Reflectance and Transmittance of Materials Using Integrating Spheres.

1.3 PERFORMANCE REQUIREMENTS

- A. Flammability: Surface burning characteristics when tested in accordance ASTM E 84, demonstrating film applied to glass rated Class A for Interior Use:
 - 1. Flame Spread Index: no greater than 25.
 - 2. Smoke Developed Index: no greater than 450.

1.4 SUBMITTALS

- A. Product Data: Manufacturer's current technical literature on each product to be used, including:
 - 1. Manufacturer's Data Sheets.
 - 2. Preparation instructions and recommendations.
 - 3. Storage and handling requirements and recommendations.
 - 4. Installation methods.
- B. Verification Samples: For each film specified, two samples representing actual film color and pattern.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: All primary products specified in this section will be supplied by a single manufacturer with a minimum of ten years experience.
 - 1. Provide documentation that the adhesive used on the specified films is Pressure Sensitive Adhesive (PSA)
- B. Installer Qualifications: All products listed in this section are to be installed by a single installer with a minimum of five years demonstrated experience in installing products of the same type and scope as specified.
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish areas designated by Architect
 - 2. Do not proceed with remaining work until workmanship, color and sheen are approved by Architect
 - 3. Refinish mock-up area as required to produce acceptable work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Follow Manufacturer's instructions for storage and handling
- B. Store products in manufacturer's unopened packaging until ready for installation
- C. Store and dispose of hazardous materials, and material contaminated by hazardous materials, in accordance with requirements of local authorities having jurisdiction

1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.8 WARRANTY

- A. At project closeout, provide to Owner or Owners Representative an executed current copy of the manufacturer's standard limited warranty against manufacturing defect, outlining its terms, conditions, and exclusions from coverage.
- B. Product will be free from defects in material and manufacture for a period of five (5) years from the date of installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design Manufacturer: SOLYX Films
1. Comparable Products: Subject to compliance with requirements, provide the named product or comparable products by the following:
 - a. 3M Commercial Solutions

2.2 PATTERNED PRIVACY FILM

- A. Material Properties:
1. General: Plastic finishes field-applied application to glass or plastic material as visual opaque or decorative film
 2. Film: Vinyl
 3. Decorative Pattern: Printed
 - a. SXGF-0500 CLEAR FROSTED SAFETY FILM
 - b. SX-3140 Dusted Crystal
 4. Adhesive: Clear, Pressure-Sensitive
 5. Liner: Silicone, Transparent, Synthetic, Plottable
 6. Thickness: Minimum 2 mil (50 microns)
 7. Fire Performance: Surface burning characteristics when tested in accordance with ASTM E84: Class A:
 - a. Flame Spread : 25 maximum
 - b. Smoke Developed: 450 maximum
- B. Optical Performance:
- a. SXGF-0500 CLEAR FROSTED SAFETY FILM
 - b. Elongation at Break 150 percent
 - c. Abrasion Resistance: 5 percent
 - d. Visible Light Transmission: 70 percent
 - e. UV Rejection: 35 percent
 - f. Infra-Red Transmission: 66 percent
 - g. Total Solar Heat Absorption: 18 percent
 2. SX-3140 Dusted Crystal
 - a. Ultraviolet Transmittance: 11 percent
 - b. Visible Light Transmittance: 55 percent
 - c. Visible Light Reflectance: 79 percent
 - d. Solar Heat Transmittance: 76 percent
 - e. Solar Heat Reflectance: 7 percent
 - f. Solar Heat Absorption: 17 percent
 - g. Shading Coefficient: .93 percent

PART 3 - EXECUTION**3.1 EXAMINATION****A. Film Examination**

1. If preparation of glass surfaces is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.
 - a. Glass surfaces receiving new film should first be examined to verify that they are free from defects and imperfections, which will affect the final appearance.
2. Do not proceed with installation until glass surfaces have been properly prepared and deviations from manufacturer's recommended tolerances are corrected. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result under the project conditions.
3. Commencement of installation constitutes acceptance of conditions.

B. Proceed with installation only after unsatisfactory conditions have been corrected.**3.2 PREPARATION****A. Clean surfaces thoroughly prior to installation.****B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.****3.3 APPLIED GLAZING FILM (installation)****A. Apply glazing film at locations indicated, according to manufacturer's written instructions.**

1. Install in accordance with manufacturer's instructions.
2. Carefully measure the height and width of the glass surface. Cut the film to the dimensions, leaving an extra ½ inch to 1 inch around all sides. Use the paper liner on the back of the film to mark cut points; this will not damage the film. Thoroughly clean the surface of the glass to remove any trace of dust, grime and grease. Use low-lint towels or microfiber cloths to clean the surface, as lint left on the glass can stick under film.
3. Lay the film on a clean, flat surface with the liner facing up. Slowly peel back the liner, wetting the adhesive side of the film very thoroughly. After the liner is removed, rinse and dip fingers in water before handling the film. Wet fingers will prevent fingerprints on the adhesive surface.
4. Thoroughly spray and soak the glass surface AND the adhesive side of the film with the water mixture (Make the water mixture by adding 8-10 drops of a mild, non-moisturizing dish detergent to a 32-oz. spray bottle filled with clean water (adjust ratio for smaller or larger bottles)).
5. Pick up the film by the top corners, keeping it straight and level. Place the wet film onto the wet surface, keeping the top edge level but letting the film hang over the edges of the frame on all sides. Move, slide and reposition the film as needed. Wet the outside of the film with the spray, then slide a squeegee over the wet film to smooth out and press the film against
6. Double check that the film is flat and smooth. Locate the hard card and razor that were included with the film. If any bubbles remain, use the hard card to push them towards the

edge. Then, in one smooth, continuous motion, trim the excess film from the edges using the hard card and a razor knife. Once the film is trimmed, wrap the hard card in a paper towel and use it to push any remaining bubbles and water to the outside edge. The film will completely dry and fully adhere within a few days.

3.4 CLEANING AND PROTECTION

- A. Remove left over materials and debris from Work area. Use necessary means to protect film before, during and after installation.
- B. Touch-up, repair or replace damaged products before Substantial Completion.
- C. After application of film, wash film using common window cleaning solutions, including ammonia solutions, 30 days after application. Do not use abrasive type cleaning agents and bristle brushes to avoid scratching film. Use synthetic sponges or soft cloths.

END OF SECTION 08.8000

SECTION 09.2216 – NON-STRUCTURAL METAL FRAMING**PART 1 - GENERAL**

1.1 SUMMARY

A. This Section includes non-load-bearing steel framing members for the following applications:

1. Interior framing systems (e.g., supports for partition walls, framed soffits, furring, etc.).
2. Interior suspension systems (e.g., supports for ceilings, suspended soffits, etc.).

B. Related Sections

1. Division 09 "Gypsum Board"
2. Division 06 "Sheathing"

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

1.3 QUALITY ASSURANCE

- A. Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.
- B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

PART 2 - PRODUCTS

2.1 NON-LOAD-BEARING STEEL FRAMING, GENERAL

A. Framing Members, General: Comply with ASTM C 754 for conditions indicated.

1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal, unless otherwise indicated.
2. Protective Coating: ASTM A 653/A 653M, G40 (Z120), hot-dip galvanized, unless otherwise indicated.

2.2 STEEL FRAMING FOR FRAMED ASSEMBLIES

A. Steel Studs and Runners: ASTM C 645.

1. Minimum Base-Metal Thickness: 0.0179 inch (0.45 mm) unless indicated otherwise.
 2. Minimum Base-Metal Thickness: 0.0312 inch (0.79 mm) wherever gypsum board or cementitious backer boards (CBB) are scheduled and at low-height partitions.
 3. Depth: 3-5/8 inches (92.1 mm) unless indicated otherwise on Drawings.
- B. Slip-Type Head Joints: Where indicated, provide one of the following:
1. Double-Runner System: ASTM C 645 top runners, inside runner with 2-inch- (50.8-mm-) deep flanges in thickness not less than indicated for studs and fastened to studs, and outer runner sized to friction fit inside runner.
 2. Deflection Track: Steel sheet top runner manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.
 - a. Products: Subject to compliance with requirements, provide one of the following:
 - i. Steel Network Inc. (The); VertiClip SLD Series.
 - ii. Superior Metal Trim; Superior Flex Track System (SFT).
- C. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.
1. Minimum Base-Metal Thickness: 0.0312 inch (0.79 mm).
- D. Cold-Rolled Channel Bridging: 0.0538-inch (1.37-mm) bare-steel thickness, with minimum 1/2-inch- (12.7-mm-) wide flanges.
1. Depth: 1-1/2 inches (38.1 mm).
 2. Clip Angle: Not less than 1-1/2 by 1-1/2 inches (38.1 by 38.1 mm), 0.068-inch- (1.73-mm-) thick, galvanized steel.
- E. RC Resilient Channel: RC Deluxe Resilient Channel by Clark Dietrich, or equal.
1. 22 mil steel, Grade 33ksi minimum yield strength
 2. Coating: G40EQ
 3. Meet or exceed ASTM C645 and ASTM A 1003.
 4. Dimensions: 2-5/8 inches by 1/2-inch.
- F. Sound Isolation Clips: Basis of Design IsoMax as manufactured by Kinetics Noise Control.
1. Provide furring channel widths from 2.38 inches to 2.75 inches.
 2. Dimensions: 1-inch wide by 3.86-inches wide.
 3. Location: Provide in mechanical rooms B-119, B133, B-211, B225, B-311, B-325 on wall separating mechanical room and classroom and as indicated on Drawings.

2.3 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards.

1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.
- B. Isolation Strip at Exterior Walls: Provide one of the following:
1. Asphalt-Saturated Organic Felt: ASTM D 226, Type I (No. 15 asphalt felt), nonperforated.
 2. Foam Gasket: Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement, 1/8 inch (3.2 mm) thick, in width to suit steel stud size.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance.
1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Suspended Assemblies: Coordinate installation of suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive hangers at spacing required to support the Work and that hangers will develop their full strength.
1. Furnish concrete inserts and other devices indicated to other trades for installation in advance of time needed for coordination and construction.

3.3 INSTALLATION, GENERAL

- A. Installation Standard: ASTM C 754, except comply with framing sizes and spacing indicated.
1. Portland Cement Plaster Assemblies: Also comply with requirements in ASTM C 1063 that apply to framing installation.
 2. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.
- B. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
- C. Install bracing at terminations in assemblies.
- D. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.4 INSTALLING FRAMED ASSEMBLIES

- A. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.
- B. Install studs so flanges within framing system point in same direction.
 1. Space studs as follows:
 - a. Single-Layer Application: 16 inches (406 mm) o.c., unless otherwise indicated.
 - b. Multilayer Application: 16 inches (406 mm) o.c., unless otherwise indicated.
 - c. Tile backing panels: 16 inches (406 mm) o.c., unless otherwise indicated.
- C. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts penetrating partitions above ceiling.
 1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
 2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.
 - a. Install two studs at each jamb, unless otherwise indicated.
 - b. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch (12.7-mm) clearance from jamb stud to allow for installation of control joint in finished assembly.
 - c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.
 3. Other Framed Openings: Frame openings other than door openings the same as required for door openings, unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
 4. Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure.
 - a. Firestop Track: Where indicated, install to maintain continuity of fire-resistance-rated assembly indicated.
 5. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.
 6. Curved Partitions:
 - a. Bend track to uniform curve and locate straight lengths so they are tangent to arcs.
 - b. Begin and end each arc with a stud, and space intermediate studs equally along arcs. On straight lengths of not less than 2 studs at ends of arcs, place studs 6 inches (150 mm) o.c.
- D. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch (3 mm) from the plane formed by faces of adjacent framing.

END OF SECTION 09.2216

SECTION 09.2900 - GYPSUM BOARD**PART 1 - GENERAL**

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Standard Gypsum Board
 - 2. Mold and Moisture Resistant Gypsum Board
 - 3. Cement Board

1.2 REFERENCES

- A. American National Standards Institute (ANSI)
 - 1. ANSI A 108.11 - Interior Installation of Cementitious Backer Units
 - 2. ANSI A 118.9 - American National Standard Specification for Test Methods and Specifications for Cementitious Backer Units
- B. ASTM International
 - 1. ASTM C 473 - Standard Test Methods for Physical Testing of Gypsum Panel Products
 - 2. ASTM C 840 - Standard Specification for Application and Finishing of Gypsum Board
 - 3. ASTM C 919 - Standard Practice for Use of Sealants in Acoustical Applications
 - 4. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants.
 - 5. ASTM C 1002 - Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs
 - 6. ASTM C 1177 - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing
 - 7. ASTM C 1178 - Standard Specification for Coated Glass Mat Water Resistant Gypsum Backing Panel
 - 8. ASTM C 1280 - Standard Specification for Application of Gypsum Sheathing
 - 9. ASTM C 1325 - Standard Specification for Non-Asbestos Fiber-Mat Reinforced Cementitious Backer Units
 - 10. ASTM C 1396 - Standard Specification for Gypsum Board
 - 11. ASTM C 1629 - Standard Classification for Abuse Resistant Nondecorated Interior Gypsum Panel Products and Fiber reinforced Cement Panels
 - 12. ASTM C 1658 - Standard Specification for Glass Mat Gypsum Panels
 - 13. ASTM D 3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber
 - 14. ASTM E 72 - Standard Test Methods of Conducting Strength Tests of Panels for Building Construction
 - 15. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials
 - 16. ASTM E 90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
 - 17. ASTM E 96 - Standard Test Methods for Water Vapor Transmission of Materials
 - 18. ASTM E 119 - Standard Test Methods for Fire Tests of Building Construction and Materials
 - 19. ASTM E 136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 176;C.

20. ASTM G 21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi

C. Gypsum Association (GA)

1. GA-214 - Recommended Levels of Gypsum Board Finish
2. GA-216 - Application and Finishing of Gypsum Panel Products
3. GA-253 - Application of Gypsum Sheathing

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show locations, fabrication, and installation of control and expansion joints including plans, elevations, sections, details of components, and attachments to other units of Work.
- C. Samples: For the following products:
 1. Trim Accessories: Full-size sample in 12-inch- (300-mm-) long length for each trim accessory indicated.

1.4 QUALITY ASSURANCE

- A. Fire-Test-Response Characteristics: For gypsum board assemblies with fire-resistance ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.
 1. Fire-Resistance-Rated Assemblies: Indicated by design designations from UL's "Fire Resistance Directory."
- B. Sound Transmission Characteristics: For gypsum board assemblies with STC ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by a qualified independent testing agency.
 1. STC-Rated Assemblies: Indicated by design designations from GA-600, "Fire Resistance Design Manual."

