WASHINGTON COUNTY
PUBLIC SCHOOLS:
WILLIAMSPORT HIGH SCHOOL
WATER LINE REPLACEMENT

BID NUMBER: 2020-32
PSC NUMBER: 21.031.20 ASP

LOCATED AT:
5 S Clifton Drive
Williamsport, MD 21795

March 4, 2020

KIBART, INC.
901 Dulaney Valley Road
Suite 301
Towson, MD 21204
WILLIAMSPORT HIGH SCHOOL – WATER LINE REPLACEMENT
WASHINGTON COUNTY, MARYLAND

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WASHINGTON COUNTY, MARYLAND
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Water Line Replacement at Williamsport High School

Bid #2020-32

Procurement Schedule

Issue Date: March 4, 2020

Pre-Bid Meeting: March 11, 2020 at 4:00 PM EST
Williamsport High School
5 S. Clifton Drive
Williamsport, Maryland 21795

Deadline for Written Questions Submission: March 17, 2020 at 12:00 PM EST

Bid Due: April 1, 2020 at 11:00 AM EST
Washington County Public Schools
Center for Education Services
10435 Downsville Pike
Hagerstown, Maryland 21740

Tentative Award Date: May 5, 2020

Dates and/or times are subject to change by the issuing of a written addendum.

WCPS Contract Managers
Procurement Officer
Scott Bachtell
Supervisor of Purchasing
301-766-2842
bachtSco@wcps.k12.md.us

Contract Administrator
Chad Criswell
Sr. Project Manager and Planning Supervisor
301-766-8601
criswcha@wcps.k12.md.us

This bid document is posted on the WCPS Purchasing website at www.wcspurchasing.com. This is also the source for any/all addenda. Please register your company for notices about this bid and similar projects on our web site.
SECTION 00 11 16

INVITATION TO BIDDERS
INVITATION TO BID

March 4, 2020

Bid: #2020-32, Water Line Replacement at Williamsport High School

Pre-Bid Meeting: Williamsport High School
5 S. Clifton Drive
Williamsport, MD 21795

Bid Inquiries to: Scott Bachtell
Supervisor of Purchasing (WCPS)
bachtsco@wcps.k12.md.us

Chad Criswell
Sr. Proj. Mgr. and Planning Supervisor
criswcha@wcps.k12.md.us

Bids shall be submitted in duplicate, along with additional documentation required per the Bid Solicitation instructions, in a Sealed Envelope showing Bid Name and Due Date on the outside of the envelope. Faxed or Emailed bids will not be accepted. Bids delivered in person should be handed to a Purchasing Department staff member prior to the bid due date/time to ensure the bid is properly filed in advance of the Bid Opening.

Bids not received prior to the day/time designated for the bid opening, or bids not submitted to the Purchasing Staff, may not be properly filed. Such bids, upon discovery by the Purchasing Official, will be refused and/or returned unopened to the Bidder. The Purchasing Department is open Monday through Friday, 8:00 am – 12:00 pm and 1:00 pm – 4:30 pm local time, except national and school holidays.

Place of Bid Opening: WCPS Center for Education Services
10435 Downsville Pike
Hagerstown, MD 21740

Address Mail or Delivery Package to:
Attention: Scott Bachtell, Supervisor of Purchasing

Telephone: (301) 766-2842
TO VIEW CURRENT SOLICITATIONS, PLEASE SEE THIS WEB ADDRESS:

http://wcpspurchasing.com/bids/opportunities

FOR BID RESULTS, PLEASE SEE THIS WEB ADDRESS:

http://wcpspurchasing.com/bids/results

Bid Solicitation Document includes the following:

- √ Instructions to Bidders (AIA A701)
- √ General Conditions (AIA A201)
- √ Technical Specifications
- √ Affidavit to Bid
- √ Terms & Conditions (AIA A101)
- √ Signature Sheet
- √ Plans/Drawings/Schematics
- √ Proposal Form

NOTICE
Notice is hereby given that Washington County Public Schools will accept sealed bids for the purpose of establishing a contract to replace identified water lines at Williamsport High School. The Contract/Bid Solicitation Documents were prepared by Kibart, Inc. (the Engineer) and Washington County Public Schools (the Owner). Below is a summary of the project:

The successful Bidders shall furnish all labor, materials, equipment, and services necessary for, and incidental to, performing the work specified in the enclosed Technical Specifications and Drawings for the construction project #2020-32, Water Line Replacement at Williamsport High School located at 5 S. Clifton Drive, Williamsport, Maryland 21795. Minority Business Enterprise participation procedures are applicable to the bid and construction project. The construction contract will be awarded to the lowest responsible bidder with consideration given to quantities involved; time required for delivery; the purpose for which required; the competency and responsibility of the bidder; the ability of the bidder to perform satisfactory service; and the plan for utilization of minority contractors. The Washington County Board of Education (“WCBOE”) may reject any and all bids and re-advertise for other bids.

BIDS DUE
Sealed bids will be received at the Washington County Public Schools Center for Education Services Purchasing Office at 10435 Downsville Pike, Hagerstown, Maryland, 21740.

Bids will be opened and read aloud at that time. Bids received after that time will not be accepted and will be returned unopened. Interested parties are invited to attend.

No bidder may withdraw their bid for a minimum period of sixty (60) calendar days after the day of the bid opening.
BID SOLICITATION AVAILABILITY
Contractors may obtain the files that comprise the Bid Solicitation Document from the Purchasing Website on the following basis:

1. The solicitation document is available for viewing and download from the WCPS Purchasing Website: www.wcpspurchasing.com. The bid solicitation document is made available to any person or company who chooses to obtain it from the website. PREQUALIFICATION TO SUBMIT A BID IS A REQUIREMENT. ALL CONTRACTORS WHO have obtained a copy of the document from the website or by other means may not be eligible to submit a bid. Only the WCPS Purchasing Office can grant approval to bid. Only pre-qualified contractors are eligible to bid this project. Registration via the WCPS website is mandatory and is a two-step process. Approval at step one of the application is not sufficient for bidding construction work. WCPS Purchasing Office will notify each contractor in writing upon approval of the application to bid construction projects.

2. To check whether or not your company is pre-qualified, you may contact the Purchasing Office by calling Beverly Bergan at 301-766-2841, or by email to: bergabev@wcps.k12.md.us. The Bid Solicitation consists of electronic files which provide instructions, technical specifications, drawings, and supplemental addenda issued prior to the bid opening.

3. The Bidder assumes all responsibility for downloading all electronic files and for coordinating any pertinent information contained in the Bidding Documents. Downloading/viewing only specific files or partial information will not relieve the contractor or subcontractor from the work indicated on other drawings or specifications comprising the complete bid solicitation.

4. Bids received from contractors who have not been pre-qualified seven days prior to the bid opening date may be refused or returned unopened to them. To become pre-qualified, complete the Prequalification Registration online by visiting our website, http://wcpspurchasing.com/vendors-contractors/becoming-wcps-vendor.

5. Contractors and subcontract bidders must be licensed to perform construction work in the State of Maryland in order to be eligible to bid. Contractors must meet WCPS’ eligibility requirements in order to bid this project as a prime bidder.
MINORITY BUSINESS ENTERPRISE (MBE)/PREVAILING WAGES

This bid/project is subject to Minority Business Enterprise Procedures for State Funded Public School Construction Projects. Certified Minority Business Enterprises are encouraged to respond to this solicitation notice.

All contractors, including certified MBE firms, when submitting bids as general or prime contractors, are required to attempt to achieve the MBE subcontract participation goals and subgoals established for this construction project from MDOT certified MBE firms. Please visit the WCPS Purchasing Department website for a list of MDOT certified MBE firms that may be potential subcontractors.

The overall certified MBE subcontracting goal for this project is 3% with no subgoals. Refer to Specification Section 00 43 39 for detailed MBE procedures and MBE forms.

The bidder is required to submit with its bid a completed Attachment A – Certified MBE Utilization and Fair Solicitation Affidavit and Attachment B – MBE Participation Schedule, as described in the MBE Procedures included in the bid solicitation documents.

Notice to Bidders: In accordance with COMAR, a MBE liquidated damages provision has been added to the AIA Document A101 – 2007 Standard Form of Agreement Between Owner and Contractor, as amended by Washington County Board of Education (Article 8.7 in Specification Section 00 52 13).

OBJECTION TO AWARD

Any company objecting to the bid procedure or the recommendation for award has five (5) business days following the date of award by the Board of Education to file a written protest with the Superintendent of Schools. It is the company’s responsibility to ascertain and confirm the date/time of the pertinent Board Meeting. The written appeal must be submitted on company letterhead, dated and signed by the senior officer in the company. The protest letter must include a request for review and ruling by WCPS, a detailed statement of the legal and factual grounds for the protest, including the resulting prejudice to the company, copies of relevant documents, and a statement of the form of relief being requested. Failure to comply with these instructions may result in the protest being deemed “not filed.” Bid protests received later than five (5) days after the Board Meeting will result in the protest being deemed “not timely.” WCPS will not respond or address bid protests that do not conform to these instructions.

BIDDING REQUIREMENTS

Bid Security Bond in the amount of 5% of the Total Bid is required from all Bidders. The Bid Security Bond serves as security for obtaining Performance Bond and Payment Bonds in 100% of the Contract amount from the successful bidder within ten (10) days from Notice of Award of the Contract. Bidder must use the AIA bond form versions provided herein. Only AIA forms that have been reviewed for acceptance by WCPS legal counsel will be acceptable.
The Owner may make such investigations as he deems necessary to determine the ability of the Bidder to perform the Work, and prospective Bidders may be required to furnish evidence of performance of similar projects of similar magnitude and complexity and all such information and data as requested. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligation of the Contract and to complete the Work contemplated therein.

The Owner reserves the right to reject any or all bids, to waive irregularities in the bids, select alternates in any order and to make the award in the manner that the WCBOE determines will best serve the interests of WCPS.

By order of: Washington County Public Schools
Scott Bachtell, Supervisor of Purchasing
SECTION 00 20 00

STANDARD FORM OF PROPOSAL
WASHINGTON COUNTY PUBLIC SCHOOLS
Hagerstown, Maryland

WILLIAMSPORT HIGH SCHOOL
WATER LINE REPLACEMENT

at

5 S. Clifton Drive
Williamsport, Maryland 21795

FORM OF PROPOSAL – BID NO. 2020-32

Proposal of ________________________________
(Corporation, a partnership, or an individual hereinafter called “Bidder”) organized and doing business and existing under the laws of the state of ____________________________.

I/We as the Bidder, in compliance with the Invitation to Bid for the selected contract package included herein for the Water Line Replacement work at Williamsport High School, have examined the Bidding Documents, and have become familiar with all the conditions surrounding the construction of the proposed project, including the availability of materials and labor, hereby propose to furnish all labor, materials, services and equipment necessary to properly complete the Work in accordance with the Contract Documents and Addenda, and at the prices stated below. These prices are to cover all expenses incurred in performing the Work required under the Contract Documents, of which this Proposal is a part.

All prices include all applicable sales and/or use taxes; include all insurance premiums required and include all premiums for a Performance Bond and a Labor and Material Payment Bond in the sum of one hundred percent (100%) of the Contract price. A five percent (5%) Bid Bond shall be attached to the Proposal. The Bid Bond amount shall be computed on the Lump Sum Total Price inclusive of Alternate Values; shall be submitted with the Washington County Board of Education as the sole obligee, and shall be issued for a minimum period of sixty (60) calendar days from the receipt of Bids.

PREQUALIFICATION
To become prequalified to be this project, visit our website: http://wcpspurchasing.com/vendors-contractors/becoming-wcps-vendor. The application to participate as a prime bidder in a construction or related project is a two-step process and both steps of the process must be successfully completed in order to submit a bid. Bids received from contractors who have not been pre-qualified by the Purchasing Officer at least seven days prior to the bid opening will be refused or returned unopened to the sender.

COMPLETION TIME – SCHEDULE OF WORK
I/We as the Bidder, agree to begin to perform the Work at the time stated in the “Notice to Award/Proceed” and to substantially complete the entire work in accordance with the provisions of the Contract Documents. If this work is not completed within the time period specified, I/we will be liable for Liquidated Damages of $1,000.00 per calendar day.
BASE BID
Bidders furnish all labor, materials, services, and equipment necessary to properly complete the Work required for the Water Line Replacement project at Williamsport High School in strict accordance with the Contract Documents for the following lump sum total:

Lump Sum Total:

___________________________________________
(Amount in words)

$ ____________________
(Amount in numbers)

ALTERNATES
The prices stated below provide for the complete installation of the Alternate Work as described herein. The prices for Alternate Bids, if accepted, will be added to the Base Bid to determine the total Contract Sum. The Owner reserves the right to accept or reject any, or all, Alternates in any order or combination. Acceptance or rejection of any Alternates does not relieve the Contractor of timely completion of the Work within the required time period.

Alternate Bids are more fully described in Specification Section “01 11 50 – Alternates”. Alternate Bids shall include all costs associated with the described Alternate or reasonably inferable therefrom.

Alternate No. 1: Replacement of Incoming Domestic and Fire Lines

In accordance with the drawings and specifications, cost to replace incoming domestic, fire lines, install meter and vault and all associated work.

Lump Sum Total:

___________________________________________
(Amount in words)

$ ____________________
(Amount in numbers)
ADDENDA
The following Addenda have been received and reviewed and all Work therein is incorporated in the Bid Form of Proposal:

(If none please write “NONE”):

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ATTACHMENTS
The following items are mandatory and are to be included with the Bid Form of Proposal and shall be completed by the Bidder:

1. WCPS Bid/Proposal Affidavit
2. Bid Security – See Section 00 43 13 – AIA Document A310 -2010 Bid Bond
3. MBE Attachment A – See Section 00 43 39 – “Minority Business Enterprise Procedures”
4. MBE Attachment B – See Section 00 43 39 – “Minority Business Enterprise Procedures”
PERFORMANCE, CLAIMS, AND LAWSUITS
(If the answer to any of the questions below is “YES”, please attach additional detail and explanations).

1. Has your organization, and/or a subcontractor being utilized to complete this scope of Work ever failed to complete any work awarded to it?

2. Are there any judgments, claims, arbitration proceedings or suits pending or outstanding against your organization or its officers, and/or a subcontractor being utilized to complete this scope of Work?

3. Has your organization, and/or a subcontractor being utilized to complete this scope of Work, filed any law suits, requested arbitration or been party to any litigation with regards to a construction?

4. List any federal, state or local regulatory violations and/or citations and their resolution that have been issued to this branch or corporate office in the last three (3) years. Provide the value of any judgments or liens outstanding against your organization. Provide the same information for a subcontractor being utilized to complete this scope of Work.

If the response to all of the above questions is “not applicable”, “no” or “none”, the following statement must be submitted and signed by an officer of the firm:

I _________________________________ hereby certify that “not applicable”, “no”, and/or “none” apply to ________________________________

(Name of Corporate Officer)

all of the questions listed about for ____________________________________.

(Company Name)

____________________________
Signature

____________________________
Printed Name

____________________________
Company Name

____________________________
Date

(Based on review of the bidder’s response/information provided for Items 1-4 in the “Performance, Claims, and Lawsuits” section, WCPS reserves the right to consider the Bidder and their respective bid as non-responsible.)
WILLIAMSPORT HIGH SCHOOL – WATER LINE REPLACEMENT  
WASHINGTON COUNTY, MARYLAND  

REPRESENTATIONS  
I/We as the Bidder, have reviewed the complete AIA Document A701 – 1997 “Instructions to Bidders,” as modified by the Washington County Board of Education, and agree with the terms and conditions specified therein and submit this Bid Proposal in accordance.

The Owner reserves the right to reject any or all Bids. The Owner shall have the right to waive informalities and irregularities in the bids and in the bidding process and to accept the Bid which, in the Owner’s judgment, is in the Owner’s own best interests. A Bid not accompanied by a required bid security, or by other data required by the Bidding Documents, or a Bid which is in any way incomplete or irregular, is subject to rejection. No Bidder shall withdraw, modify, or cancel his bid, or any part thereof, for a minimum of sixty (60) calendar days after the receipt of bids. The undersigned shall complete the total Work within the timeframe previously stated once the Owner indicates acceptance of this Bid Proposal by way of a written “Notice of Award” or “Letter of Intent” within this minimum sixty (60) day time period, or any time thereafter before the Bid is withdrawn.

I/We certify that this Bid is made without previous understanding, agreement, or connection with any person, firm or corporation submitting a bid for the same items and/or services and is, in all respects fair and without collusion or fraud; that none of this company's officers, directors or its employees have been convicted of bribery, attempted bribery, or conspiracy to bribe under the laws of any state or federal government; and that no member of the Board of Education of Washington County, administrative or supervisory personnel or other employees of Washington County Public Schools have any interest in the bidding company except as follows: (complete if applicable)

________________________________________________________________________________

________________________________________________________________________________

Respectfully submitted,

By ________________________________________________________________________________

(Company)                                                                                   (Date)

________________________________________________________________________________

(Signature)                                                                                   (Title)

________________________________________________________________________________

(Printed Name)                                                                                 (Phone)

________________________________________________________________________________

(Business Address)                                                                         (Email  Address)
(SEAL) If bid is by Corporation
I/we the bidder represent, and agree that it is a precedent to acceptance of this bid, that the bidder has not been a party to any agreement to bid of fixed or uniform price.

______________________________  __________________________
(Signature of Office & Title)        (SEAL)

SUBSCRIBED AND SWORN to before me, a Notary Public in the State of ___________________.
County of ______________________  City of ______________________ this ______________________
day of ______________________, 2016.
Commission Expires: ______________________

NOTICE: The Washington County Board of Education reserves the right to award any, all or none due to budgetary constraints.

END OF FORM OF PROPOSAL 00 20 00
SECTION 00 20 50

WCPS BID/PROPOSAL AFFIDAVIT
MANDATORY BID/PROPOSAL AFFIDAVIT

COMAR 21.05.08.07

Bidder shall complete and submit this bid/proposal affidavit to the Supervisor of Purchasing, Washington County Public Schools with the bid or offer.

A. AUTHORITY

I HEREBY AFFIRM THAT:

I (print name)_________________________ possess the legal authority to make this Affidavit.

B. CERTIFICATION REGARDING COMMERCIAL NONDISCRIMINATION

The undersigned bidder hereby certifies and agrees that the following information is correct: In preparing its bid on this project, the bidder has considered all proposals submitted from qualified, potential subcontractors and suppliers, and has not engaged in “discrimination” as defined in §19-103 of the State Finance and Procurement Article of the Annotated Code of Maryland. “Discrimination” means any disadvantage, difference, distinction, or preference in the solicitation, selection, hiring, or commercial treatment of a vendor, subcontractor, or commercial customer on the basis of race, color, religion, ancestry, or national origin, sex, age, marital status, sexual orientation, or on the basis of disability or any otherwise unlawful use of characteristics regarding the vendor’s, supplier’s or commercial customer’s employees or owners. “Discrimination” also includes retaliating against any person or other entity for reporting any incident of “discrimination”. Without limiting any other provision of the solicitation on this project, it is understood that, if the certification is false, such false certification constitutes grounds for the State to reject the bid submitted by the bidder on this project, and terminate any contract awarded based on the bid. As part of its bid or proposal, the bidder herewith submits a list of all instances within the past 4 years where there has been a final adjudicated determination in a legal or administrative proceeding in the State of Maryland that the bidder discriminated against subcontractors, vendors, suppliers, or commercial customers, and a description of the status or resolution of that determination, including any remedial action taken. Bidder agrees to comply in all respects with the State’s Commercial Nondiscrimination Policy as described under Title19 of the State Finance and Procurement Article of the Annotated Code of Maryland.

B-1 Certification Regarding Minority Business Enterprises.

The undersigned bidder hereby certifies and agrees that it has fully complied with the State Minority Business Enterprise Law, State Finance and Procurement Article, §14-308 (a)(2), Annotated Code of Maryland, which provides that, except as otherwise provided by law, a contractor may not identify a certified minority business enterprise in a bid or proposal and:
(1) Fail to request, receive, or otherwise obtain authorization from the certified minority business enterprise to identify the certified minority proposal;

(2) Fail to notify the certified minority business enterprise before execution of the contract of its inclusion in the bid or proposal;

(3) Fail to use the certified minority business enterprise in the performance of the contract; or

(4) Pay the certified minority business enterprise solely for the use of its name in the bid or proposal.

Without limiting any other provision of the solicitation on this project, it is understood that if the certification is false, such false certification constitutes grounds for the State to reject the bid submitted by the bidder on this project, and terminate any contract awarded based on the bid.

C. AFFIRMATION REGARDING BRIBERY CONVICTIONS

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the above business (as is defined in Section 16-101(b) of the State Finance and Procurement Article of the Annotated Code of Maryland), or any of its officers, directors, partners, controlling stockholders, or any of its employees directly involved in the business's contracting activities including obtaining or performing contracts with public bodies has been convicted of, or has had probation before judgment imposed pursuant to Criminal Procedure Article, §6-220, Annotated Code of Maryland, or has pleaded nolo contendere to a charge of bribery, attempted bribery, or conspiracy to bribe in violation of Maryland law, or of the law of any other state or federal law, except as follows (indicate the reasons why the affirmation cannot be given and list any conviction, plea, or imposition of probation before judgment with the date, court, official or administrative body, the sentence or disposition, the name(s) of person(s) involved, and their current positions and responsibilities with the business):

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

D. AFFIRMATION REGARDING OTHER CONVICTIONS

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the above business, or any of its officers, directors, partners, controlling stockholders, or any of its employees directly involved in the business's contracting activities including obtaining or performing contracts with public bodies, has:
(1) Been convicted under state or federal statute of:

   (a) A criminal offense incident to obtaining, attempting to obtain, or performing a public or private contract; or

   (b) Fraud, embezzlement, theft, forgery, falsification or destruction of records or receiving stolen property;

(2) Been convicted of any criminal violation of a state or federal antitrust statute;

(3) Been convicted under the provisions of Title 18 of the United States Code for violation of the Racketeer Influenced and Corrupt Organization Act, 18 U.S.C. §1961 et seq., or the Mail Fraud Act, 18 U.S.C. §1341 et seq., for acts in connection with the submission of bids or proposals for a public or private contract;

(4) Been convicted of a violation of the State Minority Business Enterprise Law, §14-308 of the State Finance and Procurement Article of the Annotated Code of Maryland;

(5) Been convicted of a violation of §11-205.1 of the State Finance and Procurement Article of the Annotated Code of Maryland;

(6) Been convicted of conspiracy to commit any act or omission that would constitute grounds for conviction or liability under any law or statute described in subsections (1)—(5) above;

(7) Been found civilly liable under a state or federal antitrust statute for acts or omissions in connection with the submission of bids or proposals for a public or private contract; or

(8) Been found in a final adjudicated decision to have violated the Commercial Nondiscrimination Policy under Title 19 of the State Finance and Procurement Article of the Annotated Code of Maryland with regard to a public or private contract; or

(9) Admitted in writing or under oath, during the course of an official investigation or other proceedings, acts or omissions that would constitute grounds for conviction or liability under any law or statute described in §§B and C and subsections D (1)- (8) above, except as follows (indicate reasons why the affirmations cannot be given, and list any conviction, plea, or imposition of probation before judgment with the date, court, official or administrative body, the sentence or disposition, the name(s) of the person(s) involved and their current positions and responsibilities with the business, and the status of any debarment):

E. AFFIRMATION REGARDING DEBARMENT
I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the above business, or any of its officers, directors, partners, controlling stockholders, or any of its employees directly involved in the business's contracting activities, including obtaining or performing contracts with public bodies, has ever been suspended or debarred (including being issued a limited denial of participation) by any public entity, except as follows (list each debarment or suspension providing the dates of the suspension or debarment, the name of the public entity and the status of the proceedings, the name(s) of the person(s) involved and their current positions and responsibilities with the business, the grounds of the debarment or suspension, and the details of each person's involvement in any activity that formed the grounds of the debarment or suspension).

F. AFFIRMATION REGARDING DEBARMENT OF RELATED ENTITIES

I FURTHER AFFIRM THAT:

(1) The business was not established and it does not operate in a manner designed to evade the application of or defeat the purpose of debarment pursuant to Sections 16-101, et seq., of the State Finance and Procurement Article of the Annotated Code of Maryland; and

(2) The business is not a successor, assignee, subsidiary, or affiliate of a suspended or debarred business, except as follows (you must indicate the reasons why the affirmations cannot be given without qualification):

G. SUB-CONTRACT AFFIRMATION

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the above business, has knowingly entered into a contract with a public body under which a person debarred or suspended under Title 16 of the State Finance and Procurement Article of the Annotated Code of Maryland will provide, directly or indirectly, supplies, services, architectural services, construction related services, leases of real property, or construction.
H. AFFIRMATION REGARDING COLLUSION

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the above business has:

(1) Agreed, conspired, connived, or colluded to produce a deceptive show of competition in the compilation of the accompanying bid or offer that is being submitted;

(2) In any manner, directly or indirectly, entered into any agreement of any kind to fix the bid price or price proposal of the bidder or offeror or of any competitor, or otherwise taken any action in restraint of free competitive bidding in connection with the contract for which the accompanying bid or offer is submitted.

I. CERTIFICATION OF TAX PAYMENT

I FURTHER AFFIRM THAT:

Except as validly contested, the business has paid, or has arranged payment of, all taxes due the State of Maryland and has filed all required returns and reports with the Comptroller of the Treasury, the State Department of Assessments and Taxation, and the Department of Labor, Licensing, and Regulation, as applicable, and will have paid all withholding taxes due the State of Maryland prior to final settlement.