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original packages, containers, or bundles bearing brand name and identification of manufacturer or supplier.
- B. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes. Stack gypsum panels flat to prevent sagging.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.

PART 2 - PRODUCTS**2.1 MANUFACTURERS**

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Gypsum Board and Related Products:
 - a. Certainteed Corp.
 - b. G-P Gypsum Corp.
 - c. National Gypsum Company.
 - d. United States Gypsum Co.

2.2 STANDARD GYPSUM BOARD

- A. Basis of Design: Gold Bond® BRAND Gypsum Board
1. Panel Physical Characteristics
 - a. Core: Regular gypsum core
 - b. Surface Paper: 100 percent recycled content paper on front, back and long edges
 - c. Long Edges: Tapered
 - d. Overall thickness: 5/8 inch
 - e. Panel complies with requirements of ASTM C 1396

2.3 MOLD AND MOISTURE RESISTANT GYPSUM BOARD

- A. Basis of Design: Gold Bond® BRAND XP Gypsum Board
1. Panel Physical Characteristics
 - a. Core: Mold and moisture resistant gypsum core
 - b. Surface paper: 100 percent recycled content moisture/mold/mildew resistant paper on front, back, and long edges
 - c. Long Edges: Tapered
 - d. Overall thickness: 5/8 inch
 - e. Panel complies with requirements of ASTM C 1396
 - f. Mold/Mildew Resistance: 10 when tested in accordance with ASTM D 3273

2.4 CEMENT BOARD

- A. Cement Backerboard Basis of Design: PermaBase® BRAND Cement Board
1. Panel Physical Characteristics
 - a. Core: Cementitious, water-durable
 - b. Surface: Fiberglass mesh on front and back
 - c. Long Edges: Tapered
 - d. Overall Thickness: 5/8 inch
 - e. Panel complies with requirements of ASTM C 1325 and ANSI A 118.9
 - f. Density: 72 lbs. per cu. ft.
 - g. Water Absorption: Not greater than 8 percent when tested for 24 hours in accordance with ASTM C 473

2.5 ACCESSORY PRODUCTS

- A. Acoustical sealant
 - 1. Conform to ASTM C 919
 - 2. VOC content less than 2 g/L
 - 3. Products/Manufacturer
 - a. Grabber Acoustical Sealant GSC
 - b. STI SpecSeal Smoke N Sound Caulk
 - c. BOSS 824 Acoustical Sound Sealant

- B. Joint Treatment
 - 1. Tape:
 - a. Paper Tape: 2-1/16 inches wide
 - b. Paper Tape: 2 inches wide with metal strips laminated along the center crease to form inside and outside corners
 - c. Fiberglass Tape: Nominal 2 inches wide self-adhering tape

- C. Joint Sealant
 - 1. Conform to ASTM C 920
 - 2. VOC content less than 2 g/L

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General
 - 1. Install in accordance with manufacturer recommendations

- B. Cement Board
 - 1. Install in accordance with manufacturer recommendations and ANSI A 108.11

- C. Gypsum Sheathing
 - 1. Install in accordance with manufacturer recommendations and [ASTM C 1280] [GA-253]

3.2 EXAMINATION

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 PREPARATION

- A. Suspended Ceilings: Coordinate installation of ceiling suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive ceiling hangers at spacing required to support ceilings and that hangers will develop their full strength.

1. Furnish concrete inserts and other devices indicated to other trades for installation in advance of time needed for coordination and construction.

B. Coordination with Sprayed Fire-Resistive Materials:

1. After sprayed fire-resistive materials are applied, remove them only to extent necessary for installation of gypsum board assemblies and without reducing the fire-resistive material thickness below that which is required to obtain fire-resistance rating indicated. Protect remaining fire-resistive materials from damage.

3.4 APPLYING AND FINISHING PANELS, GENERAL

- A. Gypsum Board Application and Finishing Standards: ASTM C 840 and GA-216.
- B. Install sound attenuation blankets before installing gypsum panels, unless blankets are readily installed after panels have been installed on one side.
- C. Install ceiling board panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in the central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- D. Install gypsum panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch (1.5 mm) of open space between panels. Do not force into place.
- E. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
- F. Attach gypsum panels to framing provided at openings and cutouts.
- G. Do not attach gypsum panels across the flat grain of wide-dimension lumber, including floor joists and headers. Float gypsum panels over these members using resilient channels, or provide control joints to counteract wood shrinkage.
- H. Form control and expansion joints with space between edges of adjoining gypsum panels.
- I. Isolate perimeter of non-load-bearing gypsum board partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch- (6.4- to 12.7-mm-) wide spaces at these locations, and trim edges with U-bead edge trim Where edges of gypsum panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- J. Floating Construction: Where feasible, including where recommended in writing by manufacturer, install gypsum panels over wood framing, with floating internal corner construction.
- K. STC-Rated Assemblies: Seal construction at perimeters, behind control and expansion joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and

manufacturer's written recommendations for locating edge trim and closing off sound-flanking paths around or through gypsum board assemblies, including sealing partitions above acoustical ceilings.

- L. Space fasteners in gypsum panels according to referenced gypsum board application and finishing standard and manufacturer's written recommendations.
 - 1. Space screws a maximum of 12 inches (304.8 mm) o.c. for vertical applications.
- M. Space fasteners in panels that are tile substrates a maximum of 8 inches (203.2 mm) o.c.

3.4 APPLYING INTERIOR GYPSUM BOARD

- A. Install interior gypsum board in the following locations:
 - 1. Standard Gypsum Board: Vertical surfaces, unless otherwise indicated.
 - 2. Fire-Resistance Rated Gypsum Board: Where required for fire-resistance-rated assembly.
 - 3. Mold and Moisture Resistant Gypsum Board: Plumbing walls, see drawings
 - 4. Gypsum Shaftliner Panel: Fire-rated walls, see drawings
 - 5. Abuse Resistant Gypsum Board: Limited classroom locations, see drawings
 - 6. Cement Board: Ceiling Locations (See Alternate Specification)
 - 7. Gypsum Sheathing: Vertical surfaces, see drawings.
 - 8. Ceiling Board: Gypsum Ceiling, unless otherwise indicated

3.5 PANEL APPLICATION METHODS

- A. Single-Layer Application:
 - 1. On ceilings, apply gypsum panels before wall/partition board application to the greatest extent possible and at right angles to framing, unless otherwise indicated.
 - 2. On partitions/walls, apply gypsum panels vertically (parallel to framing), unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
 - a. Stagger abutting end joints not less than one framing member in alternate courses of board.
 - b. At stairwells and other high walls, install panels horizontally, unless otherwise indicated or required by fire-resistance-rated assembly.
 - 3. On Z-furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
- B. Single-Layer Fastening Methods: Apply gypsum panels to supports with steel drill screws.

3.6 INSTALLING TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- B. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect for visual effect.

3.7 FINISHING GYPSUM BOARD ASSEMBLIES

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.

- B. Prefill open joints, rounded or beveled edges, and damaged surface areas.
- C. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:
 - 1. Level 1 for ceiling plenum areas, concealed areas, and where indicated, unless a higher level of finish is required for fire-resistive-rated assemblies and sound-rated assemblies.
 - a. Where level 1 gypsum board finish is indicated, apply joint compound specified for embedding coat.
 - 2. Level 4 for all exposed gypsum board surfaces.
 - a. For level 4 gypsum board finish, embed tape in finishing compound plus two separate coats applied over joints, angles, fastener heads, and trim accessories.
 - b. Primer and its application to surfaces are specified in other Division 09 Sections.

3.8 FIELD QUALITY CONTROL

- A. Above-Ceiling Observation: Architect will conduct an above-ceiling observation before installing gypsum board ceilings and report deficiencies in the Work observed. Do not proceed with installation of gypsum board to ceiling support framing until deficiencies have been corrected.
 - 1. Notify Architect seven days in advance of date and time when Project, or part of Project, will be ready for above-ceiling observation.
 - 2. Before notifying Architect, complete the following in areas to receive gypsum board ceilings:
 - a. Installation of 80 percent of lighting fixtures, powered for operation.
 - b. Installation, insulation, and leak and pressure testing of water piping systems.
 - c. Installation of air-duct systems.
 - d. Installation of air devices.
 - e. Installation of mechanical system control-air tubing.
 - f. Installation of ceiling support framing

END OF SECTION 09.2900

SECTION 09.5000 – ACOUSTICAL PANEL CEILINGS ALTERNATE #1**PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

Drawings and general conditions of Contract, including General and Supplementary Conditions and Divisions-1 Specification sections apply to work of this section. Refer to Alternate Specification.

1.2 SUMMARY**A. Section Includes:**

1. Acoustical ceiling panels
2. Exposed grid suspension system
3. Wire hangers, fasteners, main runners, cross tees, and wall angle moldings
4. Perimeter Trim

B. Related Sections:

1. Section 09 20 00 - Plaster and Gypsum Board
2. Divisions 23 - HVAC Air Distribution
3. Division 26 - Electrical

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

1. ASTM A 1008 Standard Specification for Steel, Sheet, Cold Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability
2. ASTM A 641 Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire
3. ASTM A 653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process
4. ASTM C 423 Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
5. ASTM C 635 Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings
6. ASTM C 636 Recommended Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels
7. ASTM D 3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber
8. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials
9. ASTM E 119 Standard Test Methods for Fire Tests of Building Construction and Material
 - a) Armstrong Fire Guard Products

10. ASTM E 580 Installation of Metal Suspension Systems in Areas Requiring Moderate Seismic Restraint
11. ASTM E 1111 Standard Test Method for Measuring the Interzone Attenuation of Ceilings Systems
12. ASTM E 1414 Standard Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum
13. ASTM E 1264 Classification for Acoustical Ceiling Products

B. International Building Code

C. ASHRAE Standard 62.1-2004, Ventilation for Acceptable Indoor Air Quality

D. NFPA 70 National Electrical Code

E. ASCE 7 American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures

F. International Code Council-Evaluation Services - AC 156 Acceptance Criteria for Seismic Qualification Testing of Non-structural Components

G. International Code Council-Evaluation Services Report - Seismic Engineer Report

1. ESR 1308 - Armstrong Suspension Systems

H. International Association of Plumbing and Mechanical Officials - Seismic Engineer Report

1. 0244 - Armstrong Single Span Suspension System

I. California Department of Public Health CDPH/EHLB Emission Standard Method Version 1.1 2010

J. Living Building Challenge

K. U.S. Department of Agriculture BioPreferred program (USDA BioPreferred).

1.4 SYSTEM DESCRIPTION

A. Continuous/Wall-to-Wall

1.5 SUBMITTALS

A. Product Data: Submit manufacturer's technical data for each type of acoustical ceiling unit and suspension system required.

B. Samples: Minimum 6 inch x 6 inch samples of specified acoustical panel; 8 inch long samples of exposed wall molding and suspension system, including main runner and 4 foot cross tees.

C. Shop Drawings: Layout and details of acoustical ceilings show locations of items that are to be coordinated with or supported by the ceilings.

D. Acoustical Certifications: Manufacturer's certifications that products comply with specified requirements, including laboratory reports showing compliance with specified tests and standards. For acoustical performance, each carton of material must carry an approved independent laboratory classification of NRC, CAC, and AC.

1. If the material supplied by the acoustical subcontractor does not have an Underwriter's Laboratory classification of acoustical performance on every carton, subcontractor shall be required to send material from every production run appearing on the job to an independent or NVLAP approved laboratory for testing, at the architect's or owner's discretion. All products not conforming to manufacturer's current published values must be removed, disposed of and replaced with complying product at the expense of the Contractor performing the work.

1.6 QUALITY ASSURANCE

A. Single-Source Responsibility: Provide acoustical panel units and grid components by a single manufacturer.

1. Fire Performance Characteristics: Identify acoustical ceiling components with appropriate markings of applicable testing and inspecting organization

2. Surface Burning Characteristics: As follows, tested per ASTM E 84 and complying with ASTM E 1264 Classification

3. Fire Resistance: As follows tested per ASTM E119 and listed in the appropriate floor or roof design in the Underwriters Laboratories Fire Resistance Directory

B. Acoustical Panels: As with other architectural features located at the ceiling, may obstruct or skew the planned fire sprinkler water distribution pattern through possibly delay or accelerate the activation of the sprinkler or fire detection systems by channeling heat from a fire either toward or away from the device. Designers and installers are advised to consult a fire protection engineer, NFPA 13, or their local codes for guidance where automatic fire detection and suppression systems are present.

C. Coordination of Work: Coordinate acoustical ceiling work with installers of related work including, but not limited to building insulation, gypsum board, light fixtures, mechanical systems, electrical systems, and sprinklers.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver acoustical ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.

B. Before installing acoustical ceiling units, permit them to reach room temperature and a stabilized moisture content.

C. Handle acoustical ceiling units carefully to avoid chipping edges or damaged units in any way.

1.8 PROJECT CONDITIONS

A. Space Enclosure:

1. HumiGuard Plus Ceilings: Building areas to receive ceilings shall be free of construction dust and debris. Products with HumiGuard Plus performance and hot dipped galvanized steel, aluminum or stainless steel suspension systems can be installed up to 120°F (49°C) and in spaces before the building is enclosed, where HVAC systems are cycled or not operating. Cannot be used in exterior applications where standing water is present or where moisture will come in direct contact with the ceiling.

2. HumiGuard Max Ceilings: Building areas to receive ceilings shall be free of construction dust and debris. Ceilings with HumiGuard Max performance can be installed in conditions up to 120°F (49°C) and maximum humidity exposure including outdoor applications, and other standing water applications, so long as they are installed with either SS Prelude Plus, AL Prelude Plus, or Prelude Plus Fire Guard XL suspension systems. Products with Humiguard Max performance can be installed in exterior applications, where standing water is present, or where moisture will come in direct contact with the ceiling. Only Ceramaguard with AL Prelude Plus suspension system can be installed over swimming pools.

1.9 WARRANTY

A. Acoustical Panel: Submit a written warranty executed by the manufacturer, agreeing to repair or replace panels that fail within the warranty period. Failures include, but are not limited to the following:

1. Acoustical Panels: Sagging and warping
2. Grid System: Rusting and manufacturer's defects

B. Warranty Period:

1. Acoustical panels: Ten (10) years from date of substantial completion
2. Suspension: Ten (10) years from date of substantial completion
3. Ceiling System: Thirty (30) years from date of substantial completion

C. The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

1.10 MAINTENANCE

A. Extra Materials: Deliver extra materials to Owner. Furnish extra materials described below that match products installed. Packaged with protective covering for storage and identified with appropriate labels.

1. Acoustical Ceiling Units: Furnish quality of full-size units equal to 5.0 percent of amount installed.
2. Exposed Suspension System Components: Furnish quantity of each exposed suspension component equal to 2.0 percent of amount installed.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Ceiling Panels: Armstrong World Industries, Inc.
- B. Suspension Systems: Armstrong World Industries, Inc.
- C. Perimeter Systems: Armstrong World Industries, Inc.
- D. Or equals: Certainteed, USG, Rockfon

2.2 ACOUSTIC CEILING TILES

A. Acoustical Panels Type ACT-01

1. See drawings

2.3 METAL SUSPENSION SYSTEMS

A. Components

1. Main beams and cross tees, base metal and end detail, fabricated from commercial quality hot dipped galvanized steel complying with ASTM A 653. Main beams and cross tees are double-web steel construction with type exposed flange design. Exposed surfaces chemically cleansed, capping prefinished galvanized steel in baked polyester paint. Main beams and cross tees shall have rotary stitching.

a. Structural Classification: ASTM C 635 Intermediate Duty

b. Color: White and match the actual color of the selected ceiling tile, unless noted otherwise.

c. Sustainability: Environmental Product Declaration (EPD), Health Product Declaration (HPD)

d. Acceptable Product: PRELUDE XL 15/16" Exposed Tee as manufactured by Armstrong World Industries

B. Attachment Devices: Size for five times design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.

C. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft annealed, with a yield stress load of at least three design load, but not less than 12 gauge.

D. Edge Moldings and Trim:

1. 7800 - 12' Wall Molding

PART 3 – EXECUTION

3.1 EXAMINATION

A. Do not proceed with installation until all wet work such as concrete, terrazzo, plastering and painting has been completed and thoroughly dried out, unless expressly permitted by manufacturer's printed recommendations. (Exception: HumiGuard Max Ceilings)

3.2 PREPARATION

A. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less than half width units at borders, and comply with reflected ceiling plans. Coordinate panel layout with mechanical and electrical fixtures.

B. Coordination: Furnish layouts for preset inserts, clips, and other ceiling anchors whose installation is specified in other sections.

1. Furnish concrete inserts and similar devices to other trades for installation well in advance of time needed for coordination of other work.

3.3 INSTALLATION

A. Follow manufacturer installation instructions.

B. Install suspension system and panels in accordance with the manufacturer's instructions, and in compliance with ASTM C 636 and with the authorities having jurisdiction.

C. Suspend main beam from overhead construction with hanger wires spaced 4'-0" on center along the length of the main runner. Install hanger wires plumb and straight.

D. Install wall moldings at intersection of suspended ceiling and vertical surfaces. Miter corners where wall moldings intersect or install corner caps.

E. For reveal edge panels: Cut and reveal or rabbet edges of ceiling panels at border areas and vertical surfaces.

F. Install acoustical panels in coordination with suspended system, with edges resting on flanges of main runner and cross tees. Cut and fit panels neatly against abutting surfaces. Support edges by wall moldings.

3.4 ADJUSTING AND CLEANING

A. Replace damaged and broken panels.

B. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch up of minor finish damage. Remove any ceiling products that cannot be successfully cleaned and or repaired. Replace with attic stock or new product to eliminate evidence of damage.

C. Before disposing of ceilings, contact the Armstrong Recycling Center at 877-276-7876, select option #1 then #8 to review with a consultant the condition and location of building where the ceilings will be removed. The consultant will verify the condition of the material and that it meets the Armstrong requirements for recycling. The Armstrong consultant will provide assistance to facilitate the recycle of the ceiling.

END OF SECTION 09.5000

SECTION 09.6513 – RESILIENT WALL BASE**PART 1 - GENERAL**

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
1. Resilient wall base and accessories.
 2. Substrate preparation.
- B. Related Work: The following items are not included in this Section and are specified under the designated Sections:
1. Section 03 30 00 - CAST-IN-PLACE CONCRETE for concrete substrate; slab surface tolerances;
 2. Section 06 10 00 - ROUGH CARPENTRY for plywood substrate and surface tolerances.
- C. References (Industry Standards):
1. ASTM International (ASTM):
 - a. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials
 - b. ASTM E648 Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source
 - c. ASTM E662 Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials
 - d. ASTM F710 Standard Practice for Preparing Concrete to Receive Resilient Flooring
 - e. ASTM F1861 Standard Specification for Resilient Wall Base
 - f. ASTM F386 Standard Test Method for Thickness of Resilient Flooring Materials Having Flat Surfaces
 2. Canadian ULC Standards (CAN/ULC):
 - a. CAN/ULC-S102.2 Surface Burning Characteristics
 3. National Fire Protection Association (NFPA):

- a. NFPA 253 Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Energy Source
- b. NFPA 258 Test Method for Specific Density of Smoke Generated by Solid Materials
- c. NFPA 255 Test Method of Test of Surface Burning Characteristics of Building Materials

1.3 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures.
- B. Product Data: Submit manufacturer's technical data sheet, care & maintenance document, submittal and/or warranty for each material and accessory proposed for use.
- C. Samples: Submit representative samples of each product specified for verification.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Provide resilient flooring materials manufactured in the United States of America by a firm with a minimum of 10 years' experience with resilient flooring materials of type equivalent to those specified.
 - 1. Manufacturer's quality management system must have ISO 9001:2000 approval.
 - 2. Provide resilient flooring products, including wall base, accessories and subfloor preparation products from one manufacturer to ensure color matching and compatibility.
 - 3. Manufacturer shall be capable of providing technical training and technical field service representation.
- B. Installer Qualifications: Installer must be professional, licensed, insured and acceptable to manufacturer of resilient flooring materials. Project Managers or Field Supervisors must be INSTALL (International Standards & Training Alliance) certified, CFI (Certified Floorcovering Installers) Certified and/or an FCICA (The Flooring Contractors Association) CIM (Certified Installation Manager) for the requirements of the project.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in labeled packages. Store and handle in strict compliance with manufacturer's recommendations. Protect from damage due to weather, excessive temperatures, and construction operations.
- B. Deliver materials sufficiently in advance of installation to condition materials to the required temperature for 48-hours prior to installation.

1.6 PROJECT CONDITIONS

- A. Maintain temperature and humidity at service levels or the ambient temperature must remain steady ($\pm 10^\circ$ F) and be between 65° F and 85° F for at least 48-hours prior to, during and after installation. The ambient relative humidity is recommended to be between 40% and 65% RH; avoid dew point conditions.

1.7 WARRANTY

- A. Provide manufacturer’s standard limited commercial warranty to cover manufacturing defects.

1.8 EXTRA MATERIAL

- A. Contractor to provide 5% attic stock for owner. Coordinate storage location with owner.

PART 2 - PRODUCTS

2.1 RESILIENT WALL BASE

- A. Basis of Design Manufacturer: Roppe Corporation

1. Product Name:	Pinnacles
2. Material Specification:	ASTM F1861: Type TS – rubber, vulcanized thermoset Group 1 – solid, (homogenous) Style A – Straight, Style B – Cove, Style C – Butt-to
3. Material Height:	4” (101.6 mm)
4. Material Thickness:	ASTM F386 1/8” (3.2 mm)
5. Material Length:	48” sections (1.22 m), 120’ (36.58 m)
6. Limited Warranty:	1 year, Manufacturing Only
7. Material & Composition:	100% vulcanized homogenous rubber compound comprised of a premium blend & SBR rubber materials.
8. Color:	See finish schedule (custom colors included)
9. Surface Burning	ASTM E84/NFPA 255 Class B
10. Flammability/Critical Radiant Flux:	ASTM E648 / NFPA 253 Class 1 (>0.45 Watts per sq. cm.), .082 W/cm2
11. Smoke Density:	ASTM E662/NFPA 258 Passes (<450), 157 (flaming) - 197 (non-flaming)
12. Surface Burning:	CAN/ULC-S102.2 FSR 50, SDS 175
13. Substrate Preparation:	Per ASTM F710 and Manufacturer’s Technical Data Sheet

2.2 INSTALLATION PRODUCTS

- A. Acrylic Adhesives

1. Product Name: WB-600
 2. Product Description: Acrylic Wall Base Adhesive
 3. Product Usage: For standard, interior wall base installations over porous substrates only.

1. Product Name: AW-510
 2. Product Description: Acrylic Wet-Set Adhesive
 3. Product Usage: For interior wall base installations that require a more aggressive bond over porous substrates only

1. Product Name: C-630
 2. Product Description: Water-Based Contact Adhesive
 3. Product Usage: For interior wall base installations that require a more aggressive bond over porous or non-porous substrates.

2.3 MAINTENANCE PRODUCTS

A. Cleaners

1. Product Name: NC-900
 2. Product Description: All-Purpose pH Neutral Cleaner
 3. Product Usage: For initial, daily or routine maintenance and spot cleaning.

1. Product Name: PR-930
 2. Product Description: Performance Finish Remover
 3. Product Usage: For removal of finish that has been accidentally or erroneously applied to material.

PART 3 – EXECUTION

3.1 GENERAL

A. General Contractor's Responsibilities

1. Supply a safe, climate controlled building and subfloor as detailed in Technical Data Sheets.
2. Ensure substrate meets the requirements of ASTM F710, Technical Data Sheets and Excelsior Technical Data Sheets.
3. Ensure horizontal concrete substrates have been tested per ASTM F2170 and/or ASTM F1869 to confirm that concrete relative humidity and/or moisture vapor emission rates are within tolerance of the approved adhesive.
4. Confirm the porosity of all substrates to ensure proper adhesive usage.
5. Provide a secure storage area that is maintained permanently or temporarily at normal operating temperature and humidity conditions (except walk in freezers or similar) between 65° F and 85° F and between 40% and 65% relative humidity, for at least 48-hours prior to and during the application of the flooring, so the flooring contractor can acclimate the flooring materials per manufacturer's instructions.

6. Provide an installation area that is weather tight and maintained either permanently or temporarily at ambient service temperature and humidity (except walk in freezers or similar), normal operating temperature and humidity conditions (except walk in freezers or similar) between 65° F and 85° F and between 40% and 65% relative humidity, for at least 48-hours prior to and during the application of the flooring per the manufacturer's instructions.
7. Ensure areas with direct prolonged exposure to sunlight are protected with protective UVA/UVB restrictive coatings or films.
8. Areas of the flooring that are subject to direct sunlight through doors or windows should have them covered using blinds, curtains, cardboard or similar for the time of the installation and 72-hours after the installation to allow the adhesive to cure. Note: These areas should be installed using wet adhesives only.
9. Protect newly installed flooring with construction grade paper or protective boards, such as Masonite or Ram Board, to prevent flooring damage, especially by other trades. Limit usage and foot traffic according to the adhesive's requirements. When moving appliances or heavy furniture, protect flooring from scuffing and tearing using temporary floor protection.
10. Ensure furniture casters are made of a soft material and have a contact point of at least 1" in width to limit indentation and flooring damage. All rolling chairs or seating must have a resilient flooring chair pad installed over the finished floor to protect floor covering. All fixed furniture legs must have permanent felt or soft rubber floor protectors installed on all contact points to reduce indentation. Floor protectors must have a flat contact point of at least 1" in width and must cover the entire bottom surface of the furniture leg.
11. Conduct initial maintenance prior to final usage per the Care & Maintenance Documents. Do not conduct initial maintenance until adhesive has cured per the adhesive technical data.

B. Flooring Contractor's Responsibilities

1. Provide trained installers that are professional, licensed, insured and acceptable to manufacturer of resilient flooring materials.
2. Ensure installers or installation teams meet one of the following requirements:
 - a. Have completed INSTALL (International Standards & Training Alliance) or CFI (Certified Floorcovering Installers) training programs and/or are certified by INSTALL or CFI.
 - b. Are being supervised by Project Managers or Field Supervisors that are INSTALL (International Standards & Training Alliance) certified, CFI (Certified Floorcovering Installers) Certified and/or an FCICA (The Flooring Contractors Association) CIM (Certified Installation Manager).
3. Follow all requirements in the appropriate Excelsior Technical Data Sheets, Care & Maintenance Documents, Warranties and other technical documents or instructions.

3.2 EXAMINATION

- A. General: Follow guidelines laid out in Division 01, Section 017100 – Examination and Preparation, as well as Section 014300 – Quality Assurance.
- B. Verification of Conditions: Inspect all substrates to ensure they are clean, smooth, permanently dry, flat, and structurally sound.

3.3 SUBSTRATE PREPARATION

A. General: Follow guidelines laid out in Division 01, Section 017100 – Examination and preparation. All work required to ensure substrate or subfloor meets manufacturers guidelines are the responsibility of the general contractor.

B. Preparation: Ensure substrate meets the requirements of ASTM F710, Technical Data Sheets and Excelsior Technical Data Sheets. Substrates must be free of visible water or moisture, dust, sealers, paint, sweeping compounds, curing compounds, residual adhesives and adhesive removers, concrete hardeners or densifiers, solvents, wax, oil, grease, asphalt, visible alkaline salts or excessive efflorescence, mold, mildew and any other extraneous coating, film, material or foreign matter.

3.4 INSTALLATION

A. General: Follow all relevant guidelines detailed in Division 01, as well as flooring and adhesive manufacturer's technical data sheets.

B. Interface with Other Work: If caulking or sealing is required after installation, please contact the manufacturer for a suitable, matching caulk.

3.5 CLEANING

A. General: Clean up installation area and sweep, dust or wipe material to remove any dirt, dust or debris.

B. Initial Maintenance: Conduct initial maintenance per the manufacturer's Care & Maintenance documents

3.6 CLOSEOUT ACTIVITIES

A. General: Follow all federal, state and local requirements and Division 01 Section 017600 – Protecting Installed Construction and Section 017800 – Closeout Submittal requirements for these activities.

B. Protection: Protect newly installed material with construction grade paper or protective boards, such as Masonite or Ram Board, to protect material from damage by other trades. Limit usage and foot traffic according to the adhesive's requirements. When moving appliances or heavy furniture, protect wall base from scuffing and tearing using temporary floor protection.

END OF SECTION 09.6513

SECTION 09.9100 – PAINTING**PART 1 - GENERAL**

1.1 SECTION INCLUDES

- A. Interior paint and coating commercial systems including surface preparation.