J. CONTINGENT FEES

I FURTHER AFFIRM THAT:

The business has not employed or retained any person, partnership, corporation, or other entity, other than a bona fide employee, bona fide agent, bona fide salesperson, or commercial selling agency working for the business, to solicit or secure the Contract, and that the business has not paid or agreed to pay any person, partnership, corporation, or other entity, other than a bona fide employee, bona fide agent, bona fide salesperson, or commercial selling agency, any fee or any other consideration contingent on the making of the Contract.

K. ACKNOWLEDGEMENT

I ACKNOWLEDGE THAT this Affidavit is to be furnished to the Procurement Officer and may be distributed to units of: (1) the State of Maryland; (2) counties or other subdivisions of the State of Maryland; (3) other states; and (4) the federal government. I further acknowledge that this Affidavit is subject to applicable laws of the United States and the State of Maryland, both criminal and civil, and that nothing in this Affidavit or any contract resulting from the submission of this bid or proposal shall be construed to supersede, amend, modify or waive, on behalf of the State of Maryland, or any unit of the State of Maryland having jurisdiction, the exercise of any statutory right or remedy conferred by the constitution and the laws of Maryland with respect to any misrepresentation made or any violation of the
obligations, terms, and covenants undertaken by the above business with respect to (1) this Affidavit, (2) the contract, and (3) other Affidavits comprising part of the contract.

I DO SOLEMNLY DECLARE AND AFFIRM UNDER THE PENALTIES OF PERJURY THAT THE CONTENTS OF THIS AFFIDAVIT ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF.

Date: ______________________________

By:

____________________________
(Print name of Authorized Representative and Affiant)

____________________________
(Signature of Authorized Representative and Affiant)

____________________________
(Company name)
SECTION 00 21 13

AIA DOCUMENT A701-1997 INSTRUCTIONS TO BIDDERS
AS AMENDED BY WASHINGTON COUNTY BOARD OF EDUCATION
Instructions to Bidders

for the following PROJECT:
(Name and location or address):

THE OWNER:
(Name and address):
Washington County Board of Education
10435 Downsville Pike
Hagerstown, MD  21740

THE ARCHITECT:
(Name and address):

TABLE OF ARTICLES
1 DEFINITIONS
2 BIDDER’S REPRESENTATIONS
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8 FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An Additions and Deletions Report that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.
ARTICLE 1  DEFINITIONS
§ 1.1 Bidding Documents include the Bidding Requirements and the proposed Contract Documents. The Bidding Requirements consist of the Advertisement or Invitation to Bid, Instructions to Bidders, Supplementary Instructions to Bidders, the bid form, and other sample bidding and contract forms. The proposed Contract Documents consist of the form of Agreement between the Owner and Contractor, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications and all Addenda issued prior to execution of the Contract.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, AIA Document A201 as modified by the Board of Education of Washington County, or in other Contract Documents are applicable to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect prior to the execution of the Contract which modify or interpret the Bidding Documents, including Drawings and Specifications, by additions, deletions, clarifications or corrections. Addenda will become part of the Contract Documents when the Construction Contract is executed

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents as the base, to which Work may be added or from which Work may be deleted for sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from the amount of the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment or services or a portion of the Work as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment or labor for a portion of the Work.

ARTICLE 2  BIDDER’S REPRESENTATIONS
§ 2.1 The Bidder by making a Bid represents that:

§ 2.1.1 The Bidder has read and understands the Bidding Documents or Contract Documents, to the extent that such documentation relates to the Work for which the Bid is submitted, and for other portions of the Project, if any, being bid concurrently or presently under construction.

§ 2.1.2 The Bid is made in compliance with the Bidding Documents.

§ 2.1.3 The Bidder has visited the site, become familiar with local conditions under which the Work is to be performed and has correlated the Bidder’s personal observations with the requirements of the proposed Contract Documents.

§ 2.1.4 The Bid is based upon the materials, equipment and systems required by the Bidding Documents without exception.

§ 2.1.5 Generally, neither law nor regulations make allowance for negligent errors either of omission or commission on the part of the bidders. Each Bidder, by making his Bid, represents that he has read and understands the Bidding Documents. Failure of the Bidder to thoroughly understand all aspects of the Solicitation before submitting his Bid will not act as an excuse to permit withdrawal of his Bid nor secure relief on plea of error.

§ 2.1.6 Once the Contract is awarded to the successful Bidder, no claims for any extra work will be allowed because of alleged impossibilities in the production of the results specified, or because of inadequate or improper plans or
specifications, and whenever a result is required, the successful Bidder shall furnish any and all extras and make any changes needed to produce, to the satisfaction of the Owner, the required results.

§ 2.1.7 The Bidder shall warrant that no person or selling agency has been employed or retained to solicit or secure the Contract upon an agreement of understanding for a commission or percentage, brokerage or contingent fee excepting bona fide employees or bona fide established commercial or selling agencies maintained by the bidder for the purpose of securing business. For breach or violation of the warrantee the Owner shall have the right to annul the Contract without liability or at its discretion to deduct from the contract price or otherwise recover the full amount of such commission, percentage, brokerage, or contingent.

§ 2.1.8 The Bidder, by the submission of this Bid agrees as a supplier of good, materials, equipment, or services covered by this Bid or the Contract that he will not discriminate in the employment in any way against any person or persons because of their race, creed, color, sex, national origin, age, or handicap. The Owner does not discriminate on the basis of race, color, sex, age, national origin, religion, or disability.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 COPIES

§ 3.1.1 Bidders may obtain complete sets of the Bidding Documents from the issuing office designated in the Advertisement or Invitation to Bid. Either a CD on which all of the Bidding Documents have been scanned or one (1) hard copy set of Bidding Documents will be issued to each bonafide bidder.

§ 3.1.2 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the Advertisement or Invitation to Bid, or in supplementary instructions to bidders.

§ 3.1.3 Bidders shall use complete sets of Bidding Documents in preparing Bids; neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

§ 3.1.4 The Owner and Architect may make copies of the Bidding Documents available on the above terms for the purpose of obtaining Bids on the Work. No license or grant of use is conferred by issuance of copies of the Bidding Documents.

§ 3.2 INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

§ 3.2.1 The Bidder shall carefully study and compare the Bidding Documents with each other, and with other work being bid concurrently or presently under construction to the extent that it relates to the Work for which the Bid is submitted, shall examine the site and local conditions, and shall at once report to the Architect errors, inconsistencies or ambiguities discovered.

§ 3.2.2 Bidders and Sub-bidders requiring clarification or interpretation of the Bidding Documents shall make a written request which shall reach the Architect at least seven days prior to the date for receipt of Bids.

§ 3.2.3 Interpretations, corrections and changes of the Bidding Documents will be made by Addendum. Interpretations, corrections and changes of the Bidding Documents made in any other manner will not be binding, and Bidders shall not rely upon them.

§ 3.2.4 Questions shall be in writing and sent to the Owner for interpretation and/or clarification.

§ 3.3 SUBSTITUTIONS

§ 3.3.1 The materials, products and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution.

§ 3.3.2 No substitution will be considered prior to receipt of Bids unless written request for approval has been received by the Architect at least ten days prior to the date for receipt of Bids. Such requests shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitution including drawings, performance and test data, and other information necessary for an evaluation. A statement setting forth changes in other materials, equipment or other portions of the Work, including changes in the work of other
contracts that incorporation of the proposed substitution would require, shall be included. The burden of proof of the merit of the proposed substitution is upon the proposer. Where less than three (3) manufacturers or products are listed in the Specifications, or the specification lists "Approved Equal" as an acceptable product, the burden of proof of equivalency rests with the Contractor and evidence shall be submitted to the Architect and approved by Architect with final approval to be determined by the Owner. Criteria includes but is not limited to performance, materials, craftsmanship, quality control, certification procedures or requirements, warranty, installation procedures, etc.. Any proposed substitution, or proposed equal product, must be submitted to the Architect for review, 10 days prior to the bid date. After the receipt of bids and award of the Contract, the Owner and Architect are under no obligation to review or approve requests for substitution or equal products that were not specifically mentioned in the Specifications. The Owner reserves the right to request a substitute at any time in the project.

§ 3.3.3 If the Architect approves a proposed substitution prior to receipt of Bids, such approval will be set forth in an Addendum. Bidders shall not rely upon approvals made in any other manner.

§ 3.3.4 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

§ 3.4 ADDENDA 
§ 3.4.1 Addenda will be transmitted to all who are known by the issuing office to have received a complete set of Bidding Documents.

§ 3.4.2 Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.

§ 3.4.3 Addenda will be issued no later than four days prior to the date for receipt of Bids except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Each Bidder shall ascertain prior to submitting a Bid that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

ARTICLE 4 BIDDING PROCEDURES
§ 4.1 PREPARATION OF BIDS
§ 4.1.1 Bids shall be submitted on the forms included with the Bidding Documents.

§ 4.1.2 All blanks on the bid form shall be legibly executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and figures. In case of discrepancy, the amount written in words shall govern.

(Paragraph deleted)
§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change."

(Paragraph deleted)
§ 4.1.7 Each copy of the Bid shall state the legal name of the Bidder and the nature of legal form of the Bidder. The Bidder shall provide evidence of legal authority to perform within the jurisdiction of the Work. Each copy shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further give the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached certifying the agent’s authority to bind the Bidder.

§ 4.1.8 The contractor or subcontractor shall use or supply American steel products in performance of this Contract in accordance with the Annotated Code of Maryland, State Finance and Procurement Article 17-301 – 17-306 as implemented in the Code of Maryland Regulations (COMAR) 21.11.02.

§ 4.2 BID SECURITY
§ 4.2.1 Each Bid shall be accompanied by a bid security in the form and amount required. The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and will furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract
or fail to furnish such bonds, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. The successful Bidder, upon his failure or refusal to execute and deliver the bonds required in Article 7 within ten (10) days after Notice of Award of the Contract shall forfeit to the Owner, as liquidated damages for such failure or refusal, the security deposited with his Bid.

§ 4.2.1.1 Bid bond shall be in the amount of five percent (5%) of the total Bid and shall be submitted with the Washington County Board of Education as the sole obligee and shall be issued for a period of sixty (60) calendar days from the receipt of Bids.

§ 4.2.2 Surety bond shall be written on AIA Document A310, Bid Bond 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 the power of attorney.

§ 4.2.3 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until either (a) the Contract has been executed and bonds, if required, have been furnished, or (b) the specified time has elapsed so that Bids may be withdrawn or (c) all Bids have been rejected.

§ 4.3 SUBMISSION OF BIDS
§ 4.3.1 All copies of the Bid, the bid security and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder’s name and address and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof. Submit the Standard Form of Proposal and required documents in duplicate.

§ 4.3.2 Bids shall be deposited at the designated location prior to the time and date for receipt of Bids. Bids received after the time and date for receipt of Bids will be returned unopened.

§ 4.3.3 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.4 Oral, telephonic, telegraphic, facsimile or other electronically transmitted bids will not be considered.

§ 4.3.5 All prospective bidders must be currently pre-qualified with the WCPS Purchasing Department to be eligible to participate in the bidding process.

§ 4.3.6 Upon request of the Owner, Bidders should be prepared to provide a list of major subcontractors after submission of bids and within two (2) business days of the request.

§ 4.3.7 Errors in bids: Bidders or their authorized representatives are expected to read and review the bid solicitation documents in order to inform themselves as to the conditions, requirements, and specifications before they submit bids: failure to do so will be at the bidder’s own risk and the bidder cannot secure relief from the plea of error. Generally, neither law nor regulations make allowance for errors either of omission or commission on part of bidders. In case of error in extension of prices in the bid, the unit price shall govern

§ 4.4 MODIFICATION OR WITHDRAWAL OF BID
§ 4.4.1 A Bid may not be modified, withdrawn or canceled by the Bidder during the stipulated time period following the time and date designated for the receipt of Bids, and each Bidder so agrees in submitting a Bid.

§ 4.4.2 Prior to the time and date designated for receipt of Bids, a Bid submitted may be modified or withdrawn by notice to the party receiving Bids at the place designated for receipt of Bids. Such notice shall be in writing over the signature of the Bidder. Written confirmation over the signature of the Bidder shall be received, and date- and time-stamped by the receiving party on or before the date and time set for receipt of Bids. A change shall be so worded as not to reveal the amount of the original Bid.

§ 4.4.3 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids provided that they are then fully in conformance with these Instructions to Bidders.

§ 4.4.4 Bid security shall be in an amount sufficient for the Bid as resubmitted.
§ 4.4.5 No Bidder shall modify, withdraw or cancel his Bid, or any part thereof, for sixty (60) days after the receipt of Bids.

ARTICLE 5 CONSIDERATION OF BIDS
§ 5.1 OPENING OF BIDS
At the discretion of the Owner, if stipulated in the Advertisement or Invitation to Bid, the properly identified Bids received on time will be publicly opened and will be read aloud. An abstract of the Bids may be made available to Bidders.

§ 5.2 REJECTION OF BIDS
The Owner shall have the right to reject any or all Bids. A Bid not accompanied by a required bid security or by other data required by the Bidding Documents, or a Bid which is in any way incomplete or irregular is subject to rejection.

§ 5.2.1 The Owner may make such investigations as he deems necessary to determine the ability of the Bidder to perform the Work, and prospective Bidders may be required to furnish evidence of performance of similar projects of this magnitude and complication and all such information and data as requested. The Owner reserves the right to reject any bid if evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that such Bidder is properly qualified to carry out obligations of the Contract and to complete the Work contemplated therein.

§ 5.2.2 Conditional Bids will not be accepted.

§ 5.2.3 The Owner also reserves the right to reject the bid of any Bidder who has previously failed to perform properly or complete on time, contracts of a similar nature, who is not in position to perform the contract, or who has habitually and without just cause neglected the payment of bills or otherwise disregarded his obligations to Subcontractors, material, men, or employees. In determining the lowest responsible Bidder the following elements, in addition to those above mentioned, will be considered, whether the Bidder involved:

1. Maintains a place of business
2. Has adequate plant equipment to do the work properly and expeditiously,
3. Has suitable financial status to meet the obligations incidental to the work
4. Has appropriate technical experience.

§ 5.2.4 The Bidder will be required to establish to the satisfaction of the Owner the reliability and responsibility of the proposed Subcontractors and perform the Work described in the Bidding Documents pertaining to such proposed Subcontractors’ respective trades.

§ 5.3 ACCEPTANCE OF BID (AWARD)
§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest qualified Bidder provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. The Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner’s judgment, is in the Owner’s own best interests. In the event of tie bids where all factors are equal, award shall be made to the Washington County Bidder, the out-of-County Bidder, the Bidder incorporated in Maryland, and the Bidder not incorporated in the state of Maryland, in that order of preference. If bidders within these geographical designations are equal as all factor of consideration the award shall be made by a coin toss.

§ 5.3.2 The Owner shall have the right to accept Alternates in any order or combination and to determine the low Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION
§ 6.1 CONTRACTOR’S QUALIFICATION STATEMENT
Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request, a properly executed AIA Document A305, Contractor’s Qualification Statement, unless such a Statement has been previously required and submitted as a prerequisite to the issuance of Bidding Documents.

(Paragraphs deleted)
§ 6.3 SUBMITTALS
§ 6.3.1 The Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, after notification of selection for the award of a Contract, furnish to the Owner through the Architect in writing:

1. a designation of the Work to be performed with the Bidder’s own forces;
2. names of the manufacturers, products, and the suppliers of principal items or systems of materials and equipment proposed for the Work; and
3. names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

§ 6.3.2 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder in writing if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder’s option, (1) withdraw the Bid or (2) submit an acceptable substitute person or entity with an adjustment in the Base Bid or Alternate Bid to cover the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND
§ 7.1 BOND REQUIREMENTS
§ 7.1.1 The Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Bonds may be secured through the Bidder’s usual sources. Firm issuing bonds must be an A-rated or above bond company (A.M. Best rating) and be on the United States Treasury list and be licensed to do business in the State of Maryland.

§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.1.3 If the Owner requires that bonds be secured from other than the Bidder’s usual sources, changes in cost will be adjusted as provided in the Contract Documents.

§ 7.1.4 Bid Bond shall be in the amount of five percent (5%) of the total Bid and shall be submitted with the Washington County Board of Education as the sole obligee and shall be issued for a period of sixty (60) calendar days from the receipt of Bids.

§ 7.1.5 The Contractors Performance Bond and Payment Bond shall be supplied in the amount of 100% of the value of the total contracted work and shall be submitted with the Washington County Board of Education as the sole obligee.

§ 7.1.6 The Owner shall require within ten (10) days after Notice of Award of the Contract, the selected bidder to furnish PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND in the amount of not less than (100%) of the total amount of the contract covering the faithful performance of the Contract and the payment of all obligations arising there-under in such form and amount as specified in the Specifications. Unless otherwise approved by the Owner, obtain bonds from same surety that furnished bid security. The premiums for said bonds shall be paid by the Bidder. Obtaining of bonds by the selected bidder shall be a condition precedent to effectuation of the Contract between the Owner and the selected bidder.

§ 7.2 TIME OF DELIVERY AND FORM OF BONDS
§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract. If the Work is to be commenced prior thereto in response to a letter of intent, the Bidder...
shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 The bonds shall be written on AIA Document A312, Performance Bond and Payment Bond. Both bonds shall be written in the amount of the Contract Sum.

§ 7.2.3 The bonds shall be dated on or after the date of the Contract.

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney indicating the monetary limit of such power.

ARTICLE 8 FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR
The Agreement for the Work will be written on AIA Document A101, as amended by the Board of Education of Washington County, Standard Form of Agreement Between Owner and Contractor Where the Basis of Payment Is a Stipulated Sum.

ARTICLE 9 MISCELLANEOUS
§ 9.1 OBJECTION OF AWARD
Any company objecting to the RFP procedure or the recommendation for award has five (5) business days following the date of award by the Board of Education to file a written protest with the Superintendent of Schools. It is the company’s responsibility to ascertain and confirm the date/time of the pertinent Board Meeting. The written appeal must be submitted on company letterhead, dated and signed by the senior officer in the company. The protest letter must include a request for review and ruling by WCPS, a detailed statement of the legal and factual grounds for the protest, including the resulting prejudice to the company, copies of relevant documents, and a statement of the form of relief being requested. Failure to comply with these instructions may result in the protest being deemed "not filed." Bid protests received later than five (5) days of the Board Meeting will result in the protest being deemed "not timely." The WCPS will not respond or address bid protests that do not conform to these instructions.

§ 9.2 EMARYLAND MARKETPLACE
Maryland law requires local and state agencies to post solicitations on eMaryland Marketplace Advantage (eMMA). Registration with eMaryland Marketplace is free. It is recommended that any interested supplier register at (https://emma.maryland.gov/page.aspx/en/usr/login?ReturnUrl=%2ffpage.aspx%2fen%2fbuy%2fhomepage) regardless of the award outcome for this procurement as it is a valuable resource for upcoming bid notifications for municipalities throughout Maryland.
SECTION 00 43 13

AIA DOCUMENT A310 – 2010 BID BOND
Bid Bond

CONTRACTOR:  
(Name, legal status and address)

SURETY:  
(Name, legal status and principal place of business)

OWNER:  
(Name, legal status and address)

BOND AMOUNT: $

PROJECT:  
(Name, location or address, and Project number, if any)

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety’s consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor’s bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
Signed and sealed this day of ,

(Contractor as Principal) (Seal)

(Witness)

(Title)

(Surety) (Seal)

(Witness) (Title)
SECTION 00 43 39

MINORITY BUSINESS ENTERPRISE (MBE) PROCEDURES
MINORITY BUSINESS ENTERPRISE PROCEDURES
FOR
STATE FUNDED
PUBLIC SCHOOL CONSTRUCTION PROJECTS
Revised JUNE 2008
With Amendments Revised SEPTEMBER and OCTOBER 2008

Approved by the Washington County Board of Education on September 4, 2008, with amendments approved by the Washington County Board of Education on November 6, 2008.

These procedures supersede the latest procedures which were previously approved on June 21, 2005.

DATE OF ORIGINAL APPROVAL: June 21, 2005
DATE OF APPROVAL OF REVISION: September 4, 2008
DATE OF APPROVAL OF AMENDMENTS: November 6, 2008

These model procedures were approved by the Interagency Committee on School Construction on June 26, 2008, with amendments approved on September 18 and October 15, 2008 and are consistent with the State's MBE policy in COMAR 21.11.03. The county board has adopted these model procedures and amendments, or other procedures that have been determined to be consistent with the requirements of COMAR 21.11.03, as the official policy of the Board of Education. If the county board adopts procedures other than the IAC model procedures and amendments, the procedures should include a certification by legal counsel that the adopted procedures are consistent with COMAR 21.11.03.

The procedures adopted by the county board shall be utilized by the Washington County Board of Education as a condition for the receipt of State funds through the Public School Construction Program.

The effective date for implementation of these procedures for projects in Washington County is November 14, 2008.

[Signature]
Elizabeth M. Morgan, Ph.D., / Date
Superintendent of Washington County Public Schools
Secretary to the Washington County Board of Education
# MINORITY BUSINESS ENTERPRISE PROCEDURES FOR STATE FUNDED PUBLIC SCHOOL CONSTRUCTION PROJECTS

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MINORITY BUSINESS ENTERPRISE PROCEDURES FOR STATE FUNDED PUBLIC SCHOOL CONSTRUCTION PROJECTS

BACKGROUND

In 1978, the Maryland General Assembly passed legislation, which was signed into law to establish the State’s Minority Business Enterprise Program. This new law set as a goal that at least 10 percent of each unit of State government’s total dollar value of procurement contracts for purchases and/or contracts be awarded to minority business enterprises. This law was subsequently modified and the goal was increased to 14 percent. More recently, in 2001, the goal was increased to 25 percent with subcontracting sub-goals of 7 percent for certified African American-owned businesses and 10 percent for certified women-owned businesses.

In 1979, the Rules, Regulations, and Procedures for the Administration of the School Construction Program were revised by the Board of Public Works to require each local board of education to adopt procedures to attempt to include minority business enterprises in State funded school construction projects. The State law was revised and now states: “The Interagency Committee on School Construction (IAC) shall require each local board of education to adopt procedures consistent with this chapter before obtaining funds for public school construction projects”.

In May 2007, the Rules, Regulations, and Procedures were replaced by regulations. The regulations concerning project procurement (COMAR 23.03.03) indicate that the State’s minority business enterprise goals and procedures apply to all State funded projects, irrespective of procurement method.

OVERVIEW

This Minority Business Enterprise (MBE) procedure document was originally developed in response to a requirement set forth in the Rules, Regulations, and Procedures for the Administration of the School Construction Program. The MBE requirement was originally established under HB 64, which was passed in the 1978 session of the Maryland General Assembly and signed into law as Chapter 575 of the Acts of 1978.

Since the Board adopted its original Minority Business Enterprise Procedures, there have been changes in State statutes, regulations adopted by the Board of Public Works, procedural requirements, project eligibility requirements and the level of State participation in school construction projects. This revised procedure is consistent with current legislation and the changes to the Code of Maryland Regulations (COMAR) requirements, effective November 7, 2005 and May 21, 2007.

1.0 PURPOSE

The purpose of the Procedures is to fulfill the intent of the law by setting goals for minority business enterprise participation in every contract that includes State funding through the Public School Construction Program. Local Educational Agencies (LEAs) shall attempt to achieve the result that a minimum of 25 percent of the total dollar value of all construction contracts is made directly or indirectly with certified minority business enterprises when State Public School Construction Program (PSCP) funds are utilized, with a minimum of 7 percent from certified African American-owned businesses, a minimum of 10 percent from certified women-owned businesses, and the balance from any certified minority business enterprises. All general contractors, including certified MBE firms, when bidding as general or prime contractors are required to attempt to achieve the MBE subcontracting goals from certified MBE firms.
2.0 EFFECTIVE DATE

These procedures have been adopted for use in Washington County and supersede previously utilized MBE procedures, and will take effect on or after November 14, 2008.

3.0 DEFINITIONS

1. Certification means the determination that a legal entity is a minority business enterprise consistent with the intent of Subtitle 3 of the State Finance and Procurement Article.

2. Certified Minority Business Enterprise means a minority business that holds a certification issued by the Maryland State Department of Transportation (MDOT).

3. Corporation, as defined by MDOT, is an artificial person or legal entity created by or under the authority of the laws of any state of the United States, the District of Columbia or a territory or commonwealth of the United States and formed for the purpose of transacting business in the widest sense of that term, including not only trade and commerce, but also manufacturing, mining, banking, insurance, transportation and other forms of commercial or industry activity where the purpose of the organization is profit. For eligibility for certification, disadvantaged and/or minority individuals must own at least 51 percent of the voting stock and at least 51 percent of the aggregate of all classes of stock that have been issued by the corporation. (Note: stock held in trust is not considered as stock held by the disadvantaged businesspersons when computing the business person(s) ownership.)

4. Managerial Control, as defined by MDOT, means that a disadvantaged or minority owner(s) has the demonstrable ability to make independent and unilateral business decisions needed to guide the future and destiny of a business.

Control may be demonstrated in many ways. For a minority owner to demonstrate control, the following examples are put forth, but are not intended to be all inclusive:

a. Articles of Incorporation, Corporate Bylaws, Partnership Agreements and other agreements shall be free of restrictive language which would dilute the minority owner’s control thereby preventing the minority owner from making those decisions which affect the destiny of a business;

b. The minority owner shall be able to show clearly through production of documents the areas of the disadvantaged business owner’s control, such as, but not limited to:

1) Authority to sign payroll checks and letters of credit;
2) Authority to negotiate and sign for insurance and/or bonds;
3) Authority to negotiate for banking services, such as establishing lines of credit; and
4) Authority to negotiate and sign for contracts.

c. Agreements for support services that do not lessen the minority owner’s control of the company are permitted as long as the disadvantaged or minority business owner’s authority to manage the company is not restricted or impaired.

5. Minority Business Enterprise (MBE) means any legal entity, except a joint venture, that is (a) organized to engage in commercial transactions, and (b) at least 51 percent owned and controlled by one or more individuals who are socially and economically disadvantaged including:

- African Americans;
- American Indian/Native Americans;
- Asians;
Hispanics;
Physically or mentally disabled individuals;
Women; or
A non-profit entity organized to promote the interests of physically or mentally disabled individuals.

6. **Minority Business Enterprise Liaison** means the employee of the school system designated to administer the Minority Business Enterprise Procedures for State funded public school construction projects.

7. **Operational Control**, as defined by MDOT, means that the disadvantaged or minority owner(s) must possess knowledge necessary to evaluate technical aspects of the business entity. The primary consideration in determining operational control and the extent to which the disadvantaged or minority owner(s) actually operates a business will rest upon the specialties of the industry of which the business is a part. The minority owner should have a working knowledge of the technical requirements needed to operate in his/her industry. Specifically, in the construction industry and especially among small (one to five person firms) contractors, it is reasonable to expect the disadvantaged or minority owner(s) to be knowledgeable of all aspects of the business. Accordingly, in order to clarify the level of operational involvement which a minority owner must have in a business for it to be considered eligible, the following examples are put forth, but are not intended to be all inclusive:

   a. The minority owner should have experience in the industry for which certification is being sought; and
   b. The minority owner should demonstrate that basic decisions pertaining to the daily operations of the business are independently made. This does not necessarily preclude the disadvantaged or minority owner(s) from seeking paid or unpaid advice and assistance. It does mean that the minority owner currently must possess the knowledge to weigh all advice given and to make an independent determination.

8. **Ownership**, as defined by MDOT, means that:

   a. The minority owner(s) of the firm shall not be subject to any formal or informal restrictions, which limit the customary discretion of the owner(s). There shall be no restrictions through, for example, charter requirements, by-law provisions, partnership agreements, franchise or distributor agreements or any other agreements that prevent the minority owner(s), without the cooperation or vote of any non-minority, from making a business decision of the firm.
   b. This means that the disadvantaged or minority persons, in order to acquire their ownership interests in the firm, have made real and substantial contributions of capital, expertise or other tangible personal assets derived from independently owned holdings without benefit of a transfer of assets, gift or inheritance from non-minority persons. Examples of insufficient contributions include a promise to contribute capital, a note payable to the firm or its owners who are not minority persons or the mere participation as an employee rather than as a manager. If the ownership interest held by a disadvantaged or minority person is subject to formal or informal restrictions, such as options, security interests, agreements, etc., held by a non-minority person or business entity, the options, security interests, agreements, etc., held by the non-minority person or business entity must not significantly impair the disadvantaged or minority person’s ownership interest.

9. **Partnership** means an unincorporated association of two or more persons to carry on as co-owners of a business for profit. For a partnership to be deemed eligible for certification under the MDOT Program, the disadvantaged or minority person’s interest must be at least 51 percent of the partnership capital.
10. **Socially and Economically Disadvantaged** means a citizen or lawfully admitted permanent resident of the United States who is socially disadvantaged and economically disadvantaged. The law establishes the level of personal net worth at $1,500,000, above which an individual may not be found to be socially and economically disadvantaged.

11. **Sole Proprietorship**, as defined by MDOT, is a for-profit business owned and operated by a disadvantaged or minority person in his or her individual capacity. For a sole proprietorship to be deemed eligible for certification under the DBE/MBE Program, the disadvantaged or minority person must be the sole proprietor.

### 4.0 MBE GOAL SETTING PROCEDURES

1. The MBE program requires that all race-neutral measures be considered before making use of race-based measures. Using a combination of race-neutral and race-based measures for each specific school construction project will help ensure that certified MBE firms are afforded the opportunity to submit bids and be utilized to the greatest extent possible.

2. Race-neutral measures include any action taken by the LEA to make it easier for all contractors, including MBEs, to compete successfully for public school construction project contracts.

3. Race-based measures include setting an overall MBE goal and MBE subgoals, if applicable, based upon race, gender, ethnicity, etc., for a specific project.

4. The overall MBE goal and the subgoals, if applicable, should be set for each specific project, considering but not limited to, the following factors:

   a. The extent to which the work to be performed can reasonably be segmented to allow for MBEs to participate in the project;
   b. A determination of the number of certified MBEs that potentially could perform the identified work;
   c. The geographic location of the project in relationship to the identified certified MBEs;
   d. Information obtained from other State departments/agencies related to establishing a MBE goal and/or subgoals for similar construction projects or work in the jurisdiction;
   e. Information obtained from other State departments/agencies related to MBE participation in similar construction projects or work in the jurisdiction; and
   f. Any other activities or information that may be identified as useful and productive.

5. The Superintendent or designee shall establish one or more Procurement Review Groups (PRG). The PRG must include at a minimum the MBE Liaison and the Procurement Officer (P.O.) or a representative from the Procurement Office. The PRG could also include a capital improvement project manager, the project architect, the cost estimator, the construction manager, and/or other individuals selected by the Superintendent or designee.

   a. The PRG should communicate and/or meet as needed to consider the MBE subcontracting goal and subgoals, if applicable, for individual projects or groups of projects.
   b. The PRG should consider the factors cited in 4 above when establishing the MBE goal and subgoals, if applicable, for each project or segmented piece of a project that are reasonable and attainable.
   c. The PRG must complete and submit a written analysis for each state-funded school construction project with an estimated cost that is expected to exceed $200,000.
i. For state-funded projects that require review of construction documents (CD), the written analysis shall be submitted with the CD documents to the Department of General Services, and will be reviewed by DGS for submission, appropriate signatures, and correspondence between the goal and subgoals, if applicable, indicated in the analysis and those of the procurement documents.

ii. For state-funded projects that do not require review of construction documents, the written analysis shall be submitted to the Public School Construction Program, and will be reviewed by the PSCP for submission and appropriate signatures.

iii. For locally funded projects that are anticipated to be requested for state approval or planning and funding, the written analysis shall be submitted with the CD documents to the Maryland State Department of Education, and will be reviewed by MSDE for submission, appropriate signatures, and correspondence between the goal and subgoals, if applicable, indicated in the analysis and those of the procurement documents. Submission of this document is a pre-condition for recommendation for state approval of planning and funding when submitted in an annual CIP.

d. For projects estimated to cost between $50,000 and $200,000 the same analysis form is to be completed and submitted. This could be a responsibility of the PRG, but could be performed by others as well.

i. For state-funded projects that require review of construction documents (CD), the written analysis shall be submitted with the CD documents to the Department of General Services, and will be reviewed by DGS for submission, appropriate signatures, and correspondence between the goal and subgoals, if applicable, indicated in the analysis and those of the procurement documents.

ii. For state-funded projects that do not require review of construction documents, the written analysis shall be submitted to the Public School Construction Program, and will be reviewed by the PSCP for submission and appropriate signatures.

e. If the project cost is estimated to exceed $200,000 then a copy of the written analysis shall also be sent to GOMA at the same time that the written analysis is submitted to the DGS of the PSCP.

f. The PRG should consult with local counsel for the Board of Education as needed.

6. It is recognized that by utilizing the factors cited in 4 above, the MBE goal and/or subgoals, if applicable, for a specific project or portion thereof may be significantly higher than the overall goals of the program (25% overall, with 7% from African American-owned businesses and 10% from women-owned businesses). It is also recognized and possible that there will be MBE goals set that are lower than those stated above or even that no MBE goal and/or subgoals will be set for a specific project or the segmented piece of the project.

7. Assistance in reviewing the factors cited in 4 above and setting a goal and/or subgoals, if applicable, for specific projects or a segmented piece of a project can be obtained by contacting the Public School Construction Program and/or the Governor’s Office of Minority Affairs.

5.0 IMPLEMENTING PROCEDURES - $50,000 OR LESS

For construction projects estimated to cost $50,000 or less, the following procedures will be utilized
1. A MBE goal and/or MBE subgoals are not required to be set for contracts that are anticipated to be for $50,000 or less.

2. All advertisements, solicitations, and solicitation documents shall include the following statement:
   
a. "Certified Minority Business Enterprises are encouraged to respond to this solicitation."

3. To encourage greater MBE participation the staff of the school system should send out notices of potential projects and a specific project to MBEs to solicit bids or proposals directly from minority business enterprise contractors that are certified.

4. A copy of the solicitation notice, preferably electronically, shall be sent to the Governor’s Office of Minority Affairs at the same time the advertisement for the solicitation is released.

5. When a pre-bid or pre-proposal conference or meeting is held, the MBE liaison or designated representative shall explain that all bidders or offerors are encouraged to utilize certified MBEs for this project or segments of the project.

6. Upon request for a specific project, the school system shall provide one set of drawings and specifications (and addenda when issued) to minority business enterprise associations recognized by the Governor’s Office of Minority Affairs. They will be available free of charge to be picked up at a location designated by the LEA. A review of the bid or proposal activity submitted by an association’s members may be initiated to justify continuation of this service.

7. Minority Business Enterprise forms identified in Section 6.0 of this procedure for projects over $50,000, are not required to be submitted for these projects ($50,000 or less).

8. The names of prime contractors obtaining drawings and specifications will be shared with certified MBEs and MBE associations, upon request.

9. At the time of the contract award, the MBE Liaison or a designated person will record any anticipated certified minority business enterprise participation data made available from the successful contractor.

10. A business that presents itself as a minority business may participate in a project but may not be counted toward MBE participation until it is a certified minority business enterprise. If the MBE is not certified at the time of contract award, it may not be counted at that time. Only the funds paid after MDOT certification can be counted as MBE participation in the project. If a certified MBE fails to meet the standards specified in State Finance and Procurement Article14-301 (G) and (I), Annotated Code of Maryland, the payments made to the MBE can be recorded and counted under a contract entered into when the MBE was eligible and certified. Ineligibility of an MBE to participate in the MBE program may not be the sole cause of the termination of the MBE contractual relationship for the remainder of the term of the contract.

11. The contractor will complete the Standard Monthly Contractor’s Requisition for Payment (IAC/PSCP Form 306.4), specifically page 3 of 16, Minority Business Enterprise Participation, with each requisition submitted for payment. If certified MBE firms are known at the time of contract award their names and other appropriate information should be entered on page 3 of the first and all subsequent requisitions for payment. Any MBEs identified during the life of the project should be added as soon as the contractor engages them.
12. Upon completion of the project the contractor will provide a summary of the total of all funds paid to certified MBE firms. This should be within the contractor’s final requisition for payment.

6.0 IMPLEMENTING PROCEDURES - Over $50,000

For construction projects estimated to cost in excess of $50,000, the following procedures will be utilized:

1. All advertisements, solicitations, and solicitation documents shall include the following statements:
   a. "Certified Minority Business Enterprises are encouraged to respond to this solicitation notice."
   b. "The contractor or supplier who provides materials, supplies, equipment and/or services for this construction project shall attempt to achieve the specific overall MBE goal of ____ percent established for this project. All prime contractors, including certified MBE firms, when submitting bids or proposals as general or prime contractors, are required to attempt to achieve this goal from certified MBE firms."
   c. If subgoals have been established for this project then one of the following should be included:
      1) “The subgoals established for this project are ____ percent from African American-owne business and ____ percent from woman-owned businesses.”
      2) “The subgoal established for this project is ____ percent from African American-owned businesses.”
      3) “The subgoal established for this project is ____ percent from woman-owned businesses.”
   d. "The bidder or offeror is required to submit with its bid or proposal a completed Attachment A - Certified MBE Utilization and Fair Solicitation Affidavit and Attachment B - MBE Participation Schedule, as described in the solicitation documents.
   e. If there is no overall MBE goal or MBE subgoals established for the project, then only 1.A. above is to be included.

2. Other Advertisement and Outreach Requirements
   a. To encourage greater MBE participation the staff of the school system should send out notices of potential projects to MBEs or solicit bids or proposals directly from minority business enterprise contractors that are certified.
   b. A copy of the solicitation notice, preferably electronically, shall be sent to the Governor’s Office of Minority Affairs at the same time the advertisement for the solicitation is released.
   c. Upon request for a specific project, the school system shall provide one set of drawings and specifications (and addenda when issued) to minority business enterprise associations recognized by the Governor’s Office of Minority Affairs. They will be available free of charge to be picked up at a location designated by the LEA. A review of the bid or proposal activity by an association’s members may be initiated to justify continuation of this service.
   d. When a pre-bid or pre-proposal conference is held, the MBE Liaison or designated representative shall explain the MBE goal and subgoals, if applicable; the MBE provisions of the solicitation; the documentation required at the time of submission; its relationship to the responsiveness of the bidder or offeror; how to complete the required attachments, particularly A, B, and C; and additional information and supporting documentation that may be required after the bid or proposal opening. All contractors
who attend the pre-bid or pre-proposal conference should receive a list or information explaining how to obtain a listing of certified MBE firms who could perform the work or have expressed an interest in performing the school construction work required for the specific project in the jurisdiction.

e. The names of prime contractors obtaining drawings and specifications will be shared with certified MBEs and MBE associations, upon request.

f. The MBE liaison, in conjunction with the procurement officer or project staff, should respond to all applicable questions and concerns relating to the project’s MBE requirements completely and in a timely fashion to ensure that all potential contractors and subcontractors can compete effectively.

3. All Solicitation Documents Shall Include the Following:

   a. “Certified Minority Business Enterprises are encouraged to respond to this solicitation notice”.

   b. “The contractor or supplier who provides materials, supplies, equipment and/or services for this construction project shall attempt to achieve the result that a minimum of _% of the total contract value is with certified Minority Business Enterprises, with a minimum of _% from certified African American-owned businesses, a minimum of _% from certified women-owned businesses, and the balance from any certified Minority Business Enterprises. All contractors, including certified MBE firms, when submitting bids or proposals as prime contractors, are required to attempt to achieve the MBE goal and subgoals, if applicable, from certified MBEs”. Note: see 6.1.C. above for variations that may be required.

   c. Each bid or offer submitted, including a submittal from a certified MBE in response to this solicitation, shall be accompanied by a completed Attachment A - Certified MBE Utilization and Fair Solicitation Affidavit and a completed Attachment B - MBE Participation Schedule. These two attachments must be accurate and consistent with each other.

       1) Attachment A and Attachment B shall be submitted with the sealed bid price or proposal at a place, date, and time specified in the solicitation document.

       2) As an alternative, and at the discretion of the school system, Attachment A could be submitted with the sealed bid price or proposal at a place, date, and time specified in the solicitation document. The sealed bids or proposals received by the time specified could be held, unopened for a maximum of 30 minutes. Within that time (30 minutes) each bidder or offeror must submit Attachment B, in a separate sealed envelope. The sealed price envelopes from each bidder or offeror who submits both the sealed bid or proposal and the envelope with Attachment B will then be opened and reviewed and recorded as a viable submission. Any contractor that fails to submit the second envelope, with Attachment B, prior to the specified time allowed (30 minutes) after the submittal of the sealed bid or proposal will be deemed non-responsive and the sealed bid or proposal will not be opened or considered.

   d. The submittal of a completed and signed Attachment A - Certified MBE Utilization and Fair Solicitation Affidavit and a completed and signed Attachment B - MBE Participation Schedule indicates the bidder’s or offeror’s recognition and commitment to attempt to achieve the MBE goal and/or MBE subgoals, if applicable, for the specific project.

       1) The bidder or offeror recognizes that their efforts made to initiate contact, to solicit, and to include MBE firms in this project will be reviewed carefully and evaluated based upon the actions taken by them prior to and up to 10 days before the bid or proposal opening. Follow-up actions taken by the bidder or offeror within the 10 days prior to the bid opening will also be considered.
2) Based upon this review and evaluation it will be determined, by the MBE liaison, procurement officer, or a designated person, if a good faith effort was made by the apparent low bidder or apparent successful offeror.

e. The bidder or offeror must check one of the three boxes on Attachment A, which relates to the level of MBE participation achieved for the project. The bidder’s or offeror’s signature indicates that in the event that they did not meet the MBE goal or subgoals, if applicable, that:

1) They are therefore requesting a waiver, and
2) Documentation of their good faith efforts will be provided to the school system staff within 10 days of being notified that they are the apparent low bidder or apparent successful offeror.

f. The bidder or offeror must submit Attachment B (as and when described above), which lists and provides information related to each certified MBE firm that the bidder or offeror will utilize on this project. A completed and accurate Attachment B is required. All of the work specified to be performed by each MBE firm, the contact information, MDOT certification number, minority code, the dollar values, and percentages must be correct.

g. Attachment B should be completed and submitted with all calculations utilizing the base bid or offer only. A revised Attachment B should be submitted by the successful bidder or offeror once a determination is made as to the acceptance and/or rejection of any alternates.

h. If a request for a waiver has been made, the appropriate box on Attachment A has been checked and the attachment signed, then the LEA should obtain and review the apparent low bidder’s or successful offeror’s supporting documentation of the good faith efforts to justify the granting of the waiver, prior to submitting the contract award for approval to the board of education.

i. The following documentation shall be considered as part of the contract, and shall be furnished by the apparent low bidder or successful offeror to the MBE Liaison or designated person, within ten (10) working days from notification that the firm is the apparent low bidder or successful offeror:

1) A completed Attachment D - Minority Business Enterprise Subcontractor Project Participation Statement shall be completed and signed by the prime contractor and each MBE firm listed on Attachment B - MBE Participation Schedule and Attachment C - Outreach Efforts Compliance Statement shall be signed and completed by the bidder or offeror.

2) Notification for purposes of this procedure means the earliest of the following methods of communication: orally in person, orally by telephone, orally by a telephone message, a faxed communication, a letter by date received or an electronic communication.

3) The ten (10) working days do not include the day the notification is received, weekends or holidays (State or Federal), but the material submitted must be received by the close of business on the tenth day.

4) The requirement to submit the above-listed documentation within the time frame specified will be considered by the IAC in its review of the request for contract award for the project. Failure to submit the required documentation within the time frame specified may result in a delay of the approval of the award of the contract, or the materials being returned without the approval of the award of the contract.

4. Waiver Procedures

a. If the apparent low bidder or successful offeror has determined that they are unable to meet the overall MBE goal or subgoals, if applicable, for the project at the time of
submission of a bid or offer, they must check either of the two boxes on Attachment A. The signature recognizes and acknowledges that a request for a waiver is being made. The apparent low bidder or successful offeror will therefore be required to submit information and substantiating documentation that will be reviewed to justify the granting of a waiver.

b. If the apparent low bidder or successful offeror is unable to achieve the overall MBE contract goal and/or the MBE subgoals, if applicable, from certified African American-owned businesses and/or from certified women-owned businesses, the apparent low bidder or successful offeror shall submit, within 10 working days from notification that the firm is the apparent low bidder or successful offeror, a completed Attachment C - Outreach Efforts Compliance Statement, Attachment E - Minority Subcontractors Unavailability Certificate, and Attachment F - MBE Waiver Documentation which shall include the following:

1) A detailed statement of the efforts made by the bidder or offeror to identify and select portions of the work proposed to be performed by subcontractors in order to increase the likelihood of achieving the stated goal;
2) A detailed statement of the efforts made by the bidder or offeror prior to and up to at least ten (10) days before the bid or proposal opening to solicit minority business enterprises through written notices that describe the categories of work for which subcontracting is being solicited, the type of work to be performed and specific instructions on how to submit a bid or proposal;
3) Follow-up actions taken by the bidder or offeror within the 10 days prior to the bid or proposal opening will also be considered.
4) A detailed statement of the bidder’s or offeror’s efforts to make personal contact with MBE firms identified for item (2) above;
5) A record of the name, address, telephone number and dates contacted for each MBE identified under items (2) and (3) above;
6) A description of the information provided to MBEs regarding the drawings, specifications and the anticipated time schedule for portions of the work to be performed;
7) Information on activities to assist minority business enterprises to fulfill bonding requirements or to obtain a waiver of these requirements;
8) Information on activities to publicize contracting opportunities to minority business enterprises, attendance at pre-bid or pre-proposal meetings or other meetings scheduled by the MBE Liaison or designated representative; and
9) As to each MBE that placed a subcontract quotation or offer which the apparent low bidder or successful offeror considers not to be acceptable, a detailed statement of reasons for this conclusion.

c. In addition to any waiver documentation the apparent low bidder or successful offeror shall submit one completed Attachment D - Minority Business Enterprise Subcontractor Project Participation statement for each MBE firm that will participate in the project consistent with the information previously provided at the time of the submission of Attachment B or the revised Attachment B.

d. A waiver of an MBE contract goal or subgoal, if applicable, may be granted by the school system only upon receipt of Attachment C - Outreach Efforts Compliance Statement, Attachment E - Minority Subcontractors Unavailability Certificate, and Attachment F - MBE Waiver Documentation as described above in items 1) through 9)

1) The MBE Liaison will review and accept or reject the minority business enterprise material that is submitted, and could obtain legal advice or assistance from their attorney.
2) The MBE waiver request may not be considered unless all of the documentation specified above has been submitted in a timely fashion by the apparent low bidder or successful offerer.
3) Assistance in the review of a request for a waiver (the documentation and justifications) may be requested from the Public School Construction Program and/or the Governor’s Office of Minority Affairs.

4) If a determination is made that the apparent low bidder or successful offeror did make a good faith effort, based upon a review of the documentation submitted, then the waiver must be granted. The award of contract shall then be made. The material and information submitted, including the LEA’s review and analysis notes and conclusion shall be retained in the project file.

5) If a determination is made that the apparent low bidder or successful offeror did not make a good faith effort, based upon a review of the documentation submitted, then the waiver should not be granted. The material and information submitted, including the LEA’s review and analysis notes and conclusion, shall be retained in the project file. The award of contract shall then be made to the next lowest bidder or offeror, who meets the contractual requirements, including the MBE requirements.

6) When a waiver is granted, a copy of Attachment F - MBE Waiver Documentation, accepted and signed by a school system representative and with the reasons for the determination, shall be forwarded to the Governor’s Office of Minority Affairs and the Public School Construction Program within ten (10) days after approval of the contract award by the board of education. Failure to submit the required documentation within the time frame specified may result in delayed approval of the award of contract by the IAC.

5. All Contracts Shall Include The Following:

a. “The contractor shall perform the contract in accordance with the representations made in Attachment A - Certified Minority Business Enterprise Utilization and Fair Solicitation Affidavit and Attachment B - MBE Participation Schedule, submitted as part of the bid or proposal”.

b. “Failure to perform the contract as specified and presented in the bid or proposal submission without prior written consent of the owner shall constitute a violation of a material term of the contract”.

1) The contractor shall structure his/her operations for the performance of the contract to attempt to achieve the MBE goals as stated in the solicitation document.

2) The contractor agrees to use his/her best efforts to carry out these requirements consistent with the efficient and effective performance of the contract.

3) The contractor must ensure that all certified MBEs shall have the maximum practical opportunity to compete for additional subcontract work under the contract, even after the award of the contract.

4) The contractor shall submit monthly to the MBE Liaison or the school system’s designated representative a report listing any unpaid invoices, over 30 days old, received from any certified MBE subcontractor, the amount of each invoice and the reason payment has not been made.

5) The contractor shall include in its agreements with its certified MBE subcontractors, a requirement that those subcontractors submit monthly to the MBE Liaison or appropriate representative a report that identifies the prime contract and lists all payments received from the contractor in the preceding 30 days, as well as any outstanding invoices, and the amount of those invoices.

6) The contractor shall cooperate in any reviews of the contractor’s procedures and practices with respect to minority business enterprises, which the MBE Liaison, the Public School Construction Program, and/or the Governor’s Office of Minority Affairs may, from time to time, conduct.

7) The contractor shall maintain such records as are necessary to confirm compliance with its MBE participation obligations. These records must indicate the identity of certified minority and non-minority subcontractors employed on the contract, the type of work performed by each, and the actual dollar value of work performed.
Subcontract agreements documenting the work performed by all MBE participants must be retained by the contractor and furnished to the MBE Liaison and or appropriate representative on request.

8) All records concerning MBE participation must be retained by the contractor for a period of five years after final completion of the contract, and will be available for inspection by the MBE Liaison, representatives from the Public School Construction Program and/or other designated official entities.

9) At the option of the MBE Liaison or appropriate agency representative, upon completion of the contract and before final payment and/or release of retainage, the contractor shall submit a final report in affidavit form and under penalty of perjury, of all payments made to, or withheld from MBE subcontractors.

10) If at any time after submission of a bid or proposal and before execution of a contract, the apparent successful bidder or offeror determines that a certified MBE listed on Attachment B - MBE Participation Schedule has become or will become unavailable, then the apparent successful bidder or offeror shall immediately notify the procurement officer and provide such officer with a reason(s) why the change has occurred. Any desired change in Attachment B - MBE Participation Schedule shall be approved in advance by the procurement officer and shall indicate the contractor’s efforts to substitute another certified MBE subcontractor to perform the work. Desired changes occurring after the date of contract execution may occur only upon written approval by the LEA.