1.2 RELATED SECTIONS

- A. Section 03 30 00 - Cast-in-Place Concrete.

1.3 REFERENCES

- A. Steel Structures Painting Council (SSPC):
 1. SSPC-SP 1 - Solvent Cleaning.
 2. SSPC-SP 2 - Hand Tool Cleaning.
 3. SSPC-SP 3 - Power Tool Cleaning.
 4. SSPC-SP5/NACE No. 1, White Metal Blast Cleaning.
 5. SSPC-SP6/NACE No. 3, Commercial Blast Cleaning.
 6. SSPC-SP7/NACE No. 4, Brush-Off Blast Cleaning.
 7. SSPC-SP10/NACE No. 2, Near-White Blast Cleaning.
 8. SSPC-SP11, Power Tool Cleaning to Bare Metal.
 9. SSPC-SP12/NACE No. 5, Surface Preparation and Cleaning of Metals by Waterjetting Prior to Recoating.
 10. SSPC-SP 13 / NACE No. 6 Surface Preparation for Concrete.
- B. Material Safety Data Sheets / Environmental Data Sheets: Per manufacturer's MSDS/EDS for specific VOCs (calculated per 40 CFR 59.406). VOCs may vary by base and sheen.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: For each paint system indicated, including.
 1. Product characteristics.
 2. Surface preparation instructions and recommendations.
 3. Primer requirements and finish specification.
 4. Storage and handling requirements and recommendations.
 5. Application methods.
 6. Cautions for storage, handling and installation.
- C. Selection Samples: Submit a complete set of color chips that represent the full range of manufacturer's products, colors and sheens available.

- D. Verification Samples: For each finish product specified, submit samples that represent actual product, color, and sheen.
- E. Coating Maintenance Manual: Upon conclusion of project, the Contractor or paint manufacturer/supplier shall furnish a coating maintenance manual, such as Sherwin-Williams, "Custodian Project Color and Product Information" report or equal. Manual shall include an Area Summary with finish schedule, Area Detail designating where each product/color/finish was used, product data pages, Material Safety Data Sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used. "

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.
- B. Paint exposed surfaces. If a color of finish, or a surface is not specifically mentioned, Architect will select from standard products, colors and sheens available.
- C. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels unless indicated.
- D. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish surfaces for verification of products, colors and sheens.
 - 2. Finish area designated by Architect.
 - 3. Provide samples that designate primer and finish coats.
 - 4. Compatibility and Adhesion: Check after one week of drying and curing by testing in accordance with ASTM D3359; Adhesion by tape test. If coating system is incompatible, additional surface preparation up to and including complete removal may be required.
 - 5. Do not proceed with remaining work until the Architect approves the mock-up.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer's name, label, and the following list of information.
 - 1. Product name, and type (description).
 - 2. Application and use instructions.
 - 3. Surface preparation.
 - 4. VOC content.
 - 5. Environmental handling.
 - 6. Batch date.
 - 7. Color number.
- B. Storage: Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

- C. Store materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect from freezing.
- D. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.8 EXTRA MATEIRALS

- A. Furnish extra paint materials from the same production run as the materials applied and in the quantities described below. Package with protective covering for storage and identify with labels describing contents. Deliver extra materials to Owner.
- B. Furnish Owner with an additional five percent of each material and color, but not less than 1 gal (3.8 l) or 1 case, as appropriate.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design: INSL-X Sure Step® (Benjamin Moore)
 - 1. Behr Paint
 - 2. PPG Architectural Finishes, Inc.
 - 3. Sherwin Williams

2.2 COMMERCIAL ANTI-SLIP COATING

- A. General Description:
 - 1. Sure Step® Anti-Slip Coating provides a durable skid resistant finish for interior or exterior application. Imparts excellent color retention, abrasion resistance and resistance to ponding water. Sure Step® is water reduced which allows for fast dry plus easy application and clean up. Sure Step® coating is formulated to have high slip resistance for areas that require extra skid resistance.
- B. Technical Data:
 - 1. Colors: See drawings
 - 2. Vehicle Type: Acrylic Copolymer
 - 3. Pigment Type: Titanium Dioxide
 - 4. Volume Solids: 38 ± 1.0%

5. Coverage per Gallon at Recommended Film Thickness 80-120 SF
6. Recommended Film Thickness: Wet 19.5 mils – Dry 7.4 mils
Depending on surface texture and porosity. Be sure to estimate the right amount of paint for the job. This will ensure color uniformity and minimize the disposal of excess paint.
7. Dry Time @ 77 °F (25 °C) @ 50% RH: Tack Free 1 – 2 Hours – To Recoat 8 Hours – Light Foot Traffic 24 Hours, Heavy Foot Traffic 4–5 Days
High humidity and cool temperatures will result in longer dry, recoat and service times.
8. Dries By: Evaporation
9. Viscosity: 110 – 115 KU
10. Flash Point: 200 °F or greater (TT-P-141, Method 4293)
11. Gloss / Sheen: Flat (<10 @ 85°)
12. Surface Temperature at Application Min. 55 °F Max. 90 °F
13. Thin With Do Not Thin
14. Clean Up Thinner: Warm, Soapy Water
15. Weight Per Gallon: 11.6 lbs.
16. Storage Temperature: Min. 45 °F Max. 95 °F

PART 3 - EXECUTION

3.1 PREPARATION

A. CONCRETE

1. UNCOATED CONCRETE

- a. All fully cured and uncoated concrete must be clean, dry and free of oil, grease, dirt, curing compounds or other foreign matter that could interfere with penetration and adhesion. Grease, release agents and dirt can be removed by scrubbing the surface with an Oil and Grease Emulsifier. Rinse well with clean water. To neutralize uncoated concrete, etch the surface with a concrete etcher. Follow all label instructions carefully. A properly etched concrete surface should exhibit the texture of fine sandpaper

2. PREVIOUSLY COATED CONCRETE

- a. Remove all oil, grease, dirt or other foreign matter by scrubbing the surface with an Oil and Grease Emulsifier. Rinse well with clean water and allow it to dry. Remove loose, flaking paint by scraping or power washing. Glossy surfaces must be dulled by sanding.

B. ASPHALT

1. UNCOATED ASPHALT

- a. Newly laid asphalt surfaces should be allowed to cure 45 to 60 days before coating. This curing time frame is necessary for all the solvents in the asphalt to evaporate. The surface must be free of dirt, loose gravel, oil or other foreign matter that could be detrimental to coating adhesion. Any oil or grease spots must be treated with an Oil and Grease Emulsifier. Best results for general preparation will be obtained by power washing; however, conscientious sweeping and water hose rinsing may suffice. Sure Step® is self – priming on bare asphalt.

2. PREVIOUSLY COATED ASPHALT
 - a. All dirt, dust, mildew, loose gravel and flaking paint should be removed by power washing. Any oil or grease spots must be treated with an Oil and Grease Emulsifier. Repairs should be made to cracked, crumbling or delaminating asphalt surfaces.
 - C. WOOD
 1. UNCOATED WOOD
 - a. Remove all dirt, dust, mildew or loose wood fibers by power washing. Allow surface to dry thoroughly. Prime uncoated wood with an oil based primer. Prime uncoated plywood with an acrylic water based primer such as Aqua Lock® Plus.
 2. PREVIOUSLY COATED WOOD
 - a. Remove all dirt, dust, chalk, mildew or flaking paint by power washing. An alternate method is to scrape, wire brush, wash the surface with a solution of one part bleach* to three parts water, then rinse thoroughly with clean water and allow it to dry. *Follow bleach manufacturer's instructions for safe handling and use of bleach solution.
 - D. METAL
 1. FERROUS METAL
 - a. UNCOATED METAL: Surface must be clean, dry and free of form oils, rust and mill scale. Any oily residue must be removed by solvent washing. Rust and mill scale must be removed by aggregate blasting or conscientious power hand tool cleaning. Prime uncoated metal with an acrylic primer.
 2. PREVIOUSLY COATED METAL
 - a. Surface must be clean, dry and free of dirt, dust, chalk, rust, mill scale and flaking paint. Commercial blast cleaning SSPC-SP 6 or power tool method SSPC-SP 2 are acceptable. Any tight adhering paint, with a gloss or semi-gloss sheen, must be dulled by sanding. Spot prime bare areas.
- 3.2 APPLICATION
- A. Sure Step® may be easily applied by roller, brush or squeegee. Stir contents thoroughly to assure even dispersion of pigment. Apply product at a rate of 80 to 120 square feet per gallon. May be recoated in 8 hours under good drying conditions.
 - B. Two coats of Sure Step® are required for proper performance. Do not apply if rain is threatening four outdoor applications.
 - C. Apply when surface and ambient temperature are above 55 °F and below 90 °F. Avoid paint application outside when weather conditions are threatening, and late in the afternoon when there is a threat of moisture condensing on wet paint. Do not paint if surface temperature is within 5 °F of the dew point.
 - D. Roller Application: Use a ½" to ¾" roller cover on a 9" frame with an extension handle. Work in areas approximately 5' X 7'. Pour about 1/3 of a gallon out in a looping "S" pattern down the middle of the 5' X 7' area. Next, evenly distribute the paint by lightly rolling the Sure Step® back and forth in slow, smooth strokes. Then, roll at right angles to your previous pass to completely even out the paint film thickness. The last step is the finishing stroke. Starting in the far upper corner set the roller down and with no pressure applied draw it back toward you to the end of the painted area. Then pick up the

roller and overlapping your last stroke and continue with the finishing process until the entire 5' X 7' area is covered. Continue by following the same technique with another 5' X 7" area until the job is completed. If Sure Step® sets too quickly (application on a hot, dry day) it may be advisable to thin with water or pre-wet the surface with a hose.

- E. Brush Application: Sure Step® can be applied by brush. This type of application should be limited to small areas such as steps or trimming out the edges of larger areas before using a squeegee or roller.
- F. Use only with adequate ventilation. Do not breathe spray mist or sanding dust. Ensure fresh air entry during application and drying. Avoid contact with eyes and prolonged or repeated contact with skin. Avoid exposure to dust and spray mist by wearing a NIOSH approved respirator during application, sanding and clean up. Follow respirator manufacturer's directions for respirator use. Close container after each use. Wash thoroughly after handling.

3.3 CLEANING AND PROTECTION

- A. Clean tools and equipment immediately with soap and warm water.
- B. USE COMPLETELY OR DISPOSE OF PROPERLY.
- C. Dry empty containers may be recycled in a can recycling program. Local disposal requirements vary; consult your sanitation department or state designated environmental agency on disposal options.

3.4 FINISH

- A. Finished surfaces shall be uniform in finish and color and free of brush marks, sagging, corduroy and other imperfections. Should any coat be judged unsatisfactory, sandpaper or otherwise clean off this coat and apply another. If the undercoating is disturbed, complete refinishing will be required. Where necessary for proper coverage, one additional coat shall be applied by the painter without any additional cost to the Owner.
- B. Edges of paint or finish adjoining other materials or colors shall be sharp and clean without overlapping.
- C. Should workmanship be found defective, proper preparatory work shall be done and additional coats applied as necessary to give finish in accordance with specified requirements.

END OF SECTION 09.9000

SECTION 09.9100 – PAINTING**PART 1 - GENERAL**

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes surface preparation and the application of paint systems.
- B. Paint and finish all new and existing, exterior and interior exposed surfaces throughout the building as indicated on the Drawings, as listed on the Painting Schedule in Part 3 of this Section, as specified herein, and as needed for a complete and proper installation.
- C. Work not included:
 - 1. Unless otherwise indicated, painting is not required on surfaces in concealed areas and inaccessible areas such as furred spaces and the area above suspended ceilings;
 - 2. Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze, and similar finished materials will not require painting under this Section unless otherwise indicated;
 - 3. Do not paint moving parts of operating units; mechanical or electrical parts such as valve operators, linkages, sensing devices, and motor shafts, unless otherwise indicated;
 - 4. Do not paint over required labels or equipment identification, performance rating, name, or nomenclature plates;
 - 5. Metal surfaces of pre-finished galvalume and galvanized steel, metal roofing, metal fascia and trims, metal siding, metal ceiling, all galvanized bollards, all exposed zinc coated steel plates, anchors, and fasteners, etc. that have galvalume or galvanizing will not require painting under this Section unless otherwise indicated.
- D. Definitions: "Paint" or "Epoxy" as used herein, means coating systems materials including primers, emulsions, epoxy enamels, sealers, fillers, and other applied materials whether used as prime, intermediate, or finish coats.
- E. Related work: Priming or priming and finishing of certain surfaces may be specified to be factory-performed or installer-performed under pertinent other Sections.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Initial Selection: For each type of topcoat product indicated.

- C. Samples for Verification: For each type of paint system and in each color and gloss of topcoat indicated.
1. Submit Samples on rigid backing, 8 inches square.
 2. Step coats on Samples to show each coat required for system.
 3. Label each coat of each Sample.
 4. Label each Sample for location and application area.
- D. Product List: For each product indicated, include the following:
1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
- E. Color selection and samples:
1. Colors will be selected by the Architect from one or more of the specified manufacturers paint lines. Submit samples on rigid cardboard 8-1/2 inches by 11 inches in size with the Architects scheduled colors and glosses applied, for approval before starting work. Sample panels shall be resubmitted to the Architect until final approval is granted. Finished work shall match approved samples;
 2. The Architect may select, allocate, and vary colors on different surfaces throughout the Work, subject to the following:
 - a. Exterior work: A maximum of four different colors will be used, with variations for trim, doors, miscellaneous work, and metal work;
 - b. Interior work: A maximum of eight different pigmented colors will be used, with variations for trim, wall surfaces and wainscots;
 - c. Dark tones: A maximum of four dark tones will be used as accent colors for the interior;

1.4 QUALITY ASSURANCE

- A. MPI Standards:
1. Products: Complying with MPI standards indicated and listed in "MPI Approved Products List."
 2. Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.
1. Maintain containers in clean condition, free of foreign materials and residue.
 2. Remove rags and waste from storage areas daily.

1.6 PROJECT CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.
- B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.
- C. Protection:
 - 1. Remove or protect during painting, all finish hardware, accessories, fixtures, plates, lighting fixtures, and similar items installed prior to painting and not required to be painted. If removed, carefully replace and adjust on completion of painting;
 - 2. Furnish and lay drop cloths in all areas where painter's finish work is being done, to protect floors and all other adjacent work and materials from defacement. Remove all temporary protections and coverings from the work and repair or replace finishes;
 - 3. Any damage resulting from neglect of the above requirements shall be repaired at the Contractor's expense to the complete satisfaction of the Architect.
- D. Environmental Conditions:
 - 1. No exterior painting shall be done in rainy, damp or frosty weather, or until surface is thoroughly dry. No interior painting or finishing shall be permitted until the building has reached a temperature and humidity level recommended by the manufacturer of the paint products being applied;
 - 2. Maintain temperature of rooms at 70 degrees F or higher where varnish, lacquer or enamel is being applied and at 50 degrees F or higher during other painting and finishing. Exterior painting shall be done only when air temperature is 40 degrees F or higher and only in dry weather;
 - 3. Apply material under adequate illumination and ventilation;
 - 4. In the event excessive moisture is present, the General Contractor shall provide the necessary ventilation to establish appropriate conditions. Should the surface be too dry for the product application, the Painting Contractor shall provide the necessary methods to establish the appropriate conditions.

1.7 EXTRA MATERIALS

- A. Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents.
 - 1. Quantity: Furnish an additional 10 percent, but not less than 1 gallon of each material and color applied.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: All paint materials and their related products specified herein are based on products of first grade and top line manufactured products, of Sherwin-Williams Company. Subject to

compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Benjamin Moore & Co.
2. PPG Architectural Finishes, Inc.

- B. Semi-transparent colored stain for architectural millwork items shall be by Minwax, or alternatives of the quality necessary to meet the specifications, offering a range of colored semi-transparent colored stain selections, and as approved by the Architect.

2.2 PAINT, GENERAL

A. 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.

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 work. Correct conditions detrimental to timely and proper completion of the Work prior to proceeding.
- 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. Plaster: 12 percent.
 5. Gypsum Board: 12 percent.
 6. Plaster: 12 percent.
- C. Verify suitability of substrates, including surface conditions and compatibility with finishes and primers.
- D. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Remove plates, machined surfaces, and similar items already in place that 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.
 - 2. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
- C. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.
 - 1. Remove incompatible primers and reprime substrate with compatible primers as required to produce paint systems indicated.
- D. Spackle all wall cracks, voids and similar imperfections, in drywall and plaster.
- E. Clean all metal free from dust and grease and carefully wire brush to remove all rust or scale. Sand badly rusted spots until metal is clean. Sheet metal, steel and cast wrought iron with priming coat applied, shall be cleaned of debris, and if necessary, the marred surfaces shall be primed before applying the first coat. Clean and lightly sand prefinished metals, such as rooftop mechanical equipment thoroughly before applying the first coat.
- F. Galvanized materials shall receive a prime coating of an approved galvanized primer, such as zinc dust. Apply zinc chromate or an equivalent primer as recommended by the paint and aluminum alloy manufacturer to aluminum work, which is specified or noted as being painted.
- G. Thoroughly clean, sand, and wipe woodwork to remove all surface dirt.
 - 1. Fill nail holes or similar imperfections smooth with putty after prime coat has become dry and hard. On natural finish wood, the nail hole compound shall be pigmented to match the face veneer.
- H. Prepare surfaces of masonry to be painted in strict conformance with the recommendations of the paint manufacturer. Insure that all loose material and material that will dust or dislodge when lightly abraded has been completely removed from masonry surfaces before the application of paint materials.
- I. Prepare previously painted and prime coated product surfaces in strict conformance with the recommendations of the Paint Manufacturer. All previously painted surfaces shall be thoroughly cleaned before applying the first coat.

3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions.
 - 1. Apply materials with roller or brush, except that spraying will be permitted for items such as mechanical equipment, grilles, or similar items. Mask off adjoining areas not receiving a spray finish against overspray.
 - 2. Paint surfaces behind movable equipment and furniture items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture items with prime coat only.
 - 3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
- E. Allow exterior paints and finishes to dry at least 48 hours between coats. Allow interior paints to dry at least 24 hours between coats. Allow enamels, lacquers and varnishes to dry at least forty-eight hours between coats. Sand lightly between coats with No. 00 sandpaper and dust well before succeeding coat is applied. Allow additional drying time if conditions warrant, to assure that all coats are perfectly dry before applying succeeding coats.
- F. Review with the Architect prior to application the surface texture of all painting and finishing. Submit samples, if requested, for approval.
- G. All materials throughout shall receive the manufacturer's recommended primer before the finish coats are applied. Touch-up shop applied prime coats, which have been damaged, and touch-up bare areas prior to start of finish coats application.
- H. Miscellaneous surfaces and procedures:
 - 1. Exposed mechanical items:
 - a. Finish electric panels, access doors, conduits, pipes, ducts, grilles, registers, vents, hangers, and items of similar nature to match adjacent wall and ceiling surfaces, or as directed;
 - b. Paint visible duct surfaces behind vents, registers, and grilles flat black;
 - c. The painting of mechanical piping and equipment shall include the painting of non-ferrous piping and valve and trap bodies in finished spaces;
 - d. Paint exterior louvers, dampers, and grilles in colors as selected by the Architect;
 - 2. Exposed electrical items: Paint all exterior electrical items in colors as selected by the Architect;
 - 3. Paint hollow metal and miscellaneous metal installations in unfinished spaces;

4. Paint metal doors in unfinished spaces.

3.4 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 FINISH

- A. Finished surfaces shall be uniform in finish and color and free of brush marks, sagging, corduroy and other imperfections. Should any coat be judged unsatisfactory, sandpaper or otherwise clean off this coat and apply another. If the undercoating is disturbed, complete refinishing will be required. Where necessary for proper coverage, one additional coat shall be applied by the painter without any additional cost to the Owner.
- B. Edges of paint or finish adjoining other materials or colors shall be sharp and clean without overlapping.
- C. Should workmanship be found defective, proper preparatory work shall be done and additional coats applied as necessary to give finish in accordance with specified requirements.

3.6 PAINTING SCHEDULE

- A. The following paint schedule shall generally cover the type of paint required for the project based on Sherwin Williams Company. Verify finishes with finish schedule and Architect prior to application. Verify first coat in accordance with manufacturer's recommendation for previously painted surfaces.

INTERIOR PAINT SCHEDULE

Masonry and Concrete – ceilings and soffits - flat finish

Primer: Loxon Concrete and Masonry Primer
2 finish coats: ProMar 200 Zero VOC flat

Masonry and Concrete – eggshell finish

Primer: Loxon Concrete and Masonry Primer

2 finish coats: ProMar 200 Zero VOC eggshell

CMU – eggshell finish

Filler: ProIndustrial HD Block Filler
2 finish coats: ProMar 200 Zero VOC eggshell

CMU –Pre-Catalyzed EPOXY (eggshell finish or semi-gloss finish)**Light Commercial, Dry Laboratories and Rest Rooms**

Filler: ProIndustrial HD Block Filler
2 finish coats: ProIndustrial Pre-Catalyzed Water-Based Epoxy
semi-gloss

Gypsum – ceilings and soffits- flat finish

Primer: ProMar Ceiling Paint flat
Finish coat: ProMar Ceiling Paint flat

Gypsum – eggshell finish

Primer: ProMar 200 Zero Primer
2 finish coats: ProMar 200 Zero VOC eggshell

Gypsum – semi-gloss finish

Primer: ProMar 200 Zero VOC Primer
2 finish coats: ProMar 200 Zero VOC semi-gloss

Gypsum – Pre-Catalyzed EPOXY**Light commercial, Dry Laboratories and Rest Rooms**

Primer: ProMar 200 Zero VOC Primer
2 finish coats: ProIndustrial Pre-Catalyzed Water-Based Epoxy
eggshell

Wood- painted – semi-gloss finish

Primer: ProMar 200 Zero VOC Primer
2 finish coats: Solo 100% Acrylic Latex, semi-gloss

Ferrous Metal and Non-Ferrous Metal – Doors, Frames, non-traffic Stair components and miscellaneous Metals, including elevator frames and doors

Primer: ProIndustrial Pro-Cryl Universal Primer
2 finish coats: ProIndustrial Pre-Catalyzed Water-Based Epoxy, semi-gloss
semi gloss

Concrete Floors – (pigmented or clear)

2 finish coats: ArmorSeal 8100 WB Epoxy coating,

Exposed Ceilings:

Primer (Ferrous and Non-Ferrous Metal): ProIndustrial Pro-cryl Universal Primer
2 coats: Low VOC Waterborne Acrylic Dryfall, **Flat** B42-W00081
OR Low VOC Waterborne Acrylic Dryfall, **Eg-shell** B42-W00082

EXTERIOR SCHEDULE

Exterior AES

Primer: MacroPoxy 646 Epoxy
2 finish coats: Hi Solids Polyurethane, semi-gloss

Ferrous Metal and Non-Ferrous Metal – Doors, Frames, Stair components and miscellaneous metals
Includes, but is not limited to, elevator frames and doors

Primer: ProIndustrial Pro-Cryl Universal Primer
2 finish coats: ProIndustrial WB Alkyd Urethane Enamel, B53 series, semi-gloss

END OF SECTION 09.9100

SECTION 10.1100 - VISUAL DISPLAY UNITS**PART 1 - GENERAL**

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

- 1. Markerboards.

B. Related Requirements:

- 1. Section 061000 "Rough Carpentry" for proper blocking and other anchorages required to sustain visual display units.
- 2. Section 097723 "Fabric-Wrapped Panels" for tackable, fabric-covered panels mounted on walls.
- 3. Section 099123 "Interior Painting" for the use of primers and sealants when visual display assemblies are adhered to walls with adhesive.
- 4. Section 101200 "Display Cases" for bulletin boards and display cases.
- 5. Section 101146 "Visual Display Fabrics" for visual display wall coverings intended for use with dry-erase markers.

1.3 REFERENCES

- A. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- B. ASTM C 208 - Standard Specification for Cellulosic Fiber Insulating Board.
- C. ASTM E 84 - Standard Test Method for Surface Burning Characteristics for Building Materials.
- D. Federal Specifications (FS) CCC-W-408D - Wall Covering, Vinyl Coated.
- E. Porcelain Enamel Institute PEI-1002 - Manual and Performance Specifications for Porcelain Enamel Writing Surfaces.
- F. ANSI A 135.1 - Hardboard.
- G. ANSI A 208.1 - Particleboard.

1.4 ACTION SUBMITTALS

A. Product Data:

1. Include manufacturer's technical data sheets, listing construction details, material descriptions, dimensions of individual components and profiles, finishes, and accessories for visual display units.

B. Shop Drawings:

1. Include dimensioned plans, elevations, details, and attachment(s) to other work. Show anchors and accessories.
2. Show locations of panel joints. Show locations of field-assembled joints for factory-fabricated units too large to ship in one piece.
3. Include sections of typical trim members.

C. Samples for Initial Selection: For each type of visual display unit indicated, for units with factory-applied color finishes, and as follows:

1. Samples of facing, core, and backing for each visual display panel type, indicating color and texture.

D. Samples for Verification:

1. Visual Display Panel: Not less than 13 by 17 inches (330 by 431 mm), with facing, core, and backing indicated for final Work. Include one panel for each type, color, and texture required.
2. Trim: 6-inch- (150-mm-) long sections of each trim profile.
3. Display Rail: 6-inch- (150-mm-) long section of each type.
4. Accessories: Full-size Sample of each type of accessory.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: Provide manufacturer's standard care and cleaning instructions, installation guide, and a clean copy of the final approved submittals for owner's records.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver factory-fabricated visual display units completely assembled in one piece. If dimensions exceed maximum manufactured unit size, or if unit size is impracticable to ship in one piece, provide two or more pieces with joints in locations indicated on approved Shop Drawings.
- B. Ship products upright in a manner providing proper protection.
- C. Provide factory-installed protective covering for markerboards. Do not remove until after installation

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install visual display units until spaces are enclosed and weather-tight, wet-work in spaces is complete and dry, work above ceilings is complete, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.
- B. Field Measurements: Verify actual dimensions of construction relevant to visual display units before fabrication.

1.8 WARRANTY

- A. Markerboards: Provide manufacturer’s life of the building warranty providing coverage against loss of original writing or erasing capabilities, crazing, cracking, flaking, and staining of the porcelain enamel writing surface.
- B. Tackboards: Provide manufacturer’s five-year warranty providing coverage against manufacturing defects in material and workmanship for all tackable surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations: Obtain each type of visual display unit from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified independent testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Flame-Spread Index: 25 or less.
 - 2. Smoke-Developed Index: Less than 450.

2.3 MARKERBOARDS

-
- A. Basis-of-Design Product: Subject to compliance with requirements, provide AJW Architectural Products; Markerboards or comparable product by one of the following:
 - 1. Claridge
 - 2. Moore Co.
 - 3. Egan Visual Inc.
 - 4. Aarco Products

 - B. Substitutions: Under provisions of Division 01.

- C. Markerboard Assembly:
1. Height: As indicated on Drawings
 2. Width: As indicated on Drawings
 3. Mounting Method: Direct to wall.
- D. Markerboard Panel: Balanced, high-pressure laminated, porcelain enamel-faced panels, of three ply construction consisting of face sheet, core material, and backing.
1. Porcelain Face Sheet: Enameling grade cold-rolled steel, specially processed for temperatures used in coating porcelain on steel. Coat faces and exposed edges with three coat process consisting of primer, ground coat, and color cover coat.
 2. Core Material: 1/2 inch (13 mm) thick particleboard, ANSI 208.1, Grade 1-M-1.
 3. Backing Sheet: Manufacturer's standard aluminum foil sheet.
 4. Laminating Adhesive: Manufacturer's standard moisture resistant thermoplastic adhesive.
- E. Fabricated from not less than 0.062-inch- (1.57-mm-) thick, extruded aluminum; 3/4 inch (19 mm) Flat Trim.
1. Aluminum Finish: Clear anodized finish.
- F. Joints: Make joints only where total length exceeds maximum manufactured length. Fabricate with minimum number of joints, as indicated on approved Shop Drawings.
- G. Marker Tray: Continuous.
1. Box Type: Extruded aluminum with slanted front, grooved tray, and cast-aluminum end closures.
 2. Aluminum Finish: Match finish of visual display assembly trim.
- H. Special-Purpose Graphics: Fuse or paint the following graphics into surface of porcelain-enamel visual display unit:
1. Music staff lines. Provide on one markerboard in each of Rooms B-245 and B-247. Area of "music staff" lining shall be five staves high, 1/16 inch lines, one inch on center and 5 inches space between staves, by full length of board. Locate on board as directed by Architect.
 1. Profile: 2 inch (50 mm)
 2. Tackable Insert: 1/4 inch (6.4 mm) Natural Cork

2.4 MATERIALS

- A. Porcelain-Enamel Face Sheet: PEI-1002, with face sheet manufacturer's standard three-coat process.
- B. Hardboard: ANSI A135.4, tempered.
- C. Particleboard: ANSI A208.1, Grade 1-M-1 that complies with the testing and product requirements of the California Department of Public Health's (formerly, the California Department of Health Services) "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

- D. Fiberboard: ASTM C 208 cellulosic fiber insulating board.
- E. Extruded Aluminum: ASTM B 221 (ASTM B 221M), Alloy 6063.
- F. Adhesives for Field Application: Mildew-resistant, nonstaining adhesive for use with specific type of panels, sheets, or assemblies; and for substrate application; as recommended in writing by visual display unit manufacturer.
 - 1. Adhesives shall have a VOC content of 50 g/L or less.
 - 2. Adhesives shall comply with the testing and product requirements of the California Department of Public Health's (formerly, the California Department of Health Services') "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- G. Primer/Sealer: Mildew-resistant primer/sealer complying with requirements in Section 099100 "Interior Painting" and recommended in writing by visual display unit manufacturer for intended substrate.