11) A business that presents itself as a minority business may participate in a project but the contract value may not be counted toward the MBE goal or subgoals, if applicable, until the business is certified by MDOT. If it is not certified at the time of contract award it may not be counted toward the goal or subgoals, if applicable, at that time. Only the funds paid after MDOT certification can be counted toward meeting the MBE goal or subgoals, if applicable. If a certified MBE fails to meet the standards specified in State Finance and Procurement Article.14-301, Annotated Code of Maryland, the payments made to the MBE can be recorded and counted under a contract entered into when the MBE was eligible and certified. Ineligibility of an MBE to participate in the MBE program may not be the sole cause of the termination of the MBE contractual relationship for the remainder of the term of the contract.

12) Contractors are encouraged to seek additional MBE participation in their contracts during the life of the project. Any additional MBE participation from certified MBEs should be reported to the MBE liaison and should be included in subsequent monthly requisitions for payment.

13) The contractor shall complete the Standard Monthly Contractor’s Requisition for Payment (IAC/PSCP Form 306.4), specifically page 3 of 16, Minority Business Enterprise Participation, with each requisition submitted for payment. This submittal should accurately reflect the payments to be made that month to MBEs, and the cumulative total for the period specified. Any and all MBE firms that are identified on Attachment B – MBE Participation Schedule should be included on page 3 of the first and all subsequent requisitions for payment. Any MBEs identified during the life of the project should be added as soon as the contractor engages them.

14) At the completion of the project the contractor shall prepare a written summary of the final certified MBE participation in the contract as compared to the proposed participation at the time of contract award. This should include the name of each certified MBE, the amount that was anticipated to be paid at the time of contract award, the amount actually paid, and an explanation of any differences that have occurred. Special attention should be given to any situations where the final payments to any MBE was below the level of commitment at the time of contract award.

6. Projects Utilizing a Construction Manager Delivery Method
This section of the procedure has been prepared based upon the utilization of Construction Manager Agency method of delivery. If another alternative method of project delivery is being considered, then these procedures would need to be adapted in consultation with the PSCP before proceeding.

a. For projects that are being designed and solicited utilizing a Construction Manager Agency delivery method with multiple prime contracts, the school system can structure its procedures to attain the overall MBE goal and subgoals, if applicable, for the project as presented below:

b. The MBE liaison and other school system staff should work with the project’s construction manager, cost estimator, and architect, along with any other individuals who could provide assistance, to determine the overall MBE utilization strategy for the work required, appropriate bid packages, and an appropriate overall MBE goal and subgoals, if applicable, for each specific bid or proposal package.

c. The overall MBE goal and subgoals, if applicable, for the project shall represent the aggregate of the individual goals and subgoals, if applicable, set for each bid or proposal package.

d. In setting the specific goals and subgoals, if applicable, for each solicitation package consideration should be given to the potential for MBE participation to the maximum extent possible. The information and procedures provided in section 4.0 MBE Goal Setting Procedures should be consulted and followed for these types of projects.

e. Prior to submitting the construction documents for State review and authorization to solicit bids or proposals, the school system’s representative will prepare a complete list of the individual solicitation packages and indicate the MBE goal and subgoals, if applicable, for each solicitation package. This would include the overall MBE goal and subgoals, if applicable, established in the solicitation documents, the estimated cost for each solicitation package, and the estimated MBE dollar amounts for each solicitation package. A copy of this list should be submitted with the construction documents. The list should be retained as a record by the school system for comparison to the actual contracts awarded with MBE participation, and the final actual MBE participation at the completion of the project.

f. Contractors submitting bids or proposals for solicitation packages that do not include a MBE goal and subgoals, if applicable, would not be required to submit any of the MBE attachments that are otherwise required nor would they be required to indicate that they are requesting a waiver. The school system representative would, however, request information from the contractor at the completion of the project to determine if any certified MBE firms had participated in the contract.

g. All other submittals of MBE materials and reporting requirements are applicable for the project, including the submittal of attachments a and b as described above in section 6.0. This includes the documentation for a request for a waiver, if applicable and appropriate.

7. Projects Utilizing an Indefinite Delivery/Indefinite Quantity (IDIQ) or Job Order Contracting (JOC) Method of Delivery

a. The solicitation should be prepared and the overall MBE goal and subgoals, if applicable, established based upon the type of work that is anticipated to be specified or performed under the contract and the availability of certified MBEs. This could include an analysis of the percentages of the different types of work, the estimated dollar value in the entire contract, and the availability of MBEs.

b. If an overall goal and subgoals, if applicable, are set the bidders or offerors would be required to submit Attachment A - Certified Minority Business Enterprise Utilization and Fair Solicitation Affidavit in which they could indicate their anticipated MBE participation based upon the entire contract amount and the types of work specified. The award of contract can be made based upon their estimate of MBE participation since there is no specific task order or description of work to be performed and subcontractors have not been identified or engaged through any type of commitment or subcontract.
c. Since MBE participation is only anticipated in a general sense as an objective and specific contracts to MBEs have not been signed, then the contract award would not be included in any reporting to the PSCP or subsequent reporting to GOMA.

d. However, as the contract proceeds and individual task orders and/or purchase orders are issued, the contractor should submit Attachment B - MBE Participation Schedule for any and all projects or work where MBE subcontractors and/or suppliers might reasonably be utilized. Discussions between the contractor or offeror and the LEA as the task orders and/or purchase orders are being developed should address this aspect of the contract requirements.

e. Any MBE participation should be recorded by the MBE liaison and reported to the PSCP MBE Liaison as the task orders and/or purchase orders are approved.

f. The contractor shall complete the Standard Monthly Contractor’s Requisition for Payment (IAC/PSCP FORM 306.4), specifically page 3 of 16, Minority Business Enterprise Participation, with each requisition submitted for payment. This submittal should accurately reflect the payments to be made that month to MBE S, and the cumulative total for the period specified. Any and all MBE firms that are identified on Attachment B - MBE Participation Schedule should be included on page 3 of the first and all subsequent requisitions for payment. Any MBEs identified during the life of the project should be added as soon as the contractor engages them.

g. At the completion of the contract period or the full utilization of the contract’s value a report should be prepared by the LEA MBE Liaison and submitted to the PSCP MBE Liaison summarizing the MBE participation in each and all of the task orders or purchase orders issued under the contract. This should include the anticipated MBE participation prior to the issuance of the solicitation, the MBE participation anticipated at the time of contract award and the actual MBE participation at the completion of the contract.

8. Projects Utilizing the Design/Build Delivery Method

a. The solicitation is for both A/E services and the actual construction of a public school project. The solicitation should be prepared and the MBE goal and subgoals, if applicable, established for the construction work that is anticipated for the project. The goal setting procedures described in Section 4.0 above should be utilized for these types of projects.

b. The bidders or offerors should be required to submit Attachment A - Certified Minority Business Enterprise Utilization and Fair Solicitation Affidavit on which they would indicate their anticipated MBE participation based upon the construction work anticipated and their understanding of the MBE goal and subgoals, if applicable, the types of work involved, and the availability of certified MBEs for the project. Since there are no detailed plans or designs for the project and there are no contracts or subcontracts for the actual construction work there is no need to submit any other MBE attachments, at this time.

c. If the bidder or offeror, who is to be awarded this contract has indicated that they do not anticipate achieving the overall MBE participation goal and subgoals, if applicable, for this project on Attachment A, then they are in effect requesting a waiver. They will be required to submit documentation at a later date to justify this request.

d. As the project proceeds through the design phase and the project is nearing the completion of the construction documents for submission to the State to review, the Design/Build Team (team) in consultation with LEA representatives should discuss the opportunities and potential for certified MBEs to participate in the project.

e. The team should begin to identify potential contractors and subcontractors, opportunities to segment the project, and MBEs that could participate in the project.

f. At a point in time that is approximately 30 days prior to the anticipated CD submission to the State, the team should complete and submit Attachment B - MBE Participation Schedule to the LEA for their review and approval.
g. If the team had indicated on Attachment A that they would meet the goals and the information on Attachment B indicates that they did meet the goals then the team should proceed with the construction of the project.

h. If the team had indicated on Attachment A that they did not anticipate meeting the overall MBE goal and subgoals, if applicable, or only a portion of the goal and subgoals, if applicable, then Attachment B should be reviewed by the LEA. The team should, at this time, submit their documentation in support of the waiver requested.

i. The proposed MBE participation should be reviewed and a determination made as to whether the team has made a good faith effort to meet the MBE goals and subgoals, if applicable, established for the project and as stated on Attachment A, previously submitted.

j. If a request for a waiver is made and approved, Attachment F – MBE Waiver Documentation should be signed by a school system representative and submitted to the PSCP and the Governor’s Office of Minority Affairs.

k. Since there was no MBE participation reported at the time of the award of the Design/Build contract, the LEA would submit the entire package of information, including all of the MBE related attachments to the PSCP within ten (10) days of the team being directed to proceed with the actual construction work.

l. All other submittals of MBE materials and reporting requirements are applicable for the project, as described above in Section 6.0.

7.0 RECORDS AND REPORTS

1. The MBE Liaisons shall maintain such records as are necessary to confirm compliance with its Minority Business Enterprise Procedures and activities. The records shall be maintained until the project is audited by the Public School Construction Program. These records shall include by project:

   a. The contractor report submitted at the completion of the project;
   b. The identity of the minority contractors employed on the project;
   c. The type of work performed;
   d. The actual dollar value of the work, services, supplies or equipment; and
   e. The MBE percentage of the total contract.

2. The MBE Liaison will maintain a record of all waivers approved for each project or solicitation package where the prime contractor was unable to achieve the established overall goal or subgoals, if applicable. The MBE Liaison will, however, report to the PSCP all MBE participation by MDOT certified firms who are prime contractors, subcontractors, suppliers, or otherwise making an economically viable contribution to each project. This information shall be reported to PSCP within ten (10) days after approval of the award of the contract by the board of education.

3. The LEA shall submit the “Certified Minority Business Enterprise Participation Standard Monthly Contractor’s Requisition for Payment” (IAC/PSCP Form 306.4 page 3 of 16, located in the Administrative Procedures Guide), which is Attachment G in this procedure, to the PSCP Director of Fiscal Services as part of the regular monthly request for payment for the project.

4. The LEA shall submit the “Close-Out Cost Summary” (IAC/PSCP Form 306.6 located in the Administrative Procedures Guide), which is Attachment H of this procedure, along with the “Certified Minority Business Enterprise Participation Standard Monthly Contractor’s Requisition for Payment” (IAC/PSCP Form 306.4) to the PSCP Director of Fiscal Services within 180 days of completion of the project.
5. Each fiscal year end, PSCP Fiscal Services will create a report “Payments Made To Contractors during The Fiscal Year” and maintain such records as are necessary to confirm compliance with its minority business enterprise procedures and activities.

6. Each fiscal year end, PSCP Fiscal Services will create a report “Projects Completed During the Fiscal Year” and maintain such records as are necessary to confirm compliance with its Minority Business Enterprise Procedures and activities. This report will compare the overall MBE goal and subgoals, if applicable, for each specific project with the MBE participation anticipated at the time of contract award and the actual MBE participation at the completion of the project.

8.0 MONITORING

1. The LEA’s procurement personnel or project staff shall verify that the certified MBE’s listed in the MBE participation schedule are actually performing the work.

2. The LEA’s procurement personnel shall ensure that MBE subcontractors are receiving compensation as set forth in the MBE participation schedule by ensuring that the contractor submits monthly reports, listing any unpaid invoices over 30 days old received from any certified MBE subcontractor, the amount of each invoice, and the reason payment has not been made.

3. The MBE Liaison and/or the Public School Construction Program will conduct reviews as deemed necessary to confirm compliance with the minority business enterprise participation requirements.

4. The MBE Liaison will maintain appropriate records, and shall assist the Public School Construction Program in on-site or post-audit reviews upon request.

5. Auditors from the Public School Construction Program will have access to and the ability to audit MBE participation for specific projects, information retained by the LEA, and/or submitted to the IAC in reports/forms filed by the LEA as referenced above.

9.0 MINORITY BUSINESS ENTERPRISE LIAISON

1. The Superintendent shall designate an individual to be identified as the MBE Liaison for the school system.

2. The MBE Liaison will be the contact person who will work with the Public School Construction Program and the Governor’s Office of Minority Affairs to implement the Minority Business Enterprise Program for the school system and the State of Maryland.

3. The Superintendent will immediately notify the Public School Construction Program if there is a change in the MBE Liaison for the school system.
CERTIFIED MINORITY BUSINESS ENTERPRISE UTILIZATION AND FAIR SOLICITATION AFFIDAVIT

NOTE: You must include this document with your bid or offer. If you do not submit the form with your bid or offer, the procurement officer shall deem your bid non-responsive or your offer not reasonably susceptible of being selected for award.

Part I.

I acknowledge the:
- Overall certified MBE subcontract participation goal of ___%. and
- The subgoals, if applicable, of:
  - ____% for certified African American-owned businesses and
  - ____% for certified Asian American-owned businesses and
  - ____% for certified women-owned businesses.

I have made a good-faith effort to achieve this goal. If awarded the contract, I will continue to attempt to increase MBE participation during the project.

Part II.

Check ONE Box

NOTE: FAILURE TO CHECK ONE OF BOXES 1, 2, or 3 BELOW WILL RENDER A BID NON-RESPONSIVE OR AN OFFER NOT REASONABLY SUSCEPTIBLE OF BEING SELECTED FOR AWARD

NOTE: INCONSISTENCY BETWEEN THE ASSERTIONS ON THIS FORM AND THE INFORMATION PROVIDED ON THE MBE PARTICIPATION SCHEDULE (ATTACHMENT B) MAY RENDER A BID NON-RESPONSIVE OR AN OFFER NOT REASONABLY SUSCEPTIBLE OF BEING SELECTED FOR AWARD

1 ☐ I have met the overall MBE goal and MBE subgoals for this project. I submit with this Affidavit [Attachment A] the MBE Participation Schedule [Attachment B], which details how I will reach that goal.

or

2 ☐ After having made a good-faith effort to achieve the overall MBE goal and MBE subgoals for this project, I can achieve partial success only. I submit with this Affidavit [Attachment A] the MBE Participation Schedule [Attachment B], which details the MBE participation I have achieved.

I request a partial waiver as follows:
- Waiver of overall MBE subcontract participation goal: ____%
- Waiver of MBE subcontract participation subgoals, if applicable:
  - ____% for certified African American-owned businesses and
  - ____% for certified Asian American-owned businesses and
  - ____% for certified women-owned businesses.

Within 10 days of being informed that I am the apparent awardee, I will submit MBE Waiver Documentation [Attachment F] (with supporting documentation).
or

3 □ After having made a good faith effort to achieve the overall MBE goal and MBE subgoals for this project, I am unable to achieve any portion of the goal or subgoals. I submit with this Affidavit [Attachment A] the MBE Participation Schedule [Attachment B].

   I request a full waiver.

   Within 10 days of being informed that I am the apparent awardee, I will submit MBE Waiver Documentation [Attachment F] (with supporting documentation).

**Part III.**

I understand that if I am the apparent awardee or conditional awardee, I must submit within 10 working days after receiving notice of the potential award or within 10 days after the date of conditional award – whichever is earlier – the:

- Outreach Efforts Compliance Statement (Attachment C)
- Subcontractor Project Participation Statement (Attachment D)
- Minority Subcontractors Unavailability Certificate (Attachment E) (if applicable)
- Any other documentation the Procurement Officer requires to ascertain my responsibility in connection with the MBE participation goal and subgoals

I acknowledge that if I fail to timely return complete documents, the Procurement Officer may determine that I am not responsible and therefore not eligible for contract award. If the contract has been awarded, the award is voidable.

I acknowledge that the MBE subcontractors/suppliers listed in the MBE Participation Schedule and any additional MBE subcontractor/suppliers identified in the Subcontractor Project Participation Statement will be used to accomplish the percentage of MBE participation that I intend to achieve.

In the solicitation of subcontract quotations or offers, MBE subcontractors were provided the same information and amount of time to respond as were non-MBE subcontractors.

The solicitation process was conducted in such a manner so as to not place MBE subcontractors at a competitive disadvantage to non-MBE subcontractors.

I solemnly affirm under the penalties of perjury that this Affidavit is true to the best of my knowledge, information, and belief.
This document must be included with the bid or offer. If the bidder or offeror fails to submit this form with the bid or offer as required, the procurement officer shall deem the bid non-responsive or shall determine that the offer is not reasonably susceptible of being selected for award.

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<th>2. Prime Contractor’s Address and Telephone Number</th>
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<td>9. Total MBE Percent of Entire Contract</td>
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<td>11. Reviewed and Accepted by Board of Education MBE Liaison</td>
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| Total MBE Participation:   | %  $               |
| Total African-American MBE Participation: | %  $               |
| Total Asian-American MBE Participation: | %  $               |
| Total Woman-Owned MBE Participation: | %  $               |
| Total Other Participation: | %  $               |

June 2008
**ATTACHMENT B**  
**MBE PARTICIPATION SCHEDULE**

**REvised**

This document must be included with the bid or offer. If the bidder or offeror fails to submit this form with the bid or offer as required, the procurement officer shall deem the bid non-responsive or shall determine that the offer is not reasonably susceptible of being selected for award.

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<tr>
<th>1. Prime Contractor’s Name</th>
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</thead>
<tbody>
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<td>2. Prime Contractor’s Address/Telephone Number</td>
<td>100 Main St, Anytown, Anystate (111)-222-3333</td>
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</tr>
<tr>
<td>4. Project/School Location</td>
<td>200 School Drive, Anytown, Anystate</td>
</tr>
<tr>
<td>5. LEA Name</td>
<td>Washington County Public Schools</td>
</tr>
<tr>
<td>PSCP #</td>
<td>XX.XX</td>
</tr>
<tr>
<td>6. Base Bid Amount</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>Alternates</td>
<td>Total $1,000,000</td>
</tr>
</tbody>
</table>

| 7a. Minority Firm Name | ABCD, Inc. |
| Minority Firm Address | Prime Contractor, see above |
| MDOT Firm Certification # | Telephone Number (111)-222-3333 |

- [ ] African American  
- [ ] Asian American  
- [ ] Native American  
- [x] Women  
- [ ] Hispanic  
- [ ] Disabled

<table>
<thead>
<tr>
<th>Subcontractor Firm (Select One)</th>
<th>Allowable Percentage</th>
<th>Percentage of Total Contract</th>
<th>Subcontractor Dollar Amount</th>
<th>Participation Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDOT Certified Firm</td>
<td>100%</td>
<td>7%</td>
<td>$70,000</td>
<td>$70,000</td>
</tr>
<tr>
<td>MDOT Certified Prime Contractor</td>
<td>50% of established goal OR 100% of one subgroup contract subgoal</td>
<td>7%</td>
<td>$70,000</td>
<td>$70,000</td>
</tr>
<tr>
<td>MDOT Certified Supplier, Wholesaler and Regular Dealer</td>
<td>60%</td>
<td>4%</td>
<td>$66,667</td>
<td>$40,000</td>
</tr>
</tbody>
</table>

| 7b. Minority Firm Name | MBE 1 |
| Minority Firm Address | 100 Elm St, Anytown, Anystate |
| MDOT Firm Certification # | Telephone Number (111)-222-4444 |

- [x] African American  

<table>
<thead>
<tr>
<th>Subcontractor Firm (Select One)</th>
<th>Allowable Percentage</th>
<th>Percentage of Total Contract</th>
<th>Subcontractor Dollar Amount</th>
<th>Participation Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDOT Certified Firm</td>
<td>100%</td>
<td>7%</td>
<td>$70,000</td>
<td>$70,000</td>
</tr>
<tr>
<td>MDOT Certified Prime Contractor</td>
<td>50% of established goal OR 100% of one subgroup contract subgoal</td>
<td>7%</td>
<td>$70,000</td>
<td>$70,000</td>
</tr>
</tbody>
</table>

| 7c. Minority Firm Name | MBE 2 |
| Minority Firm Address | 100 Maple St, Anytown, Anystate |
| MDOT Firm Certification # | Telephone Number (111)-222-5555 |

- [x] African American  

<table>
<thead>
<tr>
<th>Subcontractor Firm (Select One)</th>
<th>Allowable Percentage</th>
<th>Percentage of Total Contract</th>
<th>Subcontractor Dollar Amount</th>
<th>Participation Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDOT Certified Firm</td>
<td>100%</td>
<td>7%</td>
<td>$70,000</td>
<td>$70,000</td>
</tr>
<tr>
<td>MDOT Certified Prime Contractor</td>
<td>50% of established goal OR 100% of one subgroup contract subgoal</td>
<td>7%</td>
<td>$70,000</td>
<td>$70,000</td>
</tr>
</tbody>
</table>

8. MBE Total Amount: $220,000  
9. Total MBE Percentage of Entire Contract: 22%

10. Form Prepared by:  
Name: John Smith  
Title: President, ABCD, Inc.  
Date: ____________

11. Reviewed and accepted by LEA MBE Liaison  
Name: ____________  
Title: ____________  
Date: ____________

- Total MBE Participation: $220,000  
- Total African American Participation: $70,000  
- Total Asian American Participation: $40,000  
- Total Other Participation: $110,000

October 1, 2017
Attachment C

OUTREACH EFFORTS COMPLIANCE STATEMENT

In conjunction with the bid or offer submitted in response to _______________ County Public Schools for the _________________ project, PSC # _______________, I state the following:

(name)

1) Bidder/Offeror identified opportunities to subcontract in these specific work categories:

2) Attached to this form are copies of written solicitations (with bidding instructions) used to solicit certified MBEs for these subcontract opportunities.

3) Bidder/Offeror made the following attempts to contact personally the solicited MBEs:

4) □ Bidder/Offeror assisted MBEs to fulfill or to seek waiver of bonding Requirements (Described Efforts)
   □ This project does not involve bonding requirements.

5) □ Bidder/Offeror did/did not attend the pre-bid conference
   □ No pre-bid conference was held.

_________________________________  By: ________________________
Bidder/Offeror Name

_________________________________   _________________________
Address       Name,Title

_________________________________   __________________________
Date
MINORITY BUSINESS ENTERPRISES SUBCONTRACTOR PROJECT PARTICIPATION STATEMENT

PROJECT/ SCHOOL NAME: __________________________________________________________

PROJECT/ SCHOOL LOCATION: ____________________________________________________

LEA: __________________________________________________________

NAME OF PRIME CONTRACTOR: __________________________________________________

NAME OF MBE SUBCONTRACTOR: ________________________________________________

MDOT Certification Number

1. Work/Services to be performed by MBE Subcontractor: ___________________________

2. Subcontract Amount: $ _______________________________________________________

3. Bonds - Amount and type required of Subcontractor if any: _________________________

4. MBE Anticipated or Actual Commencement Date: ________________ Completion Date: __________

5. This MBE subcontract represents the following percentage of the total contract cost: ______

6. This is an African American Firm: Yes ______ No ______

7. This is a Women Owned Business Firm: Yes ______ No ______

8. This is an Asian, American Indian, Hispanic or Disabled Firm: Yes ______ No ______
   (Circle One)

The undersigned subcontractor and prime contractor will enter into a contract for the work/service indicated above upon the prime contractor’s execution of a contract for the above referenced project with the Board of Education. The undersigned subcontractor is a MDOT certified Minority Business Enterprise. The terms and conditions stated above are consistent with our agreements.

Signature of Subcontractor: ______________________________________________________

Date: __________________________

The term and conditions stated above are consistent with our agreements.

Signature of Prime Contractor: ___________________________________________________

Date: __________________________
Attachment E

MINORITY SUBCONTRACTOR UNAVAILABILITY CERTIFICATE

1. It is hereby certified that the firm of

located at

(Number) (Street)

(City) (State) (Zip)

(Name of Minority firm)

cated a

(State) (Zip)

was offered an opportunity to bid on the __________________________ school project

in __________________ County by ___________________________

(Name of Prime Contractor’s Firm)

************************************************************************************

2. The __________________________ (Minority Firm), is either unavailable for the work/service or unable to prepare a bid for this project for the following reason(s):

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Signature of Minority Firm’s MBE Representative Title Date

---

MDOT Certification # Telephone #

---

3. To be completed by the prime contractor if Section 2 of this form is not completed by the minority firm.

To the best of my knowledge and belief, said Certified Minority Business Enterprise is either unavailable for the work/service for this project, is unable to prepare a bid, or did not respond to a request for a price proposal and has not completed the above portion of this submittal.

Signature of Prime Contractor Title Date
Attachment F

MBE WAIVER DOCUMENTATION

Project Name: ___________________________  PSC No. _______________________

Base Contract Amount $ _________________________

Plus Accepted Alternates __________________________

Equals Total Contract Amount $ _________________________

I have previously requested that a waiver be granted to the overall MBE goal for this project of _____ percent, with a minimum of ____ percent from certified African American-owned businesses, a minimum of ____ percent from certified women-owned businesses, and the balance from all certified minority business enterprises, if applicable. This would include the total dollar value of all materials, supplies, equipment, and services, including construction services directly or indirectly, from Minority Business Enterprises (MBE) which are currently certified by the Maryland Department of Transportation (MDOT).

I ___________________________ , hereby certify that my position is ___________________________.