2.5 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.6 ALUMINUM FINISHES

- A. Clear Anodized Finish: AAMA 611, AA-M12C22A31, Class II, 0.010 mm or thicker, to be used in all classroom whiteboards and tackboards.
- B. Powder-Coat Finish: AAMA 2603, except with a minimum dry film thickness of **1.5 mils** (0.04 mm). Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish. Powder-Coat Finish to be used in all corridors, color to be selected by architect

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine all work areas and verify that all applicable measurements, structural supports, backing, and environmental conditions are in accordance with manufacturer's prerequisites for installation.

- B. Examine walls and partitions for proper preparation and backing for visual display units.
 - C. Examine walls and partitions for suitable framing depth where sliding visual display units will be installed.
 - D. Proceed with installation only after the above criteria is met.
-
- A. Comply with manufacturer's written instructions for surface preparation.
 - B. Clean substrates of substances, such as dirt, mold, and mildew, that could impair the performance of and affect the smooth, finished surfaces of visual display boards.
 - C. Prepare surfaces to achieve a smooth, dry, clean surface free of flaking, unsound coatings, cracks, defects, projections, depressions, and substances that will impair bond between visual display units and wall surfaces.
 - D. Prepare recesses for sliding visual display units as required by type and size of unit.

3.2 INSTALLATION

- A. General: Install visual display surfaces in locations and at mounting heights indicated on Drawings, or if not indicated, at heights indicated below. Keep perimeter lines straight, level, and plumb. Provide grounds, clips, backing materials, adhesives, brackets, anchors, trim, and accessories necessary for complete installation.
- B. Field-Assembled Visual Display Board Assemblies: Coordinate field-assembled units with grounds, trim, and accessories indicated. Join parts with a neat, precision fit.
- C. Make joints only where total length exceeds maximum manufactured length. Fabricate with minimum number of joints, as indicated on approved Shop Drawings.
- D. Where size of visual display board assemblies or other conditions require support in addition to normal trim, provide structural supports or modify trim as indicated or as selected by Architect from manufacturer's standard structural support accessories to suit conditions indicated.
- E. Factory-Fabricated Visual Display Board Assemblies: Attach concealed clips, hangers, and grounds to wall surfaces and to visual display board assemblies with fasteners at not more than 16 inches (400 mm) o.c. Secure tops and bottoms of boards to walls.
- F. Mounting Height for Grades K through Fifth 26 inches (610 mm) above finished floor to top of marker tray.
- G. Display Rails: Install rails at mounting heights indicated on Drawings, or if not indicated, at height indicated below. Attach to wall surface with fasteners at not more than 16 inches (400 mm) o.c.

- H. Floor-to-Ceiling Tackboard Panels: Attach panels to wall surface in accordance with Forbo's installation guidelines.

3.3 CLEANING AND PROTECTION

- A. Remove temporary protective coatings.
- B. Clean visual display units according to manufacturer's written instructions. Attach one removable cleaning instructions label to visual display unit in each room.
- C. Touch up factory-applied finishes to restore damaged or soiled areas.
- D. Touch up factory-applied finishes to restore damaged or soiled areas.
- E. Cover and protect visual display units after installation and cleaning.

3.4 FINAL CLEANUP

- A. Legally dispose of all packaging and construction debris.

END OF SECTION 10.1100

SECTION 10.1400 – INTERIOR TACTILE SIGNAGE**PART 1 - GENERAL**

1.1 SECTION INCLUDES

- A. Interior panel signs.

1.2 REFERENCES

- A. Department of Justice - Title II regulation (28CFR Part 35) and Title III regulation (28 CFR Part 36).
- B. ICC/ANSI A117.1 2003 Standard on Accessible and Useable Buildings and facilities or applicable standards of authorities having jurisdiction.
- C. ADA Accessibility Guidelines for Buildings and Facilities – ADAAG.

1.3 SUBMITTALS

- A. Submit the following according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product Data: Manufacturers descriptive literature for each sign product specified including installation instructions.
- C. Shop Drawings: Elevation and plan drawings for each sign type showing: material, thickness, color, design, shape, size, edge, corner; text, Braille and/or pictogram layout, and components.
- D. Sample: Provide a sample of each sign product specified to verify compliance with the drawings and specifications.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Store products in protective packaging until ready for installation.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of Design Product: Subject to compliance with requirements, provide the following or a comparable product by one of the available manufactureres indicated:
 - 1. Provide signs based on ASE, Inc. Product Series: IN 500 – Inlayed Acrylic: Architectural Signs & Engraving, (ASE, Inc.)
- B. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be considered to be incorporated into the Work include, but are not limited to, the following:
 - 1. Inpro Corp
 - 2. Identity Group
 - 3. Fast Signs

4. iSign
- C. Contractor must submit any product not specified a minimum ten (10) days before the bid date to Architect in order for product to be considered for approval. The Architect will notify Contractor in writing of decision to accept or reject request.
- D. Substitutions: Products proposed as equal to the products specified in this Section shall be submitted in accordance with Bidding Requirements and Division 1 provisions.
1. Include a list of three (3) projects of similar type and extent, located within a one hundred mile radius from the location of the project. In addition, the three projects must be at least five (5) years old and be available for inspection by the Architect, Owner or Owner's Representative.
 2. Equivalency of performance criteria, warranty terms, submittal procedures, and contractual terms will constitute the basis of acceptance.
 3. The Owner's decision regarding substitutions will be considered final. Unauthorized substitutions will be rejected.

2.2 MATERIALS

- A. Acrylic sheet: Cast methyl methacrylate monomer plastic sheet
- a. 1. ASTM D790 minimum flexural strength – 16,000 psi.
 - b. 2. Maximum continuous temperature – 180 – 200 degrees F.
 - c. 3. Matte non-glare finish.
- B. Single ply modified acrylic plate.
- a. 1. UV stable.
 - b. 2. Matte non-glare finish.
- C. Lexan: Polycarbonate resin thermoplastic

2.3 FABRICATION

- A. Signs shall comply with the regulations and standards referenced in 10440.1.2.
- B. Acrylic sheet shall be CNC cut to specifications with square or radius corners, and/or custom shapes.
- C. Identically sized 1/32 inch modified acrylic plate shall be adhered to the acrylic plate with a high bond chemical adhesive and the text and/or symbols shall be CNC cut to specifications. Text and/or symbols shall be removed from the sign face.
- D. Corresponding text and/or symbols shall be CNC cut from 1/16 inch modified acrylic embedded 1/32 inch and chemically welded to the acrylic plate.
- E. Domed grade 2 Braille shall be embedded in the surface.
- F. Comply with requirements indicated for material, thickness, color, finish, design, shape, size and details of construction.
- G. Text and symbols shall contrast with their background, i.e. light characters on a dark background or dark characters on a light background.

2.4 SIGNS

- A. Provide signs in accordance with Section 10440.3.4 (See sign schedule and drawings.)
- B. Inlaid acrylic signs:
 - a. Text and graphics color to be selected by Architect from manufacturers standard colors.
 - b. Background color to be custom color as selected by Architect
 - c. Sign size: Refer to sign schedule and/or drawings.
 - d. Text size: [5/8 inch high (min)][Size], raised 1/32 inch, with grade 2 Braille below text.
 - e. Graphics: International symbols for indicated information.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Verify that substrate has been properly prepared and that surfaces are cured.
- B. Notify Architect of unsatisfactory preparation before proceeding.

3.2 INSTALLATION

- A. Locate signs where indicated or directed by Architect. Install level and plumb in accordance with manufacturers recommendations.
- B. Locate in accordance with Section 10440.1.2.
- C. Wall Mounted Signs: Comply with sign manufacturer's written instructions except where more stringent requirements apply
 - 1. Concealed screw mounting: Mount signs by inserting threaded studs into tapped lugs on back of signs. Set in a predrilled holes filled with quick-setting cement.

3.3 PROTECTION

- A. Protect installed products until project completion. Clean signs according to manufacturers instruction.

3.4 SCHEDULES

- A. Room identification signage: Provide room identification signs for all rooms listed on the room finish schedules except for the following:
 - 1. Vestibule
 - 2. Corridors
 - 3. Passage
- B. Directional Signage: Whether indicated or not, provide directional signage which indicates the route to the nearest like accessible element at the following locations:
 - 1. Inaccessible building entrances

2. Inaccessible public toilets
3. Elevators not serving an accessible route

END OF SECTION 10.1400

SECTION 10.2113 – TOILET COMPARTMENTS**PART 1 - GENERAL**

1.1 SECTION INCLUDES

A. Solid plastic toilet compartments including the following:

1. Floor mounted overhead-braced toilet compartments.
2. Privacy screens.

1.2 RELATED SECTIONS

A. Section 05 50 00 - Metal Fabrications.

B. Section 06 10 00 - Rough Carpentry.

1.3 REFERENCES

A. ASTM A 666 - Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.

B. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

C. National Fire Protection Association (NFPA) 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth.

D. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

1.4 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Product Data: Manufacturer's data sheets on each product to be used, including:

1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.

C. Shop Drawings: Provide layout drawings and installation details with location and type of hardware required.

D. Verification Samples: For each finish product specified, two samples representing actual product, color, and patterns.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: A company regularly engaged in manufacture of products specified in this section, and whose products have been in satisfactory use under similar service conditions for not less than 5 years.

B. Installer Qualifications: A company regularly engaged in installation of products specified in this Section, with a minimum of 5 years experience.

C. Materials: Doors, panels and pilasters, constructed from high density polyethylene (HDPE) resins. Partitions to be fabricated from polymer resins compounded under high pressure, forming a single component which is waterproof, nonabsorbent and has a self-lubricating surface that resists marks from pens, pencils, markers and other writing instruments. Cover all plastic components with a protective plastic masking.

D. Performance Requirements:

1. Fire Resistance: Partition materials shall comply with the following requirements, when tested in accordance with ASTM E 84:

- a. Class A flame spread/smoke developed rating.
- b. Class B flame spread/smoke developed rating.

2. Material Fire Ratings:

- a. National Fire Protection Association (NFPA) 286: Pass.
- b. International Code Council (ICC): Class B.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

1.7 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.8 WARRANTY

A. Manufacturer guarantees its plastic against breakage, corrosion, and delamination under normal conditions for 25 years from the date of receipt by the customer. If materials are found to be defective during that period for reasons listed above, the materials will be replaced free of charge. Labor not included in warranty.

PART 2 – PRODUCTS

2.1 MANUFACTURER

A. Basis of Design: Reference Drawings:

B. Or Equals:

1. Bobrick Washroom Equipment, Inc.
2. Bradley Corporation; Mills Partitions.
3. Capitol Partitions, Inc.

2.2 MATERIAL

A. Plastic Panels: High density polyethylene (HDPE) suitable for exposed applications, waterproof, non-absorbent, and graffiti-resistant textured surface.

1. Recycled Content; Post Industrial: 25 percent.
2. Recycled Content; Post Industrial: 100 percent.
3. Recycled Content; Post Consumer: 100 percent.

B. Zinc Aluminum Magnesium and Copper Alloy (Zamac): ASTM B 86.

C. Stainless Steel Castings: ASTM A167, Type 304.

D. Aluminum: ASTM 6463-T5 alloy.

2.2 SOLID PLASTIC TOILET COMPARTMENTS

A. Basis of Design: Hiny Hiders Toilet Partitions as manufactured by and supplied by Scranton Products.

1. Style: Floor mounted overhead-braced toilet compartments.

B. Doors, Panels, and Pilasters: 1 inch (25 mm) thick with all edges rounded to a radius. Mount doors and dividing panels based on height of specified system.

1. Door and Panel Height: 55 inches (1397 mm).
2. Aluminum heat sink fastened to bottom edges.
3. Door: Flat
4. Panel Edge: Standard.
5. Pilasters: 82 inches (2083 mm) high and fastened to floor.

C. Panel Color: Traditional Series.

1. Grey - Orange Peel.

D. Pilaster Shoes: 3 inches (76 mm) high type 304, 20 gauge stainless steel. Secured to pilasters with a stainless steel tamper resistant Torx head sex bolt.

E. Headrail: Heavy-duty extruded 6463-T5 alloy aluminum with anti-grip design. Finish to be clear anodized. Fastened to headrail brackets with stainless steel tamper resistant Torx head sex bolt, and fastened at the top of the pilaster with stainless steel tamper resistant Torx head screws.

1. Headrail Brackets: 20 gauge stainless steel with satin finish. Secured to the wall with stainless steel tamper resistant Torx head screws.

F. Wall Brackets:

1. Stainless Steel Brackets: Stainless steel type 304.
2. Brackets are fastened to pilasters with stainless steel tamper resistant Torx head screws and fastened to the panels with stainless steel tamper resistant Torx head sex bolts.

3. Bracket Type: Stirrup stainless steel double ear.
4. Bracket Type: Stirrup stainless steel single ear.

G. Door Hardware:

1. Continuous Aluminum Hinge:
 - a. Length: 54 inches (1372 mm).
2. Wrap-Around Hinges: 8 inches (203 mm) and fabricated from heavy-duty extruded aluminum. Hinges are through-bolted to pilasters and doors with stainless steel tamper resistant Torx head sex bolts. Hinges operate with field adjustable nylon cams. Cams can be field set in 30, 60 or 9 degree increments.
3. Door Strike/Keeper: Heavy-duty extruded aluminum 6436-T5 alloy with a bright dip anodized finish. Secured to pilasters with stainless steel tamper resistant Torx head sex bolts. Bumper shall be made of extruded black vinyl.
 - a. Style: 6 inches (152 mm) aluminum.
4. Aluminum Slide Bolt Latch and Housing: Heavy-duty extruded 6463-T5 alloy aluminum. Latch and housing to have a bright dip anodized finish. Slide bolt and button to have a black anodized finish.
5. Doors supplied with one coat hook/bumper and door pull made of chrome plated Zamak.
6. Equip outswing handicapped doors with second door pull and door stop.