(Name of Company Representative)

_______________________________ , and I am the duly authorized representative of ___________________________.

(Position Title)

(Company Name)

I further certify that I have submitted a Schedule for Participation of Certified Minority Business Enterprises which reflects the percentage and dollar value of certified Minority Business Enterprise participation which my company expects to achieve for this contract. Therefore, the request for the waiver is as follows:

Summary MBE Participation Schedule from Attachment B

<table>
<thead>
<tr>
<th>Minority Group</th>
<th>MBE GOAL</th>
<th>Actual MBE Dollar Participation</th>
<th>Request For Waiver</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent of Total Contract</td>
<td>Dollar Value of Total Contract*</td>
<td>Dollar Value</td>
</tr>
<tr>
<td>a. Sub Goal African American</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Sub Goal Women</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>c. Sub Goal Asian American</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>d. Other * in Sub Goal group a/b above</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTALS</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* with accepted/rejected alternates
To support this request for a waiver, I include the following information as attachments which I certify to be true to the best of my knowledge.

1. A detailed statement of the efforts made by the contractor to identify and select portions of the work proposed to be performed by subcontractors in order to increase the likelihood of achieving the stated goal;
2. A detailed statement of the efforts made by the contractor prior to and up to 10 days before the bid opening to solicit minority business enterprises through written notices that describe the categories of work for which subcontracting is being solicited, the type of work to be performed, and specific instructions on how to submit a bid;
3. A detailed statement of the contractor’s efforts to make personal contact with MBE firms identified for Item 2. above;
4. A record of the name, address, telephone number, and dates contacted for each MBE identified under items 2. and 3. above;
5. A description of the information provided to MBE’s regarding the plans, specifications and the anticipated time schedule for portions of the work to be performed;
6. Information on activities to assist minority business enterprises to fulfill bonding requirements, or to obtain a waiver of these requirements;
7. Information on activities to publicize contracting opportunities to minority business enterprises, attendance at pre-bid meetings, or other meetings scheduled by the MBE Liaison or designated representative;
8. As to each MBE that placed a subcontract quotation or offer which the apparent low bidder or successful offeror considers not to be acceptable, a detailed statement of reasons for this conclusion; and
9. A list of minority subcontractors found to be unavailable. This shall be accompanied by a Minority Subcontractor Unavailability Certificate signed by the minority business enterprise or from the apparent low bidder or successful offeror indicating that the minority business did not provide the written certification.

Signature ____________________________ Date ____________________________
(Company Representative Name)

Sworn and subscribed before me this ____________________________ day.
of ____________________________ in the year ____________________________ Notary Public

Reviewed and accepted by the ____________________________ County Board of Education MBE Liaison.
(County Name)

Signature ____________________________ Date ____________________________
(County Representative Name)

MBE Request For Waiver Master Form (July 2002)
<table>
<thead>
<tr>
<th>Name of MBE Sub-Contractor</th>
<th>MDOT Certification Number and Classification</th>
<th>TOTAL MBE Contract Amount</th>
<th>Amount to be Paid THIS Requisition</th>
<th>TOTAL Paid to Date</th>
<th>MBE has Received FINAL Payment?</th>
<th>If amount paid is LESS than TOTAL MBE Contract Amount, EXPLAIN VARIANCE</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

TOTAL: $ - $ - $ - $ -

MDOT Certification Number and Classification can be located at [http://mbe.state.mdot.state.md.us/directory/](http://mbe.state.mdot.state.md.us/directory/)

**MBE Classification:**
- African American = AA
- Hispanic American = H
- Native American = N
- Asian American = A
- Women = W
- African American/Women = AAW
- Hispanic American/Women = HW
- Native American/Women = NW
- Asian American/Women = AW

I certify that the figures and information presented above represent accurate and true statements, that timely payments have been and will be made to suppliers and subcontractors on this project as requisitioned payments are received, and in accordance with our contracts.

Name of Contractor Firm

Authorized Contractor Signature/Date

Contractor Federal Tax ID #

Contractor MBE Classification # (if applicable)

Name of LEA MBE Liaison (Printed)

Signature of LEA MBE Liaison/Date

Revised March 2013
Instructions for Completion of IAC/PSCP Form 306.4 Page 3

THIS FORM TO BE COMPLETED BY PRIME CONTRACTOR ONLY

1. **LEA** – Enter full name of LEA.
2. **Facility Name** – Enter full name of school/facility.
3. **Scope of Work** – Enter type of work being performed (i.e. New, Renovation, Roof, HVAC, ASP – Flooring, QZAB – Media Center, etc.).
4. **Date** – Date of Requisition.
5. **PSC No** – Enter full PSC Number as assigned by PSCP.
6. **REQ No** – Enter the number of the corresponding Requisition for Payment.
7. **Name of MBE Sub-Contractor** – Enter full name of MBE Sub-Contractor.
8. **MDOT Certification Number & Classification** – Enter the 5 digit MDOT Certification number and corresponding MDOT Classification for each MBE Sub-Contractor. MDOT Classifications and the MDOT website are listed at the bottom of this form.
9. **TOTAL MBE Contract Amount** – Enter ORIGINAL Total MBE Contract Amount as stated on MBE Attachments B and D. This amount should NOT be altered with change order amounts, changes to scope of work, etc. which may affect contract amount.
10. **Amount to be Paid This Requisition** – Enter the amount to be paid to the MBE Sub-Contractor for work applicable to this requisition.
11. **TOTAL Paid to Date** – Enter the TOTAL amount paid to date to the MBE Sub-Contractor – this amount should NOT include the amount being paid on this requisition, only the total of prior payments.
12. **MBE has Received FINAL Payment** – Enter “YES” if the MBE Sub-Contractor has been paid in full. Enter “NO” if the MBE Sub-Contractor has NOT been paid in full.
13. **If amount paid is LESS than TOTAL MBE Contract Amount, EXPLAIN VARIANCE** – Enter a brief reason for the MBE Sub-Contractor NOT being paid equal to or greater than the ORIGINAL Total MBE Contract Amount as stated on this form and MBE Attachments B & D. Additional documentation may be required to be submitted for variance explanations.
14. **Name of Contractor Firm** – Enter full name of Prime Contractor.
15. **Authorized Contractor Signature/Date** – The authorized individual employed by the Prime Contractor who filled this form out should date and sign here.
16. **Contractor Federal Tax ID #** – Enter the Federal Tax ID Number of the Prime Contractor.
17. **Contractor MBE Classification #** – Enter the MDOT MBE Classification Number if the Prime Contractor is a MDOT certified MBE Company.
18. **Name of LEA MBE Liaison** – PRINT the name of the LEA MBE Liaison (or other LEA authorized employee) responsible for VERIFYING ALL INFORMATION filled out by the Prime Contractor on this form.
19. **Signature of LEA MBE Liaison/Date** – Signature of the person VERIFYING ALL INFORMATION filled out by the Prime Contractor on this form (signature of person stated in Step #18.)
Public School Construction Program
MBE Document Submission Requirements

Procedures for Request for Payment/Reimbursement for ALL PSCP Funded Programs

1. Use IAC/PSCP Form 306.4 Page 3.

2. The Prime Contractor must complete this Form and submit it with each Monthly Requisition/Invoice for Payment for each project in which they are seeking payment from either the Local Education Agency (LEA) or State of Maryland Public School Construction Program. If no MBE Sub-Contractors were utilized on a project (i.e., no MBE goals were set for the project and/or a full waiver was granted), this Form must still be submitted by the Prime Contractor.
   a. IAC/PSCP Form 306.4 Page 3 must be PROJECT specific – If one bid/contract covers multiple projects (either different schools or scopes of work), this Form must be calculated and submitted by the Prime Contractor on an individual project basis.
   b. IAC/PSCP Form 306.4 Page 3 must be Prime Contractor/Trade Package specific – If the IAC recognized multiple Prime Contractors and/or Trade Packages, this Form must be completed by each Prime/Trade Contractor recognized by the IAC and submitted.

3. All ORIGINAL MBE Sub-Contractors must be listed on this Form with their full company name, MDOT Certification Number, MDOT Classification and ORIGINAL Contract Amount as stated on MBE Attachments B & D. (ONLY MDOT Certified companies should be listed on this Form.)

4. Any additional MBE Sub-Contractors utilized on a project must be listed on this Form with their full company name, MDOT Certification Number, MDOT Classification and total contract amount. (ONLY MDOT Certified companies should be listed on this Form.)

5. The Prime Contractor should fill in the amount they intend to pay each MBE Sub-Contractor for the current requisition as well as all money paid to date. By signing this Form, the Prime Contractor is certifying their intent to pay the “Amount to be Paid This Requisition”. They are also certifying the distribution of money listed under the “Total Paid to Date” column.

6. The LEA MBE Liaison shall verify each month with the MBE Sub-Contractors that all money listed under the “Total Paid to Date” column has been received from the Prime Contractor. By signing this Form, the LEA MBE Liaison is certifying all MBE Sub-Contractors have been paid all money due to them by the Prime Contractor.

7. The MBE Liaison should also be comparing the current Form with the prior month(s) to make sure information is not being duplicated and/or repeated. Payments to MBE Sub-Contractors should be progressive and recorded.

8. If for any reason, an amount the Prime Contractor listed on the Form as intending to pay the MBE Sub-Contractor was not made, or if the payment amount changed, the LEA MBE Liaison should be inquiring about the change in payment or non-payment to the MBE Sub-Contractor.

9. NO REQUESTS FOR PAYMENT/REIMBURSEMENT SHOULD BE SUBMITTED TO PSCP UNTIL THE PROCEDURES ABOVE HAVE BEEN COMPLETED.

As of March 2013
Public School Construction Program
MBE Document Submission Requirements

Procedures for Close-Out Summary Submission

1. Use IAC/PSCP Form 306.4 Page 3.
2. The Prime Contractor must complete this Form and submit it with the FINAL Requisition to the LEA or upon LEA request. If no MBE Sub-Contractors were utilized on a project (i.e. no MBE goals were set for the project and/or a full waiver was granted), this Form must still be submitted by the Prime Contractor.
   a. IAC/PSCP Form 306.4 Page 3 must be PROJECT specific – If one bid/contract covers multiple projects (either different schools or scopes of work), this Form must be calculated and submitted by the Prime Contractor on an individual project basis.
   b. IAC/PSCP Form 306.4 Page 3 must be Prime Contractor/Trade Package specific – If the IAC recognized multiple Prime Contractors and/or Trade Packages, this Form must be completed by each Prime/Trade Contractor recognized by the IAC and submitted.
3. All ORIGINAL MBE Sub-Contractors must be listed on this Form with their full company name, MDOT Certification Number, MDOT Classification and ORIGINAL Contract Amount as stated on MBE Attachments B & D. (ONLY MDOT Certified companies should be listed on this Form.)
4. Any additional MBE Sub-Contractors utilized on a project must be listed on this Form with their full company name, MDOT Certification Number, MDOT Classification and total contract amount. (ONLY MDOT Certified companies should be listed on this Form.)
5. The Final Form 306.4 should reflect ALL money paid to each MBE Sub-Contractor. There is a column on the Form to answer “Yes” or “No” for the MBE Sub-Contractor being paid in full. There is also a column on the Form for the Prime Contractor to state a brief reason if a MBE Sub-Contractor was paid less than the original contract amount stated on MBE Attachments B & D. By signing this Form, the Prime Contractor is certifying the MBE Sub-Contractors have been paid in full for this project.
6. The LEA MBE Liaison shall verify with the MBE Sub-Contractors that all money listed under the “Total Paid to Date” column has been received and no additional money is owed to them by the Prime Contractor. By signing this Form, the LEA MBE Liaison is certifying all MBE Sub-Contractors have been paid in full by the Prime Contractor for this project.
7. NO CLOSE-OUT SUMMARY SHOULD BE SUBMITTED TO PSCP UNTIL THE ABOVE PROCEDURES HAVE BEEN COMPLETED.

Additional Submission Requirements Applicable to All State Funded Projects

1. If an ORIGINAL MBE Sub-Contractor listed on MBE Attachments B and D is not paid in full and/or not utilized on a project, the Prime Contractor shall submit in writing an explanation for either the reduction in contract amount/payment or why the MBE Sub-Contractor was not utilized.
2. It is the responsibility of the LEA MBE Liaison to contact the MBE Sub-Contractor to verify the explanation provided by the Prime Contractor. Any correspondence between the LEA MBE Liaison and both the Prime Contractor and MBE Sub-Contractors should be kept by the LEA and be made available to PSCP upon request or audit.
3. If an MBE Sub-Contractor originally listed on MBE Attachment B & D becomes unavailable and/or is not going to be utilized, this information should be communicated to the PSCP MBE Program Manager and the PSCP Finance Department by the LEA immediately.
4. If additional MBE Sub-Contractors are hired after the MBE Attachments B & D have been submitted to PSCP, the LEA MBE Liaison must submit this information to the PSCP MBE Program Manager and the PSCP Finance Department immediately.

As of March 2013
# CLOSE-OUT COST SUMMARY

<table>
<thead>
<tr>
<th>LEA: __________________________</th>
<th>DATE: __________</th>
</tr>
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<tr>
<td>SCHOOL NAME: ____________________</td>
<td>PSC #: __________</td>
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<table>
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<th>Public School Construction</th>
<th>Local and Other</th>
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<tbody>
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<td>Allocation:</td>
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<td>Cash Disbursements:</td>
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<td>$0</td>
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<td>$0</td>
<td></td>
<td>$0</td>
</tr>
</tbody>
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I hereby certify that the data shown hereon is correct and request this project be closed.

______________________________
Signature of LEA Representative

---

**FOR STATE USE ONLY**

**ADJUSTMENTS:**

<table>
<thead>
<tr>
<th>Allocation: __________________________</th>
<th>Initials</th>
</tr>
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<tbody>
<tr>
<td>Cash: __________________________</td>
<td>Date</td>
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</tbody>
</table>

**AUDIT COMMENTS:**

<table>
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<th>Date</th>
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SECTION 00 52 13

AIA DOCUMENT A101 – 2017
STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR,
AS AMENDED BY WASHINGTON COUNTY BOARD OF EDUCATION
AGREEMENT made as of the Seventh day of May in the year Two Thousand Twenty, (May 7, 2020). (In words, indicate day, month and year.)

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

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

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

Water Line Replacement at Williamsport High School
5 S. Clifton Drive
Williamsport, MD 21795

Bid No. 2020-32
The Architect:
(Name, legal status, address and other information)

Kibart, Inc.
901 Dulaney Valley Road, Suite 301
Towson, MD 21204

The Owner and Contractor agree as follows.
TABLE OF ARTICLES

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2  THE WORK OF THIS CONTRACT
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4  CONTRACT SUM
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6  DISPUTE RESOLUTION
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8  MISCELLANEOUS PROVISIONS
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ARTICLE 1  THE CONTRACT DOCUMENTS
The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2  THE WORK OF THIS CONTRACT
The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3  DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
§ 3.1 The date of commencement of the Work shall be:
(Insert one of the following boxes.)

[ ] The date of this Agreement.

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

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

« 6/15/2020 »

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

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

§ 3.3 Substantial Completion
§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:
(Insert one of the following boxes and complete the necessary information.)

[ ] Not later than « ( « ) » calendar days from the date of commencement of the Work.
§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

<table>
<thead>
<tr>
<th>Portion of Work Description</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor’s performance of the Contract. The Contract Sum shall be « » ($ « »), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
<th>Conditions for Acceptance</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Item</th>
<th>Units and Limitations</th>
<th>Price per Unit ($0.00)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

«Liquidation damages in the amount of One Thousand Dollars ($1,000) per calendar day to apply and shall be assessed against the contractor for delay to Substantial Completion and Final Completion. »

§ 4.6 Other: (Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

« »
ARTICLE 5 PAYMENTS
§ 5.1 Progress Payments
§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

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

« »

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the «1st » day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the « 15th » day of the «following» month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than «forty-five » («45») days after the Architect receives the Application for Payment.

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

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor’s Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:
.1 That portion of the Contract Sum properly allocable to completed Work;
.2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
.3 That portion of Construction Change Directives that the Architect determines, in the Architect’s professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:
.1 The aggregate of any amounts previously paid by the Owner;
.2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017 General Conditions of the Contract for Construction as modified by Washington County Public Schools.;
.3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
.4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017 General Conditions of the Contract for Construction as modified by Washington County Public Schools; and
.5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage
§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:
(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

«Five Percent (5%) »
§ 5.1.7.1 The following items are not subject to retainage:
(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

« »

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:
(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)

« »

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:
(Insert any other conditions for release of retainage upon Substantial Completion.)

« »

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017 General Conditions of the Contract for Construction as modified by Washington County Public Schools..

§ 5.1.9 Except with the Owner’s prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 Final Payment
§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when
1. the Contractor has fully performed the Contract except for the Contractor’s responsibility to correct Work as provided in Article 12 of AIA Document A201–2017 General Conditions of the Contract for Construction as modified by Washington County Public Schools., and to satisfy other requirements, if any, which extend beyond final payment; and
2. a final Certificate for Payment has been issued by the Architect.

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

« »

§ 5.3 Interest – Paragraph deleted in its entirety.

ARTICLE 6 DISPUTE RESOLUTION
§ 6.1 Initial Decision Maker
The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017 General Conditions of the Contract for Construction as modified by Washington County Public Schools, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.

§ 6.2 Binding Dispute Resolution
For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017 General Conditions of the Contract for Construction as modified by Washington County Public Schools, the method of binding dispute resolution shall be as follows:
(Select the appropriate box.)

[ ] Arbitration pursuant to Section 15.4 of AIA Document A201–2017 General Conditions of the Contract for Construction as modified by Washington County Public Schools.
Litigation in a court of competent jurisdiction

Other (Specify)

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

ARTICLE 7  TERMINATION OR SUSPENSION
§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017 General Conditions of the Contract for Construction as modified by Washington County Public Schools.

§ 7.1.1 Deleted paragraph

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017 General Conditions of the Contract for Construction as modified by Washington County Public Schools.

ARTICLE 8  MISCELLANEOUS PROVISIONS
§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as modified by Washington County Public Schools and included in the Contract Documents.

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

Robert H. Rollins III, Director – Facilities Planning & Development
Washington County Public Schools
10435 Downsville Pike
Hagerstown, MD 21740

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

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

§ 8.5 Insurance and Bonds
§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Article 11 of AIA Document A201 General Conditions of the Contract for Construction, as modified by Washington County Public Schools, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in Article 11 of AIA Document A201 General Conditions of the Contract for Construction as modified by Washington County Public Schools, and elsewhere in the Contract Documents.

§ 8.5.3 Certificate of Insurance: Prior to proceeding with the work, the contractor agrees to provide a Certificate of Insurance with the application coverage as listed in the Specifications:

List Certificate Holder and Additional Insured as:
Board of Education of Washington County
List the Project as:

§ 8.6 Paragraph Deleted.

§ 8.7 Other provisions:

Liquidated Damages

This contract requires the contractor to make good faith efforts to comply with the Minority Business Enterprise ("MBE") Program and contract provisions. WCPS and the Contractor acknowledge and agree that WCPS will incur damages, including but not limited to loss of goodwill, detrimental impact on economic development, and diversion of internal staff resources, if the Contractor does not make good faith efforts to comply with the requirements of the MBE Program and MBE contract provisions. The parties further acknowledge and agree that the damages WCPS might reasonably be anticipated to accrue as a result of such lack of compliance are difficult to ascertain with precision.

Therefore, upon a determination by WCPS that the Contractor failed to make good faith efforts to comply with one or more of the specified MBE Program requirements or contract provisions, the Contractor agrees to pay liquidated damages to WCPS at the rates set forth below. The Contractor expressly agrees that WCPS may withhold payment on any invoices as a set-off against liquidated damages owed. The Contractor further agrees that for each specified violation, the agreed upon liquidated damages are reasonably proximate to the loss WCPS is anticipated to incur as a result of such violation.

a. Failure to submit each monthly payment report in full compliance with COMAR 21.11.03.13B (3): $52.00 per day until the monthly report is submitted as required.

b. Failure to include in its agreements with MBE subcontractors a provision requiring submission of payment reports in full compliance with COMAR 21.11.03.13B (4): $52.00 per MBE subcontractor.

c. Failure to comply with COMAR 21.11.03.12 in terminating, canceling, or changing the scope of work/value of a contract with an MBE subcontractor and/or amendment of the MBE participation schedule: the difference between the dollar value of the MBE participation commitment on the MBE participation schedule for that specific MBE firm and the dollar value of the work performed by that MBE firm for the contract.

d. Failure to meet the Contractor’s total MBE participation goal and subgoal commitments: the difference between the dollar value of the total MBE participation commitment on the MBE participation schedule and the MBE participation actually achieved.

Notwithstanding the use of liquidated damages, WCPS reserves the right to terminate the contract and exercise all other rights and remedies provided in the contract or by law. »

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

.1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor

.2 AIA Document A201™–2017, General Conditions of the Contract for Construction as modified by Washington County Public Schools.

.3 Drawings

.4 Specifications
.5 Addenda, if any:

<table>
<thead>
<tr>
<th>Number</th>
<th>Date</th>
<th>Pages</th>
</tr>
</thead>
</table>

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

This Agreement entered into as of the day and year first written above and is executed in at least three original copies, of which one is to be delivered to the Contractor, one to the Architect for use in the administration of the Contract, and the remainder to the Owner.

OWNER (Signature)

« Dr. Boyd J. Michael, III » « Superintendent »
(Printed name and title)

CONTRACTOR (Signature)

(Printed name and title)
SECTION 00 52 14

WCPS CONTRACT AFFIDAVIT
CONTRACT AFFIDAVIT

MANDATORY CONTRACT ADDENDUM

COMAR 21.07.01.25

Bidder shall complete and submit this contract affidavit to the Legal Department of Washington County Public Schools to attach with the contract form.

A. AUTHORITY

I HEREBY AFFIRM THAT:

I, (print name)__________________________________________ possess the legal authority to make this Affidavit.

B. CERTIFICATION OF REGISTRATION OR QUALIFICATION WITH THE STATE DEPARTMENT OF ASSESSMENTS AND TAXATION

I FURTHER AFFIRM THAT:

The business named above is a (check applicable items):

Corporation: ____domestic ____or foreign

Limited Liability Company: ____domestic ____or foreign

Partnership: ____domestic ____or foreign

Statutory Trust: ____domestic _____or foreign

Sole Proprietorship: ____and is registered or qualified as required under Maryland Law.

I further affirm that the above business is in good standing both in Maryland and (IF APPLICABLE) in the jurisdiction where it is presently organized, and has filed all of its annual reports, together with filing fees, with the Maryland State Department of Assessments and Taxation. The name and address of its resident agent (IF APPLICABLE) filed with State Department of Assessments and Taxation is:

Name and Department ID Number ____________________________________________

Address: ________________________________________________________________

and that if it does business under a trade name, it has filed a certificate with the State Department of Assessments and Taxation that correctly identifies that true name and address of the principal or owner as:
Name and Department ID Number: _______________________________________________________
Address: __________________________________________________________________________

C. FINANCIAL DISCLOSURE AFFIRMATION

I FURTHER AFFIRM THAT:

I am aware of, and the above business will comply with, the provisions of the State Finance and Procurement Article §13-221, Annotated Code of Maryland, which require that every business that enters into contracts, leases, or other agreements with the State of Maryland or its agencies during a calendar year under which the business is to receive in the aggregate $100,000 or more shall, within 30 days of the time when the aggregate value of the contracts, leases, or other agreements reaches $100,000, file with the Secretary of State of Maryland certain specified information to include disclosure of beneficial ownership of the business.

D. POLITICAL CONTRIBUTION DISCLOSURE AFFIRMATION

I FURTHER AFFIRM THAT:

I am aware of, and the above business will comply with, Election Law Article §§14-101-14-108, Annotated Code of Maryland, which requires that every person that enters into contracts, leases, or other agreements with the State of Maryland, including its agencies or a political subdivision of the State, during a calendar year in which the person receives in the aggregate $100,000 or more shall file with the State Board of Elections a statement disclosing contributions in excess of $500 made during the reporting period to a candidate for elective office in any primary or general election.

E. DRUG AND ALCOHOL FREE WORKPLACE

(Applicable to all contracts unless the contract is for a law enforcement agency and the agency head or the agency head’s designee has determined that application of COMAR 21.11.08 and this certification would be inappropriate in connection with the law enforcement agency’s undercover operations.)

I CERTIFY THAT:

(1) Terms defined in COMAR 21.11.08 shall have the same meanings when used in this certification.
(2) By submission of its bid or offer, the business, if other than an individual, certifies and agrees that, with respect to its employees to be employed under a contract resulting from this solicitation, the business shall:

(a) Maintain a workplace free of drug and alcohol abuse during the term of the contract;

(b) Publish a statement notifying its employees that the unlawful manufacture, distribution, dispensing, possession, or use of drugs, and the abuse of drugs or alcohol is prohibited in the
business’ workplace and specifying the actions that will be taken against employees for violation of the prohibitions;

(c) Prohibit its employees from working under the influence of drugs or alcohol;

(d) Not hire or assign to work on the contract anyone who the business knows, or in the exercise of due diligence should know, currently abuses drugs or alcohol and is not actively engaged in a bona fide drug or alcohol abuse assistance or rehabilitation program;

(e) Promptly inform the appropriate law enforcement agency of every drug-related crime that occurs in its workplace if the business has observed the violation or otherwise has reliable information that a violation has occurred;

(f) Establish drug and alcohol abuse awareness programs to inform its employees about:

   (i) The dangers of drug abuse and alcohol abuse in the workplace;
   (ii) The business’s policy of maintaining a drug and alcohol free workplace;
   (iii) Any available drug and alcohol counseling, rehabilitation, and employee assistance programs; and
   (iv) The penalties that may be imposed upon employees who abuse drugs and alcohol in the workplace;

(g) Provide all employees engaged in the performance of the contract with a copy of the statement required by §E(2)(b), above;

(h) Notify its employees in the statement required by §E(2)(b), above, that as a condition of continued employment on the contract, the employee shall:

   (i) Abide by the terms of the statement; and
   (ii) Notify the employer of any criminal drug or alcohol abuse conviction for an offense occurring in the workplace not later than 5 days after a conviction;

(i) Notify the procurement officer within 10 days after receiving notice under §E(2)(h)(ii), above, or otherwise receiving actual notice of a conviction;

(j) Within 30 days after receiving notice under §E(2)(h)(ii), above, or otherwise receiving actual notice of a conviction, impose either of the following sanctions or remedial measures on any employee who is convicted of a drug or alcohol abuse offense occurring in the workplace:

   (i) Take appropriate personnel action against an employee, up to and including termination; or
   (ii) Require an employee to satisfactorily participate in a bona fide drug or alcohol abuse assistance or rehabilitation program; and

(k) Make a good faith effort to maintain a drug and alcohol free workplace through implementation of §E(2)(a)-(j), above.
(3) If the business is an individual, the individual shall certify and agree as set forth in §E(4), below,
that the individual shall not engage in the unlawful manufacture, distribution, dispensing, possession,
or use of drugs or the abuse of drugs or alcohol in the performance on the contract.

(4) I acknowledge and agree that:
(a) The award of the contract is conditional upon compliance with COMAR 21.11.08 and this
certification;
(b) The violation of the provisions of COMAR 21.11.08 or this certification shall be cause to
suspend payments under, or terminate the contract for default under COMAR 21.07.01.11 or
21.07.03.15, as applicable; and
(c) The violation of the provisions of COMAR 21.11.08 or this certification in connection with
the contract may, in the exercise of the discretion of the Board of Public Works, result in
suspension and debarment of the business under COMAR 21.08.03.

F. CERTAIN AFFIRMATIONS VALID

I FURTHER AFFIRM THAT:

To the best of my knowledge, information, and belief, each of the affirmations, certifications, or
acknowledgments contained in that certain Bid/Proposal Affidavit dated____________________________,
20__, and executed by me for the purpose of obtaining the contract to which this Exhibit is attached
remains true and correct in all respects as if made as of the date of this Contract Affidavit and as if fully
set forth herein.

I DO SOLEMNLY DECLARE AND AFFIRM UNDER THE PENALTIES OF PERJURY THAT THE
CONTENTS OF THIS AFFIDAVIT ARE TRUE AND CORRECT TO THE BEST OF MY
KNOWLEDGE, INFORMATION, AND BELIEF.

Date:____________________________

By:

____________________________
(Print name of Authorized Representative and Affiant)

____________________________
(Signature of Authorized Representative and Affiant)

____________________________
(Company name)
SECTION 00 61 13.13

AIA DOCUMENT A312 – 2010 PERFORMANCE BOND
Performance Bond

CONTRACTOR:  
(Name, legal status and address)

SURETY:  
(Name, legal status and principal place of business)

OWNER:  
(Name, legal status and address)

CONSTRUCTION CONTRACT  
Date:  
Amount: $  
Description:  
(Name and location)

BOND  
Date:  
(Not earlier than Construction Contract Date)  
Amount: $  
Modifications to this Bond:  
None  
See Section 16

CONTRACTOR AS PRINCIPAL  
Company:  
(Corporate Seal)

SURETY  
Company:  
(Corporate Seal)

Signature:  
Name and Title:

(Any additional signatures appear on the last page of this Performance Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)  
AGENT or BROKER:  
OWNER’S REPRESENTATIVE:  
(Architect, Engineer or other party:)

ADDITIONS AND DELETIONS:  
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An Additions and Deletions Report that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.
§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety’s obligation under this Bond shall arise after

  .1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor’s performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner’s notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety’s receipt of the Owner’s notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner’s right, if any, subsequently to declare a Contractor Default;

  .2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

  .3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety’s obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety’s expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner’s concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

  .1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

  .2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.
§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

1. the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
2. additional legal, design professional and delay costs resulting from the Contractor’s Default, and resulting from the actions or failure to act of the Surety under Section 5; and
3. liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety’s liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions
§ 14.1 Balance of the Contract Price. The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 Contractor Default. Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.
§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL
Company: (Corporate Seal)  SURETY
Company: (Corporate Seal)

Signature: ____________________________  Signature: ____________________________
Name and Title: ______________________  Name and Title: ______________________
Address: ___________________________  Address: ___________________________
SECTION 00 61 13.16

AIA DOCUMENT A312 – 2010 PAYMENT BOND
Payment Bond

CONTRACTOR:
(Name, legal status and address)

SURETY:
(Name, legal status and principal place of business)

OWNER:
(Name, legal status and address)

CONSTRUCTION CONTRACT
Date:
Amount: $ 
Description:
(Name and location)

BOND
Date: 
(Not earlier than Construction Contract Date)
Amount: $ 
Modifications to this Bond: None See Section 18

CONTRACTOR AS PRINCIPAL
Company: 
(Corporate Seal)
Signature: Name and Title:

SURETY
Company: 
(Corporate Seal)
Signature: Name and Title:

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An Additions and Deletions Report that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

AGENT or BROKER:

OWNER’S REPRESENTATIVE:
(Architect, Engineer or other party:)

FOR INFORMATION ONLY — Name, address and telephone
§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety’s obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner’s property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety’s expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety’s obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor, have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant’s obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety’s expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety’s failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney’s fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety’s total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney’s fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner’s priority to use the funds for the completion of the work.
§ 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

1. the name of the Claimant;
2. the name of the person for whom the labor was done, or materials or equipment furnished;
3. a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
4. a brief description of the labor, materials or equipment furnished;
5. the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
6. the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
7. the total amount of previous payments received by the Claimant; and
8. the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic’s lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms “labor, materials or equipment” that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor’s subcontractors, and all other items for which a mechanic’s lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
§ 16.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL
Company: __________________________ (Corporate Seal)
Signature: __________________________
Name and Title: __________________________
Address: __________________________

SURETY
Company: __________________________ (Corporate Seal)
Signature: __________________________
Name and Title: __________________________
Address: __________________________
SECTION 00 62 76

AIA DOCUMENT G702 AND AIA G703 – 1992
APPLICATION AND CERTIFICATE FOR PAYMENT
AND CONTINUATION SHEET
Application and Certificate for Payment

TO OWNER: Washington County Public Schools
82 Commonwealth Avenue
Hagerstown, MD  21740

FROM CONTRACTOR:

PROJECT:

APPLICATION NO: 001
PERIOD TO:

PERIOD TO:

PROJECT FOR: General Construction

ARCHITECT:

CONTRACT FOR:

ARCHITECT:

CONTRACT DATE: 

PROJECT NOS: 

FIELD: 

OWNER: 

CONTRACTOR:

FIELD: 

OTHER: 

Distribution to:

TO ORDER: 

WALTERY COUNTY PUBLIC SCHOOLS
82 COMMONWEALTH AVENUE
HAGERSTOWN, MD 21740

APPLICATIONS AND CERTIFICATE FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract.

Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM .......................................................... $ 0.00

2. Net change by Change Orders ....................................................... $ 0.00

3. CONTRACT SUM TO DATE (Line 1 ± 2) ...................................... $ 0.00

4. TOTAL COMPLETED & STORED TO DATE (Column G on G703) ........ $ 0.00

5. RETAINAGE:
   a. 0 % of Completed Work (Column D + E on G703) ...................... $ 0.00
   b. 0 % of Stored Material (Column F on G703) .......................... $ 0.00

   Total Retainage (Lines 5a + 5b or Total in Column I of G703) ........ $ 0.00

6. TOTAL EARNED LESS RETAINAGE ............................................. $ 0.00

   (Line 4 Less Line 5 Total)

7. LESS PREVIOUS CERTIFICATES FOR PAYMENT .......................... $ 0.00

   (Line 6 from prior Certificate)

8. CURRENT PAYMENT DUE ............................................................ $ 0.00

9. BALANCE TO FINISH, INCLUDING RETAINAGE ............................ $ 0.00

   (Line 3 less Line 6)

CHANGE ORDER SUMMARY

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<th>DEDUCTIONS</th>
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<td>Total changes approved in previous months by Owner</td>
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<td>$ 0.00</td>
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<tr>
<td>Total approved this Month</td>
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<td>$ 0.00</td>
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NET CHANGES by Change Order $ 0.00

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: ___________________________ Date: ___________________________

State of: ___________________________

County of: ___________________________

Subscribed and sworn to before me this day of ___________________________

Notary Public: ___________________________

My Commission expires: ___________________________

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED $ 0.00

(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

ARCHITECT:

By: ___________________________ Date: ___________________________

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.
### Continuation Sheet

AIA Document G703, APPLICATION AND CERTIFICATION FOR PAYMENT, containing Contractor's signed certification is attached.

In tabulations below, amounts are stated to the nearest dollar.

Use Column I on Contracts where variable retainage for line items may apply.

<table>
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<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION OF WORK</th>
<th>SCHEDULED VALUE</th>
<th>WORK COMPLETED FROM PREVIOUS APPLICATION (D + E)</th>
<th>WORK COMPLETED THIS PERIOD</th>
<th>MATERIALS PRESENTLY STORED (NOT IN D OR E)</th>
<th>TOTAL COMPLETED AND STORED TO DATE (D+E+F)</th>
<th>% (G ÷ C)</th>
<th>BALANCE TO FINISH (C - G)</th>
<th>RETAINAGE RATE</th>
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<td>$ 0.00</td>
<td>0.00 %</td>
<td>$ 0.00</td>
<td>$ 0.00</td>
</tr>
</tbody>
</table>
Certificate of Substantial Completion

PROJECT: [Name and address]
PROJECT NUMBER: / CONSTRUCTION DATE:
CONTRACT FOR: General Construction
OWNER: 
ARCHITECT: 
CONTRACTOR: 
FIELD: 
OTHER: 

TO OWNER: [Name and address] TO CONTRACTOR: [Name and address]

PROJECT OR PORTION OF THE PROJECT DESIGNATED FOR PARTIAL OCCUPANCY OR USE SHALL INCLUDE:

The Work performed under this Contract has been reviewed and found, to the Architect’s best knowledge, information and belief, to be substantially complete. Substantial Completion is the stage in the progress of the Work when the Work or designated portion is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. The date of Substantial Completion of the Project or portion designated above is the date of issuance established by this Certificate, which is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below:

Warranty Date of Commencement

ARCHITECT BY DATE OF ISSUANCE

A list of items to be completed or corrected is attached hereto. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Unless otherwise agreed to in writing, the date of commencement of warranties for items on the attached list will be the date of issuance of the final Certificate of Payment or the date of final payment.

Cost estimate of Work that is incomplete or defective: $0.00

The Contractor will complete or correct the Work on the list of items attached hereto within Zero (0) days from the above date of Substantial Completion.

CONTRACTOR BY DATE

The Owner accepts the Work or designated portion as substantially complete and will assume full possession at (date) on (time).

OWNER BY DATE

The responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance shall be as follows:

(Note: Owner’s and Contractor’s legal and insurance counsel should determine and review insurance requirements and coverage.)
SECTION 00 72 13

AIA DOCUMENT A201 – 2017 GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, AS MODIFIED BY THE WASHINGTON COUNTY BOARD OF EDUCATION
General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)

THE OWNER:
(Name, legal status and address)
Board of Education of Washington County
10435 Downsville Pike
Hagerstown, MD 21740

THE ARCHITECT:
(Name, legal status and address)

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13 MISCELLANEOUS PROVISIONS
14 TERMINATION OR SUSPENSION OF THE CONTRACT

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

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.
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Paragraphs Deleted

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ARTICLE 1  GENERAL PROVISIONS
§ 1.1 Basic Definitions
§ 1.1.1 The Contract Documents
The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor’s bid or proposal, or portions of Addenda relating to bidding or proposal requirements. Written material incorporated within the Agreement shall have precedence, and shall supersede conflicting requirements of the other Contract Documents. However, this provision shall apply only where such written material is explicit and clearly and fully enumerated within the Agreement, all provisions of various Contract Documents shall remain in force; notwithstanding all prior negotiations, representations, or agreements, either written or oral, including the Bidding Documents.
§ 1.1.2 The Contract
The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect’s consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect’s consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect’s duties.
§ 1.1.2.1 The Contract documents shall be signed by the Owner and Contractor. If either the Owner or Contractor or both do not sign all the Contract Documents, the Architect shall identify such unsigned Documents upon request.
§ 1.1.3 The Work
The term “Work” means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor’s obligations. The Work may constitute the whole or a part of the Project.
§ 1.1.4 The Project
The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.
§ 1.1.5 The Drawings
The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.
§ 1.1.6 The Specifications
The Specifications are the portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.
§ 1.1.6.1 The Project Manual
The Project Manual is a volume assembled for the Work which may include the bidding requirements, sample forms, Conditions of the Contract and Specifications.
§ 1.1.7 Instruments of Service
Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect’s consultants under their
respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker
The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.1.9 Addenda
Addenda are written or graphic instructions issued prior to the execution of the Contract which modifies or interprets the Bidding Documents, including Drawings, Project Manual, or Specifications, by additions, deletions, clarifications, or corrections. Addenda will become part of the Contract Documents when the Construction Contract is executed.

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

§ 1.2.1.1 It is the responsibility of each Bidder, Contractor and Subcontractor to familiarize himself/herself with the provisions of the Contract Documents.

§ 1.2.1.2 Alleged conflicts or ambiguities shall be brought to the attention of the Architect, in writing, prior to Proposal submission. The Architect shall then issue a written interpretation, in the form of an Addendum, addressing the area(s) in question.

§ 1.2.1.3 Should an alleged conflict or ambiguity be discovered after Proposal submission, it is hereby agreed that the Contractor and/or Subcontractor estimated the work on the provisions and interpretations as directed by the Architect. It is understood that these provisions shall not require the performance of any work unless such work is covered within the Contract Documents or is reasonably inferable therefrom as being necessary to produce the intended results.

§ 1.2.1.4 If in the language of the Contract Documents it is alleged that certain provisions, words, phrases, and sentences may be considered unclear, equivocal, conflicting or ambiguous, it is understood and agreed, under the Contract, that they shall be interpreted by the Architect based on complementary provisions of all documents, the context of the item in question, and the intent of the Architect.

§ 1.2.1.5 Where any item of work or piece of equipment is referred to in the singular, it shall be deemed to apply to as many such items or pieces of equipment as required for a complete installation.

§ 1.2.1.6 Verbs such as include, provide, install, perform, apply, construct, supply, erect or similar words contained within the Contract Document are comprehensive actions to be performed by Contractor.

§ 1.2.1.7 The term “noted” or “as indicated” shall mean as shown, indicated or noted on the Drawings or in the Specifications or on any other Contract Document.

§ 1.2.1.8 The term “typical” means a representative example to be repeated in all similar situations. However, minor variations where necessary to adapt the typical item to a specific situation shall be included.

§ 1.2.1.9 Where reference is made to a text, standard, federal specifications, manufacturer’s directions, or to other publication, the latest publication published prior to the date of issuance of Contract Documents shall apply, unless identified in Specification by a specific publication date.

§ 1.2.1.10 Locations, sizes, and depth of existing services (i.e. manholes, utilities, etc.) are indicated are based on
records made available by the utility companies and/or the authorities having jurisdiction. Under the work of each applicable section, examine the premises and verify visible, existing conditions prior to proposal submission and the starting of work.

§ 1.2.1.11 Drawing indications of items are generally diagrammatic. Connection and anchorage of materials, interconnection of equipment and accessories necessary to any system operation not otherwise detailed or specified shall be selected under the work of each section, subject to Architect’s approval, to suit the requirements of the items.

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

§ 1.2.2 The organization of the Specifications into divisions, sections and paragraphs, and the arrangement of the Drawings shall in no way be construed to control or limit the manner in which the Contractor performs the work among his Subcontractors, nor shall they relieve the Contractor of his responsibility to perform the work, drawn and/or specified, in its entirety.”

§ 1.2.2.1 Wherever in the Specifications there appears a reference to a “Contractor” or to the “Subcontractor” or a reference to a contractor, installer or supplier of a particular trade, or for a particular type of Work, such reference, regardless of the language thereof, shall be deemed a reference to the Contractor. It shall not be construed as relieving the Contractor from the duty to perform all of the Work and other obligations provided under this Contract.

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

§ 1.2.4 Computed dimensions shall take precedence over scaled dimensions and large scale drawings shall take precedence over small scale drawings. The drawings are intended to show the general arrangement, design and extent of the Work, and are partly diagrammatic; they are not to be scaled or used in lieu of shop drawings where required.

§ 1.2.5 Should the Drawings conflict with themselves, or with the Specifications, the better quality or greater quantity of Work or materials shall be used for the purpose of bidding and, unless otherwise ordered in writing, shall be provided.

§ 1.2.6 Where typical or representative detail is shown on the drawings, this detail shall constitute the standard in workmanship and materials throughout corresponding parts of the Work and, when necessary, the Contractor shall be required to adapt such detail for use in said corresponding parts of the Work, said adaptation however, shall be subject to the consent of the Architect.

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

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

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service
§ 1.5.1 The Architect and the Architect’s consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or
distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect’s or Architect’s consultants’ reserved rights.

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

§ 1.6 Notice

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

§ 1.6.2 Written notice shall be deemed to have been duly served if delivered in person to the individual or a member of the firm or entity or to an officer of the corporation for which it was intended, or if delivered at or sent by registered or certified mail to the last business address known to the party giving notice.

§ 1.6.3 All proposals, approvals, instruction, requests, claims, demands and other notices shall be made in writing on Contractor's stationary; meeting minutes and facsimile transmission will not be considered written notice.

§ 1.7 Digital Data Use and Transmission

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

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party’s sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the Board of Education of Washington County identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term “Owner” means the Owner or the Owner’s authorized representative.

Where the word “Architect” occurs in these specifications, it shall be taken to designate either Architect or Engineer.

(Paragraph Deleted)

§ 2.1.2 The Contractor understands that the Board of

Education of Washington County is a public agency and no mechanics liens are permitted against its property.

(Paragraph Deleted)
§ 2.2 Paragraph deleted in its entirety.

§ 2.3 Information and Services Required of the Owner
§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term, “Architect” means the Architect or Architect’s authorized representative.

§ 2.3.3 If the employment of the Architect terminates, the Owner can choose to employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site to the extent reasonably required for the execution of the Work. Surveys shall be requested by the Contractor in writing within one (1) month of the date of the Contract. The Owner does not warrant or undertake responsibility for the location of utilities or the accuracy of tests concerning the soil, surface, and subsurface conditions.

§ 2.3.5 Information or services under the owner’s control shall at the Contractor’s written request be furnished by the Owner with reasonable promptness to avoid delay in orderly progress of the Work.

§ 2.3.6 The Contractor is responsible for obtaining and maintaining their own copies of Drawings and Project Manuals as necessary for execution of the Work.

§ 2.4 Owner’s Right to Stop the Work
§ 2.4.1 If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or persistently fails to carry out Work in accordance with the Contract Documents, the Owner, by written order signed personally or by an agent specifically so empowered by the Owner in writing, may order the Contractor to stop the Work, or any portion thereof, without additional charge, claim, or penalty until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity. This right shall be in addition to and not in restriction or derogation of the Owner’s rights under Section 4.3.4.

§ 2.4.2 If unforeseen conditions occur or are encountered which may substantially impair the quality of the Work unless the Work is suspended, the Owner may suspend the Work by written notice to the Contractor. In the event of such a suspension, Contractor shall be entitled to only adjustments in the Contract Time and an adjustment in the Contract Sum for costs actually incurred at the Project site by reason of such suspension. In any event where the Contractor reasonably determines that a suspension is required in such circumstances the Contractor shall promptly provide written notification to the Owner, and Architect of such determination.

§ 2.5 Owner’s Right to Carry Out the Work
If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may after such seven-day period without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for the Owner, and Architect’s and their respective consultants’ additional services and expenses made necessary by such default, neglect or failure. If payments then or thereafter due the Contract are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.
ARTICLE 3 CONTRACTOR

§ 3.1 General

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

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

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

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents. The Contractor warrants that it has made itself familiar with the project site, including soils, surface and subsurface conditions and the location of utilities, and the improvements to be constructed.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor’s review is made in the Contractor’s capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents. General information of existing conditions is available in the project manual.

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

§ 3.2.4 Paragraph deleted in its entirety.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor’s best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor’s proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.1.1 Any construction means, methods, techniques, sequences, and procedures specified within the Contract Documents are to establish minimum standards only.
§ 3.3.1.2 Nothing contained within the contract Documents shall be construed as limiting the contractor’s sole responsibility under this Article.

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

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

§ 3.3.3.1 All inspections required by law shall be obtained by the Contractor including but not limited to those required by law to be obtained by the Owner. No failure of the Owner to obtain such inspection shall constitute a waiver of Contractor’s obligation hereunder. The Contractor shall notify the Owner of any application for inspection required to be executed by the Owner.

§ 3.4 Labor and Materials
§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 If the specification has listed three (3) or more product lines, substitutions will not be considered. Where less than three (3) manufacturers or products are listed in the Specifications, or the specification lists “Approved Equal” as an acceptable product, the burden of proof of equivalency rests with the Contractor and evidence shall be submitted to the Architect and approved by the Architect with final approval to be determined by the Owner. Criteria includes by is not limited to performance, materials, craftsmanship, quality control, certification procedures or requirements, warranty, installation procedures, etc. Any proposed substitution, or proposed equal product, must be submitted to the Architect for review, 10 days prior to the bid date. After the receipt of bids and award of the Contract, the Owner and Architect are under no obligation to review or approve requests for substitution or equal products that were not specifically mentioned in the Specifications. The Owner reserves the right to request a substitute at any time during the project.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor’s employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them. The Contractor shall at all times be in control of the work and shall be responsible for the safety of his employees, subcontractors, sub-subcontractors, and their employees.

§ 3.4.4 Not later than ten (10) days from the Contract Date, the Contractor shall provide to the Architect and the Owner a list showing the name and the manufacturer proposed to be used for each of the products identified in the Specification, and where applicable, the name of the installing Subcontractor.

§ 3.4.5 The Architect will promptly reply in writing to the Contractor stating whether the Owner or the Architect, after due investigation, has reasonable objection to the list described in 3.4.4. If adequate data on any proposed manufacturer or installer is not available, the Architect may state that action will be deferred until the Contractor provides further data. Failure of the Owner or Architect to reply promptly shall not constitute notice of no reasonable objection. Acceptance of a substitute manufacturer must conform to such requirements.

§ 3.4.6 By making request for substitutions based on Clause 3.4.2 above, the Contractor; (a) represents that he has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified; (b) represents that he will provide the same warranty for the substitution that he would for that specified; (c) certifies that the cost data presented is complete and includes all related costs under his Contract, but excluded additional costs related to the substitution which subsequently become apparent; and (d) will coordinate the installation of the accepted substitute, making such changes as may be required for the work to be complete in all respects.

§ 3.4.7 By law, all school sites are drug, alcohol and tobacco free.
§ 3.4.8 All products intended for use on this project shall be free of asbestos containing material in compliance with Local, State and Federal laws and regulations.

§ 3.4.9 All materials intended for use on this project shall be lead free. This requirement applies to all coatings, including materials applied at the place of fabrication or in the field.

§ 3.5 Warranty
§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work be free from defects, and that the Work will conform with the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment used.

§ 3.5.1.1 Provisions of these Contract Documents, including specified guarantees, shall not limit the extent of natured of any warranty or guarantee under the law; or limit the extent or nature of other warranty or guarantee provisions either express or implied including warranties of merchantability or fitness for particular use.

§ 3.5.1.2 Any Contract or Purchase pertaining to this project shall provide the Owner as ultimate user, with the right to all warranties and guarantees.

§ 3.5.1.3 No Contract or Purchase pertaining to this project shall allow for waiver of warranties or guarantees.

§ 3.5.1.4 Except as provided by the technical Specification Sections, each Contractor shall warrant all materials, workmanship and equipment against original defects or against injury from property and usual wear for a period of not less than two (2) years from the date of Substantial Completion of the project or designated portion thereof and shall repair or replace, at no additional cost to the Owner, any item which may become defective within the warranty period. Any exceptions or additions to this Paragraph are noted in the technical Specifications Sections. This Paragraph shall in no way limit the Contractor’s obligation to warrant the work as identified in any other provisions of the Contract Documents.

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

§ 3.6 Taxes
§ 3.6.1 The Contractor shall pay sales, consumer, use and similar taxes for Work, or portions thereof, provided by the Contractor which are legally enacted when bids are received whether or not yet effective or merely scheduled to go into effect.

§ 3.6.1.1 Contractor shall pay all costs associated with the performance of the work.

§ 3.7 Permits, Fees, Notices and Compliance with Laws
§ 3.7.1 Unless otherwise provided in the Contract Documents, the Owner shall secure and pay for the building permit and the Contractor shall secure and pay for all other permits and governmental fees, licenses and inspections necessary for proper execution and completion of the Work which are customarily secured after execution of the Contract and which are legally required when bids are received. Provisions of this Paragraph shall apply to all items of work both permanent and temporary. The Owner will not reimburse the Contractor for the cost of elective permits which the Contractor chooses to secure in conjunction with his means and methods of executing the work or for any off-site permits. All permit fees not waived by the Governing Authorities will be reimbursed to the Contractor by the Owner with no mark up of overhead, profit, or bond to the Contractor. The Owner will responsible for payment of all fees associated with the set-up of permanent utilities.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.
§ 3.7.3 The Contractor shall review the Contract Documents to ascertain that the Contract Documents are to the best of the Contractor’s knowledge in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations. The Contractor shall promptly notify the Architect and Owner in writing, of any variance therewith and necessary changes shall be accomplished by appropriate Modification.