2.3 SOLID PLASTIC PRIVACY SCREENS

A. Provide plastic privacy screens in urinal and entry toilet room applications as indicated or scheduled.

B. Panels, and pilasters, if required, 1 inch (25 mm) thick with edges rounded to a radius. Screens to be mounted at 14 inches (356 mm) above the finished floor. Color as selected by Architect from manufacturer's full line of current colors.

1. Aluminum heat sink fastened to bottom edges.
2. Recycled content: Minimum 25 percent.

C. Screen Type: Wall mounted.

1. Urinal Screens: 24 inches (610 mm) wide by 42 inches (1067 mm) high.

D. Wall Brackets: Extruded PVC plastic. Fastened to the panel/pilaster with stainless steel tamper resistant torx head screws and fastened to wall with stainless steel tamper resistant torx head sex bolts.

1. Length of Wall Brackets: 41 inches (1041 mm).
2. Bracket Color: Grey.

E. Aluminum Slide Bolt Latch and Housing: Heavy-duty extruded 6463-T5 alloy aluminum. Latch and housing to have a bright dip anodized finish. Slide bolt and button to have a black anodized finish.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Examine areas to receive toilet partitions, screens, and shower compartments for correct height and spacing of anchorage/blocking and plumbing fixtures that affect installation of partitions. Report discrepancies to the architect.

3.3 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install partitions rigid, straight, plumb, and level manor, with plastic laid out as shown on shop drawings.

C. Clearance at vertical edges of doors shall be uniform top to bottom and shall not exceed 3/8 inch (9.5 mm).

D. No evidence of cutting, drilling, and/or patching shall be visible on the finished work.

E. Finished surfaces shall be cleaned after installation and be left free of imperfections.

3.4 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 10.2100

SECTION 10.2600 – WALL AND DOOR PROTECTION**PART 1 – GENERAL**

1.1 SUMMARY

- A. Non PVC sheet for wall protection and decoration

1.2 SECTION INCLUDES

- A. Palladium® G2 Sheet

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM)
- B. National Fire Protection Association (NFPA)
- C. Society of Automotive Engineers (SAE)

1.4 SYSTEM DESCRIPTION

A. Performance Requirements: Provide Palladium® G2 Sheet that conforms to the following requirements of regulatory agencies and the quality control of IPC Door and Wall Protection Systems™, InPro Corporation.

1. Fire Performance Characteristics: Provide Palladium® G2 Sheet material conforming with the NFPA Class A fire rating. Surface burning characteristics, as determined by ASTM E-84, shall be flame spread of 25 or less and smoke development of 450 or less.
2. Impact Strength: Provide materials that have been tested in accordance with the applicable provisions of ASTM D-256, Impact Resistance of Plastics.
3. Chemical and Stain Resistance: Provide material that shows resistance to stain when tested in accordance with applicable provisions of ASTM D-543.
4. Fungal and Bacterial Resistance: Provide material that does not support fungal or bacterial growth as tested in accordance with ASTM G-21 and ASTM G-22.
5. GREENGUARD Certified: Provide GREENGUARD Certified sheet. Sheet shall meet the requirements of GREENGUARD Certification Standards for Low-Emitting Products and GREENGUARD Product Emission Standard for Children & Schools.
6. Color Consistency: Provide components matched in accordance with SAE J-1545 - (Delta E) with a color difference no greater than 1.5 units using CIE Lab, CIE CMC, CIE LCh, Hunter Lab or similar color space scale systems.

1.5 SUBMITTALS

- A. Product Data: Manufacturer's printed product data for each type of Palladium® G2 Sheet specified.
- B. Detail Drawings: Mounting details with the appropriate adhesives for specific project substrates.
- C. Samples: Verification samples of Palladium® G2 Sheet, 8" (203mm) square, of each type and color indicated.
- D. Manufacturer's Installation Instruction: Printed installation instructions for Palladium® G2 Sheet.

1.6 DELIVERY, STORAGE AND HANDLING

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

1.7 PROJECT CONDITIONS

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

1.8 WARRANTY

- A. Standard InPro Limited Lifetime Warranty against material and manufacturing defects.

PART 2 – PRODUCTS

2.1 MANUFACTURER

- A. Acceptable Manufacturer: IPC Door and Wall Protection Systems™, InPro Corporation, PO Box 406, Muskego, WI 53150, USA. Telephone: 800.222.5556, Fax: 888.715.8407, www.inprocorp.com
- B. Acceptable Manufacturers subject to compliance with specifications:
 - 1. Construction Specialties, Inc.
 - 2. Activar Construction Products Group Inc.
- C. Provide all Palladium® G2 Sheet and wall protection from a single source.

2.2 MANUFACTURED UNITS

- A. Palladium® G2 Sheet
 - 1. Palladium® G2 Sheet Options
G2-405 4'x8' (1.22m x 2.44m) .040" = 3/64" (1mm), standard

2. Also available:
4' x 10' (1.22m x 3.04m) sheets - thickness, .040" (1mm), .060" (1.5mm) and .080" (2mm)
Custom sizes – available
Backing – unbacked
3. Color: See drawings
4. Accessories:
 - a. Non PVC
G2-407 Top Cap; Length: 8' (2.44m) standard
G2-408 Vertical Divider Bar; Length: 8' (2.44m) standard
G2-409 Inside Corner; Length: 8' (2.44m) standard
G2-417 Top Cap for .080" sheet; Length: 8' (2.44m) standard
G2-418 Vertical Divider Bar for .080" sheet; Length: 8' (2.44m) standard
G2-419 Inside Corner for .080" sheet; Length: 8' (2.44m) standard
 - b. Stainless Steel
407SS Stainless Steel Top Cap; Length: 8' (2.44m) standard
408SS Stainless Steel Vertical Divider Bar; Length: 8' (2.44m) standard
 - c. Aluminum
407A Aluminum Top Cap; Length: 8' (2.44m) standard
408A Aluminum Vertical Divider Bar; Length: 8' (2.44m) standard
409A Aluminum Inside Corner; Length: 8' (2.44m) standard
420A Aluminum Outside Corner ; Length: 8' (2.44m) standard
 - d. Outside Corners
G2-11212 Outside Corners
 - e. Color Matched Caulk

2.3 MATERIALS

- A. G2 BioBlend® sheet material shall be extruded from chemical and stain-resistant reformulated PETG.

2.4 ACCESSORIES

- A. Top caps, vertical divider bars and inside corners:
Accessory trim pieces shall be extruded from chemical and stain resistant non-PVC thermoplastic.
- B. Stainless steel top caps shall be made of #400 series stainless steel.
- C. Stainless steel vertical divider bars shall be #400 series stainless steel on galvanized steel.
- D. Aluminum top caps, inside corners, divider bars shall be extruded from 6063-T5 aluminum.

E. Color Matched Caulk

2.5 FINISHES

A. Color or faux-wood pattern of Palladium® G2 Sheet to be selected by the architect from the Palladium® G2 Sheet finish selection. Surface shall have a velvet texture.

B. Non-PVC top caps, vertical divider bars and inside corner colors to be selected by the architect from the InPro finish selection. Surface shall have a smooth finish.

C. Stainless Steel Accessories: Top caps and divider bars shall have a polished finish.

D. Aluminum Accessories: Top caps, inside corners and divider bars shall be clear anodized.

E. Accessories: Color matched caulk shall be of a color matching the G2 Series Sheet

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions in which the sheet will be installed.

1. Complete all finishing operations, including painting, before beginning installation of Non PVC sheet materials.

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

3.2 PREPARATION

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

3.3 INSTALLATION

A. General: Locate the Palladium® G2 Sheet as indicated on the approved detail drawing for the appropriate substrate and in compliance with the InPro installation instructions. Install level and plumb at the height indicated on the drawings.

B. Installation of Palladium® G2 Sheet

1. Adhere to substrate with InPro Bond, a freeze-thaw stable, nonflammable, high strength, water based adhesive that trowels on and allows approximately 20 minutes working time before firming.

2. Adhere to substrate with Fastbond 30, a nonflammable, high strength, water dispersed contact adhesive, with very little odor. Smooth roll surface.

3.4 CLEANING

A. At completion of the installation, clean surfaces in accordance the InPro cleanup and maintenance instructions.

END OF SECTION 10.2600

SECTION 10.2813 – TOILET ACCESSORIES**PART 1 - GENERAL****1.1 SUMMARY**

A. This Section includes the following:

1. Washroom accessories.
2. Shower accessories

1.2 SUBMITTALS

A. Product Data: For each type of product indicated. Include the following:

1. Construction details and dimensions.
2. Anchoring and mounting requirements, including requirements for cutouts in other work and substrate preparation.
3. Material and finish descriptions.
4. Features that will be included for Project.
5. Manufacturer's warranty.

B. Product Schedule: Indicating types, quantities, sizes, and installation locations by room of each accessory required.

1. Identify locations using room designations indicated on Drawings.
2. Identify products using designations indicated on Drawings.

C. Maintenance Data: For toilet and bath accessories to include in maintenance manuals.

1.3 QUALITY ASSURANCE

A. Source Limitations: For products listed together in the same articles in Part 2, provide products of same manufacturer unless otherwise approved by Architect.

1.4 COORDINATION

A. Coordinate accessory locations with other work to prevent interference with clearances required for access by people with disabilities, and for proper installation, adjustment, operation, cleaning, and servicing of accessories.

B. Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work.

1.5 WARRANTY

A. Special Mirror Warranty: Manufacturer's standard form in which manufacturer agrees to replace mirrors that develop visible silver spoilage defects and that fail in materials or workmanship within specified warranty period.

1. Warranty Period: 15 years from date of Substantial Completion.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Stainless Steel: ASTM A 666, Type 304, 0.0312-inch (0.8-mm) minimum nominal thickness, unless otherwise indicated.
- B. Steel Sheet: ASTM A 1008/A 1008M, Designation CS (cold rolled, commercial steel), 0.0359-inch (0.9-mm) minimum nominal thickness.
- C. Galvanized Steel Sheet: ASTM A 653/A 653M, with G60 (Z180) hot-dip zinc coating.
- D. Galvanized Steel Mounting Devices: ASTM A 153/A 153M, hot-dip galvanized after fabrication.
- E. Fasteners: Screws, bolts, and other devices of same material as accessory unit and tamper-and-theft resistant where exposed, and of galvanized steel where concealed.
- F. Chrome Plating: ASTM B 456, Service Condition Number SC 2 (moderate service).
- G. Mirrors: ASTM C 1503, Mirror Glazing Quality, clear-glass mirrors, nominal 6.0 mm thick.

2.2 TOILET ROOM / WASHROOM ACCESSORIES

A. Basis-of-Design Products: The design for accessories is based on products indicated on the Toilet Accessories Schedule on the drawings. Subject to compliance with requirements, provide the named product or a comparable product by one of the available manufacturers indicated.

1. Basis-of-Design Products by Bobrick Washroom Equipment, Inc.

B. Available Manufacturers: The design for accessories is based on products indicated on the Toilet Accessories Schedule. Subject to compliance with requirements, provide the named product or a comparable product by one of the following:

1. American Specialties, Inc. (ASI)
2. Bradley Corporation.

C. Toilet / Shower Accessories Schedule: Provide toilet accessories where shown on Drawings or as provide in these specifications. Provide products of the same manufacturer for each type of accessory unit and for units exposed in the same area.

1. Toilet / shower accessories shall be of the quality as manufactured by Bobrick. The accessories which are indicated on the drawings are listed with Bobrick catalog numbers for convenience in identifications only. The use of a catalog numbers as a description of an item shall be taken to include the description or specification for the item in the manufacturer's catalog.

2.3 FABRICATION

A. General: Fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with full-length, continuous hinges. Equip units for concealed anchorage and with corrosion-resistant backing plates.

B. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six keys to Owner's representative.

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. Grab Bars: Install to withstand a downward load of at least 250 lbf (1112 N) when tested according to method in ASTM F 446.

C. Provide solid wood blocking or 12 gauge steel anchor plates behind gypsum board surfaces at each toilet accessory for secure anchorage.

D. Secure mirrors to walls in concealed, tamperproof manner with special hangers, toggle bolts, or screws. Set units plumb, level, and square at locations indicated, according to manufacturer's instructions for type of substrate involved.³²

3.2 ADJUSTING AND CLEANING

A. Adjust accessories for unencumbered, smooth operation. Replace damaged or defective items.

B. Remove temporary labels and protective coatings.

C. Clean and polish exposed surfaces according to manufacturer's written recommendations

END OF SECTION 10.2813

SECTION 10.4400 – FIRE PROTECTION SPECIALTIES**PART 1 – GENERAL**

1.1 SUMMARY

A. Section Includes:

1. Section includes portable, hand-carried, fire extinguishers, and mounting brackets for fire extinguishers.
2. Section includes fire protection cabinets for the following:
 - a. Portable fire extinguishers.
 - b. Fire Protection Cabinets

B. Related Sections:

1. Division 10 Section "Signage" for directional signage to out-of-sight fire extinguishers and cabinets.
2. Division 26 Sections or the Drawings for low-voltage wiring for fire protection cabinet alarms.
3. Division 26 Section "Interior Lighting" or the Drawings for fire extinguisher location lights.

1.2 SUBMITTALS

A. Product Data:

1. Fire Extinguishers: For each type of product indicated. Include rating and classification, material descriptions, dimensions of individual components and profiles, and finishes for fire extinguisher and mounting brackets.
2. Fire Protection Cabinets: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for fire protection cabinets. Include roughing-in dimensions, details showing mounting methods, relationships of box and trim to surrounding construction, door hardware, cabinet type, trim style, and panel style.

B. Product Schedule: For fire extinguishers and fire protection cabinets.

1. Coordinate final fire extinguisher schedule with fire protection cabinet schedule to ensure proper fit and function.
2. Coordinate final fire protection cabinet schedule with fire extinguisher schedule to ensure proper fit and function

C. Operation and Maintenance Data: For fire extinguishers and fire protection cabinets to include in maintenance manuals.