§ 3.7.3.1 If the Contractor performs Work knowing it to be contrary to laws, statues, ordinances, building codes, and rules and regulations without such notice to the Architect and Owner, the Contractor shall assume full responsibility for such Work and shall bear the attributable costs.

§ 3.7.4 Concealed or Unknown Conditions
If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor’s cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If the Contractor disputes the Architect’s determination or recommendation, or an equitable adjustment or that no change is justified, it may submit a Change Order Proposal for consideration. If the Owner disputes the Architect’s determination, it may request a Change Order Proposal from the Contractor, or issue a Construction Change Directive.

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

§ 3.8 Allowances
§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as acceptable to the Owner, but the Contractor shall not be required to employ persons or entities against which the Contractor makes reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,
.1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
.2 Contractor’s costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
.3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order.

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

§ 3.9 Superintendent and Other On-Site Personnel
§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.
§ 3.9.2 Within five (5) days following the award of the contract, the Contractor shall furnish to the Owner a detailed resume of the proposed project manager, superintendent and assistant superintendent for the project. The Owner may make such investigations as he deems necessary to determine the qualifications of the proposed persons to perform their duties, and the Contractor 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 the candidates if the evidence submitted by or investigation of, the Contractor fails to satisfy the Owner that they are qualified to perform the duties.

§ 3.9.3 An experienced project manager must be assigned to this project. His duties generally are to set schedules, to coordinate with the Architect’s office and the field, to expedite subcontractors, to handle paperwork, to represent the Contractor in meetings and to maintain documentation in a timely manner. Communicating with the Architect and the Owner is an extremely important part of this job. If the project manager does not maintain the prompt performance of his duties, the Owner can direct the replacement and the approval of personnel for this position.

§ 3.9.4 The position of superintendent is to one of the managing the Work on site and generally not to assist in any of the physical construction work. His duties are to coordinate, plan, problem solve, and keep the Work on schedule. He shall have an assistant superintendent who is at the work observing the subcontractors, anticipating material needs and to assist the superintendent as required. He also will be in charge and performing any other duties when the superintendent is absent. No work shall be done without one of these personnel there at the Work site including weekends, evenings, and holidays.

§ 3.9.5 If the above personnel do not perform their duties to the Owner’s satisfaction, the Owner may order him replaced and the Contractor shall comply therewith. No claim will be allowed for actions by the Owner under this provision.

§ 3.9.6 The Contractor shall coordinate and supervise the work of the subcontractors to the end so that the Work is carried out without conflict between trades and so that no trade, at any time, causes delay to the general progress of the work. The Contractors and Subcontractors shall at all times afford each trade, any separate Contractor, or the Owner, every reasonable opportunity for the installation of work and the storage of materials.

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

§ 3.10 Contractor’s Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner’s and Architect’s information a Contractor’s construction schedule for the Work in accordance with the Specifications. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.1.1 The Contractor shall revise and update construction schedule for the Work on a monthly basis, and submit to Owner and Architect. The Construction Schedule shall give accurate representation to the entire Project, for all completed current, and planned activities within scope of Project, and include all respective dates.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect’s approval. The Architect’s approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor’s construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.


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§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

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

§ 3.11.1 This shall be completed prior to final payment and shall be executed by the Contractor certifying that they have been kept in accordance with the provisions of this subparagraph and accurately reflect the construction of the Work as built. In addition to one copy of Drawings, Specifications, Addenda, Shop Drawings, Change Orders and Modifications, the Contractor shall maintain one additional set of Contract Documents to be used solely as a record for the future preparation of “As-Built” drawings. The Contractor shall record all changes and departures from the Contract Documents (floor plans, site plans, ceiling plans, etc.) and the correct locations of concealed work, recording them in red ink on the Documents maintained for this purpose. Recording shall be made immediately after each item of work is completed. At the completion of the Project and before a final payment is made, the Contractor shall deliver these documents to the Architect.

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

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment or systems for some portion of the Work.

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

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors. Submittals which are not required by the Contract Documents may be returned by the Architect without action.

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

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.
§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

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

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

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance or design criteria required by the contract Documents.

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

§ 3.12.11 Submittal review times listed in the Contract Documents are the minimum review time per submission. The Architect is not obligated to approve submittals on the first submission or any subsequent submission if the submittals are incomplete or require revision. It is the responsibility of the Contractor to schedule submittals well in advance of order and delivery times, allowing a reasonable variance in review time and the possibility of revisions and resubmission.

§ 3.13 Use of Site
The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.13.2 The Contractor shall assume responsibility for all of its construction activities on the site. All employees, subcontractors, sub-subcontractors, and material suppliers of the Contractor shall be bound by the directions of the Contractor pertaining to disposition of materials and equipment on the site and precautions necessary for protection of life and property. The Contractor shall be responsible for and shall maintain continuous access to the work for use by all contractors, employees, subcontractor, sub-subcontractors, and material suppliers.
§ 3.14 Cutting and Patching
§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

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

§ 3.14.3 No Contractor shall cut structural members except with written permission of the Owner and Architect.

§ 3.15 Cleaning Up
§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor’s tools, construction equipment, machinery, and surplus materials from and about the Project. The Contractor shall on a daily basis, police and keep clean the site and surrounding areas of the project of his materials, rubbish, tools, construction equipment, machinery, or any materials to be stored thereon, either temporarily or permanently.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

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

§ 3.17 Royalties, Patents and Copyrights
The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification
§ 3.18.1 To the fullest extent permitted by law, and to the extent claims, damages, losses or expenses are not covered by Project Management Protective Liability insurance purchased by the Contractor in accordance with Section 11.3, the Contractor shall indemnify, protect, defend and hold harmless the Owner, Architect, Architect’s consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorney’s fees, arising out of or resulting from performance of the Work caused in whole or in part by acts or omissions of the Contractor, a subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers’ compensation acts, disability benefit acts, or other employee benefit acts.
§ 3.18.3 The obligations of the Contractor under this section 3.18 shall not extend to the liability of the Architect, their consultants, and agents and employees of any of them arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications, or (2) the giving of, or the failure to give, direction or instructions by the Architect, their consultants, and agents and employees of any of them provided such giving or failure to give is the primary cause of the injury or damage and provided that the giving of such instruction is usual and customary as otherwise herein defined.

§ 3.18.4 The Contractor agrees to perform the Work in a safe and proper manner and comply with all laws and Ordinances referring to such Work, and to indemnify and save the Owner, his respective agents, consultants, servants, and employees (hereinafter the “Indemnities”). Such indemnity, as used in this Article, includes the defense of claims, made against the Indemnities and all penalties for violation of the same.

§ 3.18.5 The purchase of insurance by the Contractor shall in no event be construed as a fulfillment or discharge of the obligations set forth in this section.

§ 3.18.6 To the fullest extent permitted by Law, the Contractor shall properly guard its Work and areas affected from being injured by it or by the condition of the Project Site, and shall in all respects comply with any and all provisions of the law and local ordinances relating to the maintenance of danger signals, barriers, lights, and similar safeguards respecting falling materials and in and about all excavations, protruding nails, hoists, openings, scaffolding, stairways and other parts of the work and adjacent area where the same are required. The Contractor agrees to indemnify, defend and save harmless the Indemnities against loss and expense by reason of liability imposed by law upon the Indemnities for damages because of bodily injuries including death at any time resulting therefrom, sustained by any person or persons other than employees of the Contractor, whether or not the Indemnities are negligent in such event.

§ 3.18.7 To the fullest extent permitted by law, the Contractor shall agree to indemnify, defend and save harmless the Indemnities against loss and expense by reason of the liability imposed by law upon the Indemnities for damages because of bodily injuries, including death at any time resulting therefrom, sustained by any employee of the Contractor while at the site where Work under this Contract is conducted, or elsewhere, while engaged in the performance of Work, under this contract. The Contractor will not indemnify the Indemnities’ sole or concurrent negligence, whether attributable to a breach of statutory duty, or administration regulation, or otherwise.

§ 3.18.8 The Contractor agrees to indemnify and hold the Indemnities harmless by reason of any liens, claims demands or other liability, which may be asserted against the Indemnities by any other Independent Contractor on the Project, and which arise out of any act or omission of the Contractor.

§ 3.18.9 In the event of any such liability, loss expense, damage or injury, or if any claim or demand for damage is made against the Indemnities, the Owner may withhold from any payment due or thereafter to become due to the Contractor under the terms of this Contract, an amount sufficient in its judgment to protect and indemnify Indemnities for any and all such claims, liability expense, loss, damage or injury; or the Owner, in its sole decision may require the Contractor to furnish a surety bond satisfactory to the Owner, guaranteeing such protection, which bond shall be furnished by the Contractor within five (5) days written demand had been made thereafter.

§ 3.18.10 The indemnification obligation of the Contractor under this Article 3 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefit payable by or for the Contractor or any Subcontractor under Workman’s Compensation Acts, disability Benefits Acts or other employee benefits Acts.

§ 3.18.11 The Owner will obtain and pay for, if necessary, the general building permit, post applicable utility bonds and pay access fees and right of way fees. The Contractor will arrange and pay for the cost of all other “trade” permits, approvals and inspections. The Contractor will be responsible for notifying all agencies to schedule inspections or approvals, whether permits or fees are in the Contractor's or the Owner's responsibility.
§ 3.18.12 Contractor shall not place any signs, billboards or poster on any portion of the project site, building property or fences (temporary or permanent) surrounding the same, unless prior written permission has been received from the Owner, and then only of a size, material, color and type and a location approved by the owner.

§ 3.18.13 The Contractor shall be responsible for implementing safety programs for his own forces and those of his/her subcontractors in accordance with Federal, State, and local requirements. In addition to other indemnities contained herein the Contractor agrees to indemnify and hold harmless against any and all damages, claims and losses, the Owner and/or Architect from any and all damages, claims and losses made as a result of Contractor’s failure to abide by this provision, the Contract and for any and all safety and health (including but not limited to OSHA, MOSH, and VOSH) claims or violations that are alleged or brought. Said indemnification shall include but not be limited to Owner’s and/or Architect’s attorney’s fees and costs.

ARTICLE 4 ARCHITECT
§ 4.1 General
§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

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

§ 4.2 Administration of the Contract
§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents, and will be an Owner’s representative (1) during construction (2) until final payment is due and (3) with the Owner’s concurrence, from time to time during the one-year period for correction of Work described in Section 12.2. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified in writing in accordance with other provisions of the Contract.

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

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications
The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect’s services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect’s consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.
§ 4.2.5 Based on the Architect’s evaluations of the Contractor’s Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith to require or not require such inspection or testing shall take the place of or substitute for the responsibilities of the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor’s submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect’s action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect’s professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect’s review of the Contractor’s submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect’s review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures, unless otherwise specifically stated by the Architect. The Architect’s approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner’s review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

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

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect’s response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If no agreement is made concerning the time within which interpretations required of the Architect shall be furnished in compliance with this Section 4.2, then delay shall not be recognized on account of failure by the Architect to furnish such interpretations until 15 days after written request is made for them.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings.

§ 4.2.13 The Architect’s decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents and acceptable to the Owner.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect’s response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.
ARTICLE 5  SUBCONTRACTORS

§ 5.1 Definitions

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

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

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

§ 5.2.1 Unless otherwise stated in the Contract Documents, or bidding requirements, the Contractor, as soon as practicable after award of the Contract, but not later than 48 hours after requested by the Owner, shall notify in writing, the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

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

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

§ 5.2.4 The Contractor shall not change a Subcontractor, person or entity previously selected without approval of the Owner.

§ 5.2.5 If the Contractor fails to submit names of persons or entities to whom the Owner and Architect has no reasonable objection within a reasonable amount of time, the Contract may be terminated by the Owner.

§ 5.2.6 The Contractor shall not be entitled to progress payments prior to approval of the persons or entities as provided in Subparagraph 5.2.1.

§ 5.3 Subcontractual Relations

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

§ 5.4 Contingent Assignment of Subcontracts
§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided
that

.1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to
Section 14.2, or stoppage of the Work pursuant to Subparagraph 14.2.3 and only for those subcontract
agreements which the Owner accepts by notifying the Subcontractor in writing; and

.2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the
Contract.

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

§ 5.4.2 Paragraph deleted in its entirety.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a
successor contractor or other entity.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
§ 6.1 Owner’s Right to Perform Construction and to Award Separate Contracts
§ 6.1.1 The term “Separate Contractor(s)” shall mean other contractors retained by the Owner under separate
agreements. The Owner reserves the right to perform construction or operations related to the Project with the
Owner’s own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar
to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and
waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations
on the site, the term “Contractor” in the Contract Documents in each case shall mean the Contractor who executes
each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner’s own forces and of each Separate
Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with
any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any
revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction
schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until
subsequently revised.

§ 6.1.4 Paragraph in its entirety.

§ 6.2 Mutual Responsibility
§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and
storage of their materials and equipment and performance of their activities, and shall connect and coordinate the
Contractor’s construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor’s Work depends for proper execution or results upon construction or operations by
the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work,
promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or
Separate Contractor that would render it unsuitable for proper execution and results of the Contractor’s Work.
Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the
Work shall constitute an acknowledgment that the Owner’s or Separate Contractor’s completed or partially
completed construction is fit and proper to receive the Contractor’s Work. The Contractor shall not be responsible
for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not
apparent.
§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor’s delays, improperly timed activities or defective construction of the Contractor. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor’s delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage caused by the Contractor to completed construction or partially completed construction or to property of the Owner or other Contractors as provided in Section 10.2.5.

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

§ 6.2.6 Should the Contractor be caused damage by a separate Contractor, no action will lie against the Owner and the owner shall have no liability therefore, but the contractor may assert his claim for damages against Contractor as the third party beneficiary under the Contract between the Contractor and the owner. Should Contractor make a claim against the Owner or Architect on account of damages alleged to have been so sustained, such the Contractor agrees that he/she will reimburse to the Owner or Architect as the case may be, the cost of defending such suit, including reasonable attorney’s fees, and if any judgment against the Owner or Architect arises therefrom the Contractor shall pay or satisfy it and shall pay all costs incurred by the Owner or Architect.

§ 6.2.7 Upon entering the project, the Contractor shall locate all general reference points provided, and take such action as necessary to prevent their destruction.

§ 6.2.8 Under the work of each Contractor, subcontractor, and all personnel. Lay out work and be responsible for all lines, levels, elevations, and measurements from points provided. The Contractor shall exercise proper precautions to verify conditions indicated in the Contract Documents and be responsible for any error resulting from failure to exercise such precaution.

§ 6.3 Owner’s Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

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

§ 7.1.2 A Change Order shall not release the Contractor of obligations under the contract and shall be based upon agreement among the Owner, Contractor and Architect; A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor.

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

§ 7.1.4 Except in any emergency which might endanger life or property, no extra work or charge shall be made unless a written change order from the Owner and/or Architect has been received by the Contractor.

§ 7.2 Change Orders

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

1. The change in the Work;
2. The amount of the adjustment, if any, in the Contract Sum; and
3. The extent of the adjustment, if any, in the Contract Time.
§ 7.2.2 Methods used in determining adjustments to the Contract Sum may include those listed in Section 7.3.3.

§ 7.3 Construction Change Directives

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

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order or in the event that full execution of a Change Order may cause undue delay to the work.

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

.1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;

.2 Unit prices stated in the Contract Documents or subsequently agreed upon;

.3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or

.4 As provided in Section 7.3.6.

§ 7.3.4 “If the Contractor does not respond promptly or disagrees with the method for adjustment in Contract Sum, the method and the adjustment shall be determined by the Architect on the basis or reasonable expenditures and savings of those performing the work attributable to the change, including an allowance for overhead and profit in accordance with the schedule set for in Paragraph 7.3.4.5 below. In such case, and also under Clause 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

All change Orders shall be subject to the following format for itemization of the costs:

1. Attach an itemization of labor hours. A certified payroll affidavit may be required to substantiate labor rates. The cost of foreman and superintendents may be added only when the change order make necessary the hiring of additional supervisory personnel or makes their employment for time in addition to that required by the basic contract, or if the foreman or superintendent participates in the actual work of the Change Order.

2. Labor burden percentage costs shall include all fringes, taxes, insurance, liabilities, workmen’s compensation and unemployment. Labor burden percentage rates are subject to approval of the Owner and are not subject to profit and overhead.

3. Attach an itemization of all materials used listing unit prices and extended prices.

4. Attach an itemization of all equipment used and rental rates. If equipment is a rental, attach copy of rental invoice. Rental equipment and contractor-owner equipment costs shall include all costs associated with the equipment, i.e. transportation, set-up gas and oil. Rental rates shall not exceed rates established by local rental companies and “MEANS DATA” rates.

5. Profit and overhead shall be considered full reimbursement for any additional expenses caused by the change order work. The Contractor shall agree to profit and overhead markup on work by his own forces as outlines in paragraph 10 below. These allowances for overhead and profit include among other costs; maintenance and/or operations of Contractor’s regular established office, branch office, and other facilities; resident and/or non-actively engaged supervision; time keepers; clerks; stenographers’ watchmen; cost of correspondence; increased item of warranty under the change.

6. The cost of the bond is not subject to overhead and profit.
7. A Change Order request shall not be considered unless submitted with all required and requested supporting documentation. All parties to the change shall use the Change Order Format.

8. For all work to be performed by Subcontractor/Subcontractors, the Contractor shall furnish the Subcontractors’ itemized proposal which shall contain original signatures by an authorized representative of the Subcontracting firm. If requested by the Owner or Architect, proposal from suppliers or other supporting data to substantiate the Contractor’s or subcontractor’s cost shall be furnished.

9. Change Order costs shall not exceed unit pricing as provided in the Contract Documents.

10. Unless otherwise specified, the allowable markup for combined overhead and profit, for work performed by the Contractor with his own forces will be based on the monetary value of the work in accordance with the following schedule.

<table>
<thead>
<tr>
<th>VALUE OF WORK</th>
<th>COMBINED OVERHEAD AND PROFIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0 - $1,000</td>
<td>15%</td>
</tr>
<tr>
<td>$1,001 - $5,000</td>
<td>10%</td>
</tr>
<tr>
<td>$5,001 - $10,000</td>
<td>7%</td>
</tr>
<tr>
<td>$10,001 - $25,000</td>
<td>5%</td>
</tr>
<tr>
<td>$Over $25,000</td>
<td>Negotiated, but not more than 5%</td>
</tr>
</tbody>
</table>

11. For extra work performed by a Subcontractor with his own organization, the percentages for combined overhead and profit will be as outlined above. On the work partly or solely performed by a Subcontractor, the Contract will be allowed five percent (5%) of total costs of the Subcontractor’s labor, materials, overhead and profit only.

12. The Contractor shall submit all Change Order on the Owner’s Change Order Request Form, which is attached in the Contractor Documents.

§ 7.3.5 Deleted in its entirety

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor’s agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6.1 Failure of the Contractor to advise the Architect of any disagreement with the Construction Change Directive within a reasonable period, and prior to the commencement of the change in the work involved, will constitute the Contractor’s agreement to the terms provided in the Construction Change Directive.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor’s agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order. Failure of the Contractor to advise the Architect of any disagreement with the construction Change Directive within a reasonable period, and prior to the commencement of the change in the work involved, will constitute the Contractor’s agreement to the terms provided in the Construction Change Directive.

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

§ 7.3.9 Paragraph deleted in its entirety.

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

§ 7.4 MINOR CHANGES IN THE WORK
The Architect, with the concurrence of the Owner, will have authority to order minor changes in the Work not involving adjust in the contract Sum or extension of the contract Time and not inconsistent with the intent of the purposes of the building and the contract Documents. Such changes shall be affected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly.

ARTICLE 8 TIME
§ 8.1 Definitions
§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Notice to Proceed. If there is no Notice to Proceed it shall be such other date as may be established in the Owner-Contractor Agreement or elsewhere in the Contract Documents. The date shall not be postponed by the failure to act to the Contractor or of persons or entities for whom the Contractor is responsible.

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

§ 8.2 Progress and Completion
§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

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

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.2.4 Should the progress of the Work be delayed by any fault, neglect, act, or omission of the Contractor or any person or firm employed by him or should it be necessary to complete the Work within the time permitted for the Contractor’s work, the Contractor shall, at his own expense, work such overtime as may be necessary to make up for all lost time and to avoid delay in completion of the Work. The Contractor shall compensate the Owner for and hold him harmless against any and all cost, expense, losses, liability, and damages which the Owner may sustain or incur by reason of such delay.

§ 8.3 Delays and Extensions of Time
§ 8.3.1 Requests for extension of completion time due to conditions over which the Contractor has no control or its subcontractors and suppliers have no control will be reviewed by the Owner after written application is made to the Owner and Architect a time extension, with reasons stated clearly, and detailed proof give for all delays beyond the Contractor’s or its subcontractors and suppliers control. No time extension will be allowed except by written and specific approval of the Owner. Delays beyond the Contractor’s or its subcontractors and suppliers control may include: an act or neglect of the Owner’s own forces, Architect, or of an employee of either, or of a separate contractor employed by the Owner, or by changes orders in the Work, or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor’s or its subcontractors and suppliers control or by other cause which the Owner and Architect determine may justify delay, then the Contract Time shall be extended by Change Order. Extension of time shall be Contractor’s sole remedy for delays unless the same shall have been caused by acts constituting intentional interference by the Owner with Contractor’s performance of the work where and to the extent such acts continue after contractor’s notice to Owner of such interference. Owner’s exercise of any of its rights under Article 7, Changes in the work, regardless of the extent or number of such
§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

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

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

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

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, adjustment of the applicable unit prices may be considered by the Owner or Contractor.

§ 9.2 Schedule of Values

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

§ 9.3 Applications for Payment

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

§ 9.3.1.1 Paragraph deleted in its entirety.

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

§ 9.3.2 Unless previously approved by Owner, payments shall not be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. Similarly, unless previously approved by the Owner, payments shall not be made for materials and/or equipment stored off the site. Payment for materials and equipment stored off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner’s title to such materials and equipment or otherwise protect the Owner’s interest, and shall include applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor’s knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities...
that provided labor, materials, and equipment relating to the Work. Nothing contained herein diminishes the responsibility of the contractor to replace stolen, defective, or vandalized work, materials or equipment.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor’s Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect’s reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect’s reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect’s evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect’s knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor’s right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.4.3 Retainage in the amount of five (5%) percent shall be withheld with each application for payment until Substantial Completion.

§ 9.4.4 In any event where the Architect, with cause does not certify payment or withholds certification to any extent, the Contractor shall nonetheless continue to fully perform the work.

§ 9.5 Decisions to Withhold Certification

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

.1 defective Work not remedied;
.2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
.3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
.4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
.5 damage to the Owner or a Separate Contractor;
.6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
.7 repeated failure to carry out the Work in accordance with the Contract Documents.
.8 mechanic’s lien notice or action filed, or reasonable evidence indicating probable filling of each notice of action.

§ 9.5.2 Paragraph deleted in its entirety.
§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect. Progress payments shall not be due until the following conditions have been achieved: (A) the Contractor has submitted a sworn Application for Payment in an Owner’s approved format showing all money paid out and costs incurred to the date of Application for Payment; (B) the Contractor has submitted unconditional lien waiver on a form acceptable to the Owner, establishing the total amount of payments to date and conditional lien waivers for the amount of payments to date and conditional lien waivers for the amount of the current request for all Subcontractors and Supplies.

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

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

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

§ 9.6.5 The Contractor’s payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

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

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney’s fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.
§ 9.7 Failure of Payment
If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the contractor’s Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contractor Documents the amount certified by the Architect, then the Contractor may, upon fifteen (15) additional days’ written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately, and the Contract Sum shall be increased by the amount of the Contractor’s reasonable costs of shut-down, delay, and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion
§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

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

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

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

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

§ 9.8.6 When the Architect and owner agree that the project has reached “Substantial Completion” as set forth in paragraph 8.1.3 is on schedule, and it appears that there are no complications or problems in completing the job, the retainage may be reduced to two and a half percent (2.5%) at the Owner’s discretion.

§ 9.9 Partial Occupancy or Use
§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage.

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

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

§ 9.10 Final Completion and Final Payment
§ 9.10.1 Upon receipt of the Contractor’s notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect
finds the Work acceptable under the Contract Documents and the Contract fully performed, and all warranties, O&M manuals, demonstrations, and training have been received or conducted, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect’s knowledge, information and belief, and on the basis of the Architect’s on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect’s final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor’s being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner’s property might be responsible or encumbered (less amounts withheld by the Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days’ prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment with AIA Form and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, release and waivers of liens, claims, security interest or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner and Release of Liens on the “Contractor’s Affidavit of Release of Liens and Payments of Debts and Claims” AIA Form (7) all records, drawings and specifications, addenda, change orders, and other modifications maintained at the site under the subparagraph 3.11.1 (verify) all warranties, instruction and maintenance manuals required. If a Sub contractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such liens. If such lien remains unsatisfied after payments are made, the Contractor shall not become due until all close-out documents have been properly submitted to and certified by the Architect, and delivered by the Architect to the Owner.