D. Shop Drawings: For fire protection cabinets. Include plans, elevations, sections, details, and attachments other work.

E. Samples for Initial Selection: For each type of fire protection cabinet indicated.

F. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below:

1. Size: 6 by 6 inches (150 by 150 mm) square.

G. Warranty: Sample of special warranty.

1.3 QUALITY ASSURANCE

A. NFPA Compliance: Fabricate and label fire extinguishers to comply with NFPA 10, "Portable Fire Extinguishers."

B. Fire Extinguishers: Listed and labeled for type, rating, and classification by an independent testing agency acceptable to authorities having jurisdiction.

1. Provide fire extinguishers approved, listed, and labeled by FMG.

C. Fire-Rated, Fire Protection Cabinets: Listed and labeled to comply with requirements in ASTM E 814 for fire-resistance rating of walls where they are installed.

D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

E. Preinstallation Conference: Conduct conference at Project site.

1. Review methods and procedures related to fire extinguishers including, but not limited to, the following:

- a. Schedules and coordination requirements.

2. Review methods and procedures related to fire protection cabinets including, but not limited to, the following:

- a. Schedules and coordination requirements.

1.4 COORDINATION

A. Coordinate type and capacity of fire extinguishers with fire protection cabinets to ensure fit and function.

B. Coordinate size of fire protection cabinets to ensure that type and capacity of fire hoses, hose valves, and hose racks indicated are accommodated

C. Coordinate sizes and locations of fire protection cabinets with wall depths.

1.5 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace fire extinguishers that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:
 - a. Failure of hydrostatic test according to NFPA 10.
 - b. Faulty operation of valves or release levers.
2. Warranty Period: Six years from date of Substantial Completion.

PART 2 – PRODUCTS

2.1 PORTABLE FIRE EXTINGUISHERS

- A. Multi-purpose dry chemical fire extinguishers, 4A:60B:C UL rating:
 1. Larsen's Manufacturing Company, Model "MP10".
 2. Potter Roemer, Model Number 3010.
 3. Or alternative of the quality necessary to meet the specifications.
- B. Where indicated on the Drawings, and at each fire extinguisher cabinet, provide one multi-purpose dry chemical fire extinguisher with UL rating.
- C. Provide four carbon dioxide fire extinguishers with UL rating to be located by Architect.
- D. Provide wet chemical fire extinguishers with UL rating as indicated in Kitchen area.
- E. Provide manufacturer's standard wall mounting brackets for all portable fire extinguishers except those furnished in cabinets.
- F. Service, charge, and tag each fire extinguisher not more than five calendar days prior to the Date of Substantial Completion of the Work as that Date is established by the Architect.

2.2 FABRICATION

A. Fire Protection Cabinets: Provide manufacturer's standard box (tub) with trim, frame, door, and hardware to suit cabinet type, trim style, and door style indicated.

1. Weld joints and grind smooth.
2. Provide factory-drilled mounting holes.
3. Prepare doors and frames to receive locks.
4. Install door locks at factory.

B. Cabinet Doors: Fabricate doors according to manufacturer's standards, from materials indicated and coordinated with cabinet types and trim styles selected.

1. Fabricate door frames with tubular stiles and rails and hollow-metal design, minimum 1/2 inch (13mm) thick.
2. Fabricate door frames of one-piece construction with edges flanged.

3. Miter and weld perimeter door frames.

C. Cabinet Trim: Fabricate cabinet trim in one piece with corners mitered, welded, and ground smooth.

2.3 GENERAL FINISH REQUIREMENTS

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces of fire protection cabinets from damage by applying a strippable, temporary protective covering before shipping.

C. Finish fire protection cabinets after assembly.

D. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.4 FIRE PROTECTION CABINET STEEL FINISHES

A. Surface Preparation: Remove mill scale and rust, if present, from uncoated steel, complying with. After cleaning, apply a conversion coating suited to the organic coating to be applied over it.

B. Factory Prime Finish: Apply manufacturer's standard, fast-curing, lead- and chromate-free, universal primer immediately after surface preparation and pretreatment.

C. Baked-Enamel or Powder-Coat Finish: Immediately after cleaning and pretreating, apply manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat. Comply with coating manufacturer's written instructions for applying and baking to achieve a minimum dry film thickness of 2 mils.

1. Color and Gloss: As selected by Architect from manufacturer's full range.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine walls and partitions for suitable framing depth and blocking where recessed cabinets will be installed.

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

B. Examine fire extinguishers for proper charging and tagging.

1. Remove and replace damaged, defective, or undercharged fire extinguishers.

2. Proceed with installation of fire extinguishers only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Prepare recesses for recessed fire protection cabinets as required by type and size of cabinet and trim style.

3.3 INSTALLATION OF FIRE PROTECTION EXTINGUISHERS

- A. General: Install fire protection extinguishers in locations and at mounting heights indicated or, if not indicated, at heights acceptable to authorities having jurisdiction.

END OF SECTION 10.4400

SECTION 10.5100 – LOCKERS**PART 1 – GENERAL**

1.1 Summary

- A. Section includes:
1. Ventilated Metal Lockers

1.2 Submittals

- A. Product Data: Submit manufacturer's technical data for materials, fabrication, finishing, fastenings, hardware, and installation details.
- B. Shop Drawings: Submit shop drawings indicating room sizes, layout, locker dimensions, material thickness, trim, hardware, finishes, locks, base, doors, accessories, and installation details.
- C. Samples: Submit samples of edge details, colors, patterns, finishes, and textures.
- D. Closeout Documents: Submit the following:
1. Operation and maintenance data
 2. Warranty

1.3 Quality Assurance

- A. Qualifications
1. Fabricator shall be capable of providing field service representation.
 2. Installer shall be approved by the manufacturer and be experienced in performing work of similar size and scope.
- B. Pre-installation Meeting: Conduct pre-installation meeting prior to installation to verify project requirements and conditions.

1.4 Delivery, Storage and Handling

- A. Storage and Handling: Store materials in an enclosed shelter providing protection from damage, temperature, humidity, and exposure to the elements.
- B. Delivery: Deliver materials in the manufacturer's original protective packaging.

1.5 Coordination and Project Conditions

- A. Field Measurements: Before material fabrication, verify actual field measurements and show actual measurements on shop drawings.
- B. Coordination: Coordinate field measurements with fabrication schedule and construction progress to avoid construction delays.

1.6 Warranty

- A. Lyon lockers are warranted against defects in material and workmanship for 1 year from delivery date of product, when used in accordance with manufacturer's specifications and maintenance procedure. This warranty applies to the original purchaser only, and purchaser's sole remedy under this warranty is limited to replacement or repair of the product and specifically excludes consequential, incidental or any other damages directly or indirectly resulting from failure or loss of use of Lyon products.

PART 2 – PRODUCTS

2.1 Ventilated Lockers

- A. Basis of Design: Metal ventilated lockers as manufactured by Lyon Workspace. (PO Box 671, Aurora, IL 60507-0671, 630-892-8941)
- B. Approved Equals
 - 1. Uline Metal Lockers
 - 2. Republic Storage Products
 - 3. Global Industries

2.2 Metal Lockers

- A. Configuration
 - 1. Configurations: Double Tier Ventilated Lockers
 - 2. Width: 12"
 - 3. Depth: 12"
 - 4. Height: 36"
 - 5. The Americans with Disabilities Act (ADA) specifies certain requirements that affect metal lockers. To comply to these ADA standards at least 5% of the lockers provided, but no less than one locker needs to meet the ADA requirements.

B. Body

1. 16-gauge steel, flanged to give double thickness of metal at back vertical corners. 18-gauge backs.

C. Door Frames

1. 16-gauge formed steel channels. Vertical members shall have an additional flange to form continuous door strike. Corners shall be lapped and welded into a rigid assembly. In addition, bottom cross members shall have tang at each end that fits through slot in rear flange of upright frame member to prevent twisting out of alignment. Top and bottom cross members shall provide support for front edge of locker top and locker bottom.

D. Door

1. One-piece, 14-gauge steel on single, double and triple tier with both vertical edges formed into channel-shaped formation; top and bottom shall be flanged at 90 degree angle. On multiple tier lockers, hinge side shall be formed into channel shaped formation with other three sides flanged at 90 degree angle.

E. Ventilation

1. Sides and doors shall be punched with diamond shaped perforations. Optional solid sides available.

F. Door Jambs

1. 48" and higher single tier lockers shall have three door jambs; double tier and triple tier lockers shall have two jambs welded to side of door frames to engage locking device. Design and gauge of jamb shall prevent freeing of locking device by prying. Each jamb shall have easily replaceable soft rubber bumper.

G. Hinges

1. Shall be not less than 2" high, .050" steel, 5 knuckle, full loop design forming double thickness on each leaf. Hinges to be set in slot in door and frame and projection welded to frame and securely attached to door. Hinge pin to be spun over at ends to resist removal. Single-tier lockers 48", 60" and 72" high to have three hinges. All other tiers to have two hinges – all on right hand side of door.

H. Quiet Locking Device

1. Single tier locking device shall engage frame at three points; double tier and triple tier at two points. Channel shaped locking device with full length reinforcing ribs shall be a quiet design utilizing nylon guide inserts to reduce metal to metal contact. The locking

device shall include a latch finger that engages the 12-gauge door jamb. Lock bar shall be enclosed on three sides and operate within the channel formation of the door. Locking device shall be prelocking so mechanism can be locked in open position – door locking automatically when closed. An optional single point latch shall be available except on 9” wide lockers. Box locker shall have one-point locking device with a 14-gauge lock clip for attaching padlock. Doors also to be provided with lock hole filler to permit use of built in lock.

I. Handles

1. On single, double and triple tier lockers, handles shall be stainless steel recessed. No moving parts are to operate against outside surface of locker. Padlock attachment to be integral part of lift which shall be attached directly to locking bar and protected by fixed handle housing. Handle to provide built in padlock strike. The recessed handle shall be 4-1/8"w x 6-1/16"h x 1-1/4"d. Multiple tier lockers shall be equipped with a 16-gauge door pull with padlock attachment when not used with built in locks.

J. Shelves

1. Single tier lockers shall have one 16-gauge shelf approximately 9” below top. Flanged on all four sides for strength with the front flange turned 45 degrees for safety and attached at no less than two points through each side flange. Only single tier lockers 48" and taller have shelves.

K. Coat Hooks

1. Single tier, double tier and triple tier lockers shall have one double prong hook and three single prong wall hooks. 5/8” diameter coat rods are standard in 18” and 21” deep knocked down single tier lockers, replacing ceiling hook. All hooks to be zinc-plated or subjected to a comparable rust retardant treatment and attached with two nuts and bolts.

L. Number Plates

1. Optional aluminum number plates with etched figures at least 3/8” high. All lockers shall have the number plate punching located the near top of the doors.

M. Standard Finish

1. Exposed steel parts shall be thoroughly cleaned, given a bonding and rust inhibitive phosphate treatment and then electrostatically sprayed with powder coat.
 - i. Color to be selected by architect by manufacturer’s full range.

N. Hardware

1. Stainless Steel Recessed Handles:

- i. Stainless Steel Recessed Handles with finger lift offers added safety and security with a clean flush mount appearance. Standard on single, double and triple-tier lockers. Option available for zinc alloy
- ii. ADA-compliant hardware required.
- iii. Locks not included in scope

O. Base:

1. Lockers not to include locker legs.

2.3 Locker Bench

A. Dimensions:

B. Locker Bench Top

1. Hardwood Top - Standard 9-1/2" depth with 1-1/4" height. Hardwood top available in lengths from 3' to 12' long. Consists of mixed hardwoods and finished with two coats of clear catalyzed lacquer on the tops and sides (1 coat on the bottom). Radius edge on all sides and corners.
2. ADA Hardwood Top - Standard 1-1/4" height. Hardwood top available in 48"w x 24"d and 42"w x 20"d'. Consists of mixed hardwoods and finished with two coats of clear catalyzed lacquer on the tops and sides (1 coat on the bottom). Radius edge on all sides and corners.
3. Plastic Laminate Top - Standard 12" depth and 1-1/2" height. Plastic laminate top available in lengths from 3' to 12' long. Shall be color matched plastic laminate or wood-grain plastic laminate over laminated hardwood core. Long sides shall have a full 180° soft edge.
4. Aluminum Top - Standard 9-1/2" depth and 1-3/4" height. Aluminum top available in lengths from 6' to 12' long. Aluminum alloy with a clear anodic coating and rounded edges.

C. Locker Bench Pedestals:

1. Steel Pedestals - 16-1/2"H – 8-1/4" Diameter Top and Base Steel pedestal base shall be 14-gauge steel with 1-5/8" tubing uprights. Finish of pedestals shall be the same color as lockers. Spaced on not more than 6' centers.
2. Cast Iron Heavy-Duty Pedestals -16-1/4"H – 6" Diameter Top and Base. Single piece cast iron construction. 2-1/4" diameter post with 3/16" material thickness. Finish of pedestals shall be same color as lockers. Spaced on not more than 6' centers.
3. Aluminum Pedestals - 15-1/4"H – 11-5/8" x 2-1/4" Base Pedestal shall be two pieces of anodized aluminum extrusion (6105-T5) 2-1/4" x 3/4" formed and unit-welded. Rubber cap included on base ends. Optional rubber feet and/or concrete wedge anchor available.

4. Aluminum Trapezoid Pedestals - 16-1/4"H – 13-9/16" x 3" Base Pedestal shall be one piece of 3" x 1/4" aluminum bar stock formed and unit-welded. Includes non-skid pads under base. Pedestals shall have a Black Anodized Finish.

PART 3 – EXECUTION

3.1 Examination:

- A. Examine site conditions before locker installation. Notify architect of unacceptable areas. Do not install lockers until unacceptable conditions have been corrected.

3.2 Installation

- A. Install lockers installed secured, plumb, level, square, and flush. Base by others must be flat and level.
- B. Install all required trim, fillers, end panels, and closures per manufacturer's instructions.
- C. Use hardware supplied or recommended by the manufacturer.
- D. Attach number plates to doors as indicated on shop drawings.
- E. Correct and/or replace damaged components as directed by architect.

3.3 Adjustment

- A. Adjust doors and locks for smooth operation without binding.
- B. Lubricate door hinges and locks per manufacturer's instructions.

3.4 Cleaning

- A. Clean all surfaces in accordance with manufacturer's instructions.
- B. Do not use abrasive cleaners.

END OF SECTION 10.5126