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

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

.1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
.2 failure of the Work to comply with the requirements of the Contract Documents;
.3 terms of special warranties required by the Contract Documents; or
.4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.
.5 faulty or deceptive work appearing after substantial completion

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

§ 9.10.6 Final payment constituting the entire unpaid balance of the Contract Sum shall be paid by the Owner to the Contractor not later than sixty (60) days after the work has been completed and accepted by the Owner, and the Architect, in accordance with all other provisions of 9.10.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY
§ 10.1 Safety Precautions and Programs
The Contractor shall solely be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall submit the Contractor’s safety
program to the Owner. It is expressly understood and agreed that the Owner, the Architect, and his Project Representative are not in charge of the Work or in control thereof. Any provisions in the contract Documents in conflict with this Article shall be null and void.

§ 10.2 Safety of Persons and Property

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

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

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

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

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

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

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor’s organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor’s superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect. This person, or approved alternate person, shall be on site at all times while personnel for whom they are responsible are on site. This person will be fully responsible for implementing and enforcing a program amongst his company’s employees, that ensures their safety and the safety of others affected by their work, and that is in full compliance with governing agencies including the Occupational Safety and Health Administration (OSHA).

§ 10.2.7 The Contractor shall not load or permit any part of the construction or site to be loaded so as to endanger its safety or the safety of persons or property and the Contractor shall protect adjoining properties, streets, walkways, sidewalks, and paths so as to protect the safety of persons or property using such adjoining properties, walkways, sidewalks and paths.

§ 10.2.8 The Contractor shall maintain updated safety data sheets (SDS) for all materials used. A copy of the list must be kept on site by the Contractor in a readily accessible area. Under no circumstances will the storage of hazardous materials unnecessary for completion of the Work to be allowed on site. It is the Contractor’s responsibility to promptly remove all stored hazardous materials from the site upon completion of the Work for which it is intended.
§ 10.2.9 The Contractor shall protect excavations and structures from damage by rain, water, ground water or water from any other source.

§ 10.2.10 The Contractor shall provide constant protection to maintain work, materials, apparatus and fixture free from injury and damage by rain, snow, wind, storms, frost, or heat and normal construction operations and shall protect work as necessary or at the end of each day's work.

§ 10.2.11 The Contractor shall remove work damaged due to failure to provide specified protection and replace the work at no additional cost to the Owner.

§ 10.2.12 Injury or Damage to Person or Property
If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

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

§ 10.3.1.1 In the event the Contractor encounters on the site material reasonably believed to be asbestos or polychlorinated biphenyl (PCB) which has not been rendered harmless, the Contractor shall immediately stop Work in the affected and report the condition to the Owner and Architect in writing. The Work in the affected area 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) and has not been rendered harmless. The Work in the affected area shall be resumed in the absence of asbestos or polychlorinated biphenyl (PCB), or when it has been rendered harmless, but written agreement or the Owner and contractor, or in accordance with final determination by the Architect.

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

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect’s consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys’ fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity. Failure of contractor to stop work upon encountering asbestos of PCB per Subparagraph 10.3.1 shall relieve the Owner of responsibility for any losses by the Contractor attributable to these materials.
§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents.

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

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

§ 10.4 Emergencies
In any case of an emergency, the Contractor shall immediately respond in accordance with the Contractor’s safety plan and notify the Architect and Owner by the most expeditious means available, with a subsequent written notice explaining the situation and actions taken.

§ 10.4.1 Additional compensation or extension of time will not be considered or permitted for emergencies arising from delay, damage, or loss as a stipulated in 8.2.4 and 10.2.5 or other applicable provisions.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor’s Insurance and Bonds
§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect’s consultants shall be names as additional insured under the Contractor’s commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.1.1 The Contractor shall require all Subcontractors to maintain during the term of the contract commercial general liability insurance, business auto liability insurance, workers compensation insurance, employer liability insurance and umbrella excess liability insurance to the same extent required of the Contractor. The Contractor shall furnish Subcontractors’ certificates of insurance to the Owner immediately upon request.

§ 11.1.2 All insurance policies required hereunder shall be endorsed to provide that policy is not subject to cancellation, non-renewal or material reduction coverage until sixty (60) days prior written notice has been given to the Owner.

§ 11.1.1.3 All required insurance coverages must be underwritten by insurers allowed to do business in the State of Maryland and acceptable to the Owner. The insurers must also have a policy holders’ rating of "A-" or better, and financial size of “Class VII” or better in the latest evaluation by A.M.Best Company, unless Owner grants specific approval for an exception.

§ 11.1.2 Insurance Limits

§ 11.1.2.1 The Contractor shall purchase and maintain the following insurance coverages on an “occurrence” basis which shall be written for not less than the limits specified below or required by law, whichever is greater.

§ 11.1.2.1.1. Commercial general liability insurance or its equivalent for bodily injury, personal injury and property damage including loss of use, with minimum limits of:

$1,000,000 each occurrence; $1,000,000 personal and advertising injury;
$2,000,000 general aggregate; and
$2,000,000 projects/completed operations aggregate

This insurance shall include coverage for all of the following:

i. General aggregate limit applying on a per project basis;
ii. Liability arising from premises and operations;
iii. Liability arising from actions of independent contractors;
iv. Liability arising from products and completed operations with such coverage to be maintained for two years after completion of Work;
v. Contractual liability including protection for contractor from bodily injury and property damage claims arising out of liability assumed under this Contract; and
vi. Liability arising from the explosion, collapse, or underground (XCU) hazards.

§ 11.1.2.1.2 Business auto liability insurance or its equivalent with a minimum limit of $1,000,000 per accident and including coverage for all of the following:

i. Liability arising out of ownership, maintenance or use of any automobile(s) (or hired and non-owned automobile(s) only if no owned automobile(s)); and
ii. Automobile(s) contractual liability.

§ 11.1.2.1.3 Workers compensation insurance or its equivalent with statutory benefits as required by any state or Federal law, including standard “other states” coverage; employer’s liability insurance or its equivalent with minimum limits of:

$100,000 each accident for bodily injury by accident;
$100,000 each employee for bodily injury by disease; and
$500,000 policy limit for bodily injury by disease.

§ 11.1.2.1.4 Umbrella excess liability or excess liability insurance or its equivalent with minimum limits of:

$5,000,000 per occurrence;
$5,000,000 aggregate for other than products/completed operations and auto liability; and
$5,000,000 products/completed operations aggregate

And including all of the following coverages on the applicable schedule of underlying insurance;

i. Commercial general liability
ii. Business auto liability; and
iii. Employers’ liability.

§ 11.1.2.1.5 The Board of Education of Washington County including its’ elected and appointed officials, officers, consultants, agents and employees and authorized volunteers of the Washington County Board of Education shall be named as additional insureds on the contractor’s commercial general liability insurance and umbrella excess or excess liability insurance policies with respect to liability arising out of the Contractor's projects, installation, and/or services provided under this Contract. Such coverage shall extend to cover the additional insured(s) for liability arising out of the following:

i. On-going operations; and
ii. Projects and completed operations.

The commercial general liability policy and the umbrella excess liability or excess liability policies, if required herein, must include additional insured language, which shall afford liability coverage for the exposures listed above in i. and ii.

§ 11.1.2.1.6 The certificate of insurance must be provided to the Purchasing Department of Washington County Public Schools prior to commencement of the Contract.
§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverage afforded under the policies will not be canceled or allowed to expire until at least 30 days’ prior written notice has been given to the Owner. If any of the foregoing insurance coverages are required to remain in force after final payment and are ready available, an additional certificate evidencing continuation of such coverage shall be submitted with the final Application for Payment as required by Section 9.10.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the contractor with reasonable promptness in accordance with the Contractor’s information and belief.

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

§ 11.2 Owner’s Liability Insurance
§ 11.2.1 WCPS will not provide Builder’s Risk protection as it does not apply.

§ 11.3 Waivers of Subrogation
§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, and Architect’s consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.4 or other property insurance applicable to the Work, except such rights as they have to proceed of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate shall require of the Architect, Architect’s consultant, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

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

§ 11.4 Property Insurance
§ 11.4.1 The Owner will effect and maintain “All Risk” insurance for physical loss or vandalism and malicious mischief perils subject to a deductible of $1,000 per occurrence upon all structures and appurtenances thereto on which the work of the contract is to be done to the full insurable value thereof, including materials in place or to be used as part of the permanent construction. Coverage shall protect the Owner, the Contractor and Subcontractor as interests may appear. The Owner does not maintain insurance of any kind on tools, equipment, temporary offices, sheds, shack, and other property of the Contractor or his employees, no materials or supplies stored on site or away from the job site. It shall be the complete responsibility of the Contractor to provide for his own protection and that of his employees against any losses of such tools, equipment, and other property and materials.

§ 11.4.2 WCPS will not provide boiler and machinery insurances as it does not apply.

§ 11.4.3 Loss of Use, Business Interruption, and Delay in Completion Insurance
The Owner, at the Owner’s option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner’s property, or the inability to conduct normal operations, due to fire or other causes of loss. The
Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner’s property, due to fire or other hazards however caused.

§11.5 Adjustment and Settlement of Insured Loss
§11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

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

§11.6. PERFORMANCE BOND AND PAYMENT BOND
§11.6.1 Unless waived by the Owner in writing, the contractor shall furnish a Performance Bond and labor and Material Payment Bond covering the faithful performance of the Contract and the payment of all obligations arising thereunder and complying with the requirements of Maryland law. Both Bonds shall be in the amount of one hundred percent (100%) of the contract amount and shall name the Owner as Obligee. Firms issuing bonds must be licensed to write bonds in the State of Maryland. The Contractor shall pay premiums for required bonds. Obtaining of bonds by contractor shall be a condition precedent to effectuation of the Contract between the Owner and Contractor. If additional work is authorized the amounts of the bonds shall be increased to cover the value of the increased Contract sum. All bonds shall conform to the requirement of the Maryland Little Miller Act.

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

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK
§12.1 Uncovering of Work
§12.1.1 If any portion of the Work is covered contrary to the request of the Architect or to the requirements specifically expressed in the Contract Documents, it must, if required in writing by either, the Architect, Owner, or any other governmental agency, be uncovered for their observation and be replaced at the Contractor’s expense without change in the Contract Time.

§12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor’s expense.

§12.2 Correction of Work
§12.2.1 Before Substantial Completion
The Contractor shall promptly correct Work rejected the Architect or work that fails to conform to the requirements of the Contract Documents, whether observed before or after Substantial Completion and whether or not fabricated, installed or completed. The contractor shall bear costs of correction such rejected Work, including additional testing.
and inspections and compensation for the Architect’s, the Owner’s, or any governmental agency’s services and expenses made necessary thereby.

§ 12.2.1.1 Defective work shall include but not be limited to: Work which may be caused by deterioration or failure to perform due to premature wear (not occasioned by abuse), inherent defects in materials, workmanship of manufacturer, or fabrication, or improper execution of work.

§ 12.2.1.2 Cost of correcting such related work also includes all contingent damages arising therefrom, including damages to the work (whether installed by the contractor or another) and to other property of the Owner.

§ 12.2.1.3 Such warranties as provided herein do not deprive the Owner of the Owner’s right to prosecute any claim for breach of contract.

§ 12.2.1.4 Any defective or nonconforming work during this period, causing hazard to life, safety, property, or causing the Owner a financial loss, shall be corrected immediately without regard to normal working hours. The Owner will immediately endeavor to make telephone notice to the Contractor on the next working day.

§ 12.2.1.5 The Owner shall direct, if endeavors to contract the Contractor fail, certain telephone notification to Subcontractors in order to expedite emergency repairs. The Contractor shall not be relieved of this responsibility and shall supervise and direct correction of defects as required by the Contract Documents.

§ 12.2.1.6 The manufacturer of a product may be specifically mentioned as a party to a warranty. Then, in such cases, it shall be the contractor’s obligation to produce the required warranty of the manufacturer and submit it to the Architect for examination and approval. Inclusion of a manufacturer as a party to a warranty does not relieve the Contractor from the requirements of the Contract Documents.

§ 12.2.1.7 Warranties on operating systems, equipment, or components placed in operation prior to Substantial Completion or acceptance shall begin on the date of Substantial Completion.

§ 12.2.2 After Substantial Completion
§ 12.2.2.1 In addition to the Contractor’s obligations under Section 3.5, if within two years after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract documents, any of the work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the two-year period for correction of Work, if the Owner fails to notify the correction by the contractor and give the Contractor an opportunity to make the correction, the Owner waives the right to require correction by the Contract and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

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

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

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

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or other Contractors caused by the Contractor’s correction or removal of work which is not in accordance with the requirements of the Contract Documents, including attorneys’ fees and expenses.
§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the two year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor’s liability with respect to the Contractor’s obligations other than specifically to correct the Work.

§ 12.2.6 Inspection, failure to inspect, or approval or acceptance of any part of the work, or any payment on account thereof, shall not in any way limit the right to reject materials or equipment later found by the Architect, the Owner, or any Governmental Agency to be defective or not in accordance with requirements of the Contract Documents.

§ 12.3 Acceptance of Nonconforming Work
If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13   MISCELLANEOUS PROVISIONS
§ 13.1 Governing Law
The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction’s choice of law rules.

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

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

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

§ 13.3.2 No consent or waiver, expressed or implied, by either party to this agreement to or of any breach or default by the other in performance of any obligations hereunder shall be deemed or construed to be a consent or waiver to or any other breach or default by such party hereunder. Failure on the part of any party hereto to complain of any act or failure to act of the other party or to declare the other party in default hereunder, irrespective of how long such failure continues, shall not constitute a waiver of the rights of such party hereunder. Inspection by, payment by, or tentative approval or acceptance by the Owner or the failure by Owner to perform any inspection hereunder, shall not constitute final acceptance of the work or any part thereof, and shall not release Contractor from any of its obligation hereunder.

§13.3.3 Contractor is subject to liquidated damages in the amount set forth on the bid form specification for delay of the date established in the Contract Documents for substantial completion, when such delay has been determined to be caused by the Contractor.

§ 13.4 Tests and Inspections
§ 13.4.1 Where Specifications or IBC Code required testing by an independent testing laboratory the Owner will retain and pay for the services of a testing laboratory under a separate contract. The Contractor shall be responsible for coordinating the scheduling of all tests with the testing laboratory. Reports, will be delivered to the Owner, Architect, and the Contractor simultaneously.
1. Tests, inspections and approvals of portions of the Work not listed in the Contract Documents be required by the laws, ordinances, rules, regulations or orders of public authorities or municipalities having jurisdiction shall be made at an appropriate time.

2. The Contractor shall make arrangement for such tests, inspections and approvals with the Owner’s independent testing laboratory or with the appropriate public authority.

3. The Contractor shall give the Owner and Architect/Engineer timely notice of when and where tests and inspections are to be made so the Architect/Engineer may observe the procedures.

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

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

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

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

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

§ 13.4.7 If required, subsequent to completion of construction, the Contractor shall submit to the Owner a signed certification indicating that to the best of his knowledge and belief, Work was performed in accordance with the approved Construction Documents.

§ 13.5 Interest.
No interest shall be paid by the Owner to Contractor under the Contract Documents.

§ 13.6.1 Contractor recognizes and agrees that Owner is a governmental Agency and that the statute of limitations is not applicable to the Owner.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT
§ 14.1 Termination by the Contractor
§
(Paragraphs Deleted)

14.1.1 Paragraph deleted in its entirety.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.
§ 14.1.3 If one of the reasons described in Section 14.1.1 exists, the Contractor may, upon seven days’ written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed to date.

§ 14.1.4 Deleted in its entirety.

§ 14.2 Termination by the Owner for Cause
§ 14.2.1 If the Contractor is adjudged bankrupt or if he makes a general assignment for the benefit of his creditors, or if a receiver is appointed on account of insolvency, or if he fails to make prompt payment for materials, supplies, labor, or other items purchased or used in connection with the work or to Subcontractors, or if he fails to pursue the work in accordance with the contract Documents or schedules established, or fails to supply enough skilled supervisors, or workmen, or materials, tools, equipment, or supplies, or the proper quality (including failure occasioned by strike, picketing, boycott, or other cessation of the work), or if he interferes with or disrupts or threatens to interfere or disrupt the operations of the Owner, or any other Contractor or Subcontractor, which by reason of labor dispute, picketing, boycott, other cause, or if he is otherwise guilty of a substantial violation of the provisions of the Contract Documents, the Owner may, without prejudice to any right or remedy and after giving the Contractor and his surety, if any, two (2) days' notice, or immediately in the event the default will in the reasonable judgment of the Owner, endanger the project if permitted to continue, terminate the employment of the Contractor and take possession of the site and materials in the Contractor's shop or in transit any may finish the work by whatever method he may deem expedient. In such case, the Contractor shall not be entitled to receive any further payment until the work is finished.

§ 14.2.2 When any of the above reasons exist, and the Owner confirms that sufficient cause exists to justify such action, the Owner may without prejudice to any other rights or remedies of the Owner and after given the Contractor and the Contractor’s surety, if any, two (2) days’ written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:
   1. Take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor
   2. Accept assignment of subcontractors pursuant to Section 5.4; and
   3. Finish the Work by whatever reasonable method the Owner may deem expedient.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract sum exceeds costs of finishing the work, including compensation for the Architects services and expenses made necessary thereby, such excess shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall, upon application, be certified by the Architect in the manner provided in Paragraph 9.4, and this obligation for payment shall survive termination of the Contract.

§ 14.2.5 In additional to, and not in substitution of the remedies herein specified, the Owner may, with cause, upon two (2) days written notice to the Contractor, provide or arrange for the provision of such workmen and materials necessary to continue and complete the work contracted for hereunder for the account of the Contractor and at Contractor’s cost and expense, and apply any and all funds which may become due to the Contractor thereto, all without terminating, rescinding or voiding this Agreement of releasing the Contractor rom any liability hereunder.

§ 14.3 Suspension by the Owner for Convenience
§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.
§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent
1. that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
2. that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience
§ 14.4.1 The Owner may, at any time, terminate the Contract in whole or in part for the Owner’s convenience and without cause. Terminate by the Owner under this Paragraph shall be by a notice of termination delivered to the contractor specifying the extent of termination and the effective date.

§ 14.4.2 Upon receipt of a notice of termination for convenience, the Contractor shall immediately in accordance with instructions from the owner, proceed with performance of the following duties regardless of delay in determining or adjusting amounts due under this Paragraph;
1. cease operation as specified in the notice;
2. place not further orders and enter into no further Subcontracts for materials, labor services or facilities except as necessary to complete on-going portions of the Contract as directed by the Owner;
3. terminate all subcontracts and orders to the extend they relate to the Work terminated;
4. proceed to complete the performance of Work not terminated; and
5. take actions that may be necessary or that the Owner may direct, for the protection and preservation of the terminated Work.

§ 14.4.3 Upon such termination, The Contractor shall recover as its sole remedy payment for Work properly performed in connection with the terminated portion of the work prior to the effective date of termination and for items properly and timely fabricated off the Project site, delivered and stored in accordance with the Owner’s Instructions. The Contractor hereby waives and forfeits all other claims for payment and damages including without limitation, anticipated profits.

§ 14.4.4 The Owner shall be credited (1) payments previously made to the Contractor for the terminated portions of the Work, (2) potential claims which the Owner has against the Contractor under the contract and (3) the value of the materials, supplies, equipment or other items that are to be disposed of by the Contractor that are part of the Contract Sum. The Owner may at its option also require that the Contractor assign the balance of the Contract to another Contractor of the Owner’s choosing. If the Contractor fails or refuses to execute any documents necessary to effectuate such assignment, the Owner may execute such documents on behalf of the Contractor.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims
§ 15.1.1 Definition
A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term “Claim” also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 15.1.2 Time Limits on Claims
Except as indicated in

(Paragraph Deleted)

15.1.6 claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Claims must be initiated by written notice to the Architect and the other party.
§ 15.1.3 Notice of Claims
§ 15.1.3.1 Written notice shall be on Contractor’s stationary; meeting minutes and facsimile transmission will not be considered written notice.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance
§ 15.1.4.1 Pending final resolution of a Claim, unless otherwise agreed in writing the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the contract Documents except the Owner may withhold payment to an extent reasonably necessary to secure or compensate for a claim.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker’s decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost
If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time
§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor’s Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

§ 15.1.6.3 It has been determined that the following table will be used to determine allowable non-compensable time extensions to the contract for “unusually severe weather” at the construction site based on a five (5) day work week.

<table>
<thead>
<tr>
<th>MONTH</th>
<th># of work days (*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>7</td>
</tr>
<tr>
<td>February</td>
<td>7</td>
</tr>
<tr>
<td>March</td>
<td>5</td>
</tr>
<tr>
<td>April</td>
<td>4</td>
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<tr>
<td>May</td>
<td>3</td>
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<tr>
<td>June</td>
<td>3</td>
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<tr>
<td>July</td>
<td>3</td>
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<tr>
<td>August</td>
<td>3</td>
</tr>
<tr>
<td>September</td>
<td>3</td>
</tr>
<tr>
<td>October</td>
<td>4</td>
</tr>
<tr>
<td>November</td>
<td>4</td>
</tr>
<tr>
<td>December</td>
<td>4</td>
</tr>
</tbody>
</table>

(* # of work days that may be expected to occur under normal weather conditions)

Actual adverse weather days must prevent work on critical activities for 50 percent or more of the contractor’s scheduled work day. The number of actual adverse weather delays days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of
§ 15.1.7 Waiver of Claims for Consequential Damages
The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes:

.1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

.2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party’s termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision
§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to resolution of the claim in accordance with Article 6 of AIA Document A101-2017. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand resolution of the claim in accordance with Article 6 of AIA Document A101-2017 without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker’s sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to consider payment for such services but the Owner while not obligated to pay such expenses, will not unreasonably withhold such payment.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties to the extent that both parties agree, but subject to binding dispute resolution as defined per Article 6 of AIA Document A101-2017 if the dispute remains unresolved as defined.
§ 15.2.6 Deleted in its entirety

§ 15.2.6.1 Deleted in its entirety.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor’s default, the Owner may, but is not obligated to, notify the surety and request the surety’s assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic’s lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 16.1 POLICIES OF EMPLOYMENT

(Paragraph Deleted)

§16.1.1 The Contractor shall maintain the policies of employment as follows: The Contractor and all Subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin or age. The contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, color, sex, national origin or age. Such action shall include but not 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.

§16.1.2 The Contractor shall post in conspicuous places, available to employees and applicants for employment, notices setting forth the policies of non-discrimination.

§16.1.3 The Contractor and all subcontractors shall in all solicitations or advertisements for employees placed by them or on their behalf, state that all qualified applicants will receive consideration for employment without regards to race, religion, color, sex, national origin, or age.

§16.1.4. Minority Business Enterprise (MBE) Requirements are part of the Conditions of the Contract.

(Paragraph Deleted)

§ 16.1.5 The Maryland General Assembly has enacted a law that prohibits a person who enters into a contract with the Washington County Board of Education from knowingly employing an individual to work at a school if the individual is a registered sex offender. It is your duty as a person who has or, who may have, a contract with the Washington County Board of Education to confirm whether an individual you plan to assign to work at a Washington County School(s) is a registered sex offender. A person who violates this law is guilty of a misdemeanor and or conviction is subject to imprisonment not exceeding five (5) years or a find not exceeding $5,000.00 or both.

In the event you assign an individual to work at a Washington County School and a claim or lawsuit is asserted against the Washington County Board of Education or any of its employees or agents as a result of such act or omission, you must indemnify and hold harmless the Washington County Board of Education and its employees and agents from any and all loses, expenses, litigation expenses, attorney’s fees, court costs, settlements, judgments or the like.

(Paragraph Deleted)

§16.1.6 Protection of Resident Workers Clause


User Notes:
The contractor shall comply with all federal, State and local laws, regulations and ordinances applicable to its activities and obligation under this contract. The Immigration & Nationality Act (INA) includes provisions addressing employment eligibility, employment verification, and nondiscrimination. Under the INA, employers may hire only persons who may legally work in the United States (i.e., citizens and nationals of the U.S.) and aliens authorized to work in the U.S. The employer must verify the identity and employment eligibility of anyone to be hired. The contractor shall establish appropriate procedures and controls so no services or products under the contract documents will be performed or manufactured by any worker who is not legally eligible to perform such services or employment. For more information, visit the U.S. Citizenship and Immigration Services website: www.uscis.gov.
SECTION 00 90 40

CHANGE ORDER PROPOSAL REQUEST FORM
Proposal Request Form

<table>
<thead>
<tr>
<th>Project Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
</tr>
<tr>
<td>Proposal Request #:</td>
</tr>
<tr>
<td>Prime Contractor:</td>
</tr>
<tr>
<td>Subcontractor:</td>
</tr>
<tr>
<td>Sub-Subcontractor:</td>
</tr>
</tbody>
</table>

Proposal Scope (Include a brief description of the work)

<table>
<thead>
<tr>
<th>A. Labor, Materials, Equipment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A.1 Direct Payroll - wages less burden (no fringes, insurances, taxes, etc)</td>
<td>$ -</td>
</tr>
<tr>
<td>A.2 Material Cost</td>
<td>$ -</td>
</tr>
<tr>
<td>A.3 Equipment Rental</td>
<td>$ -</td>
</tr>
<tr>
<td>A.4 Direct Equipment Cost</td>
<td>$ -</td>
</tr>
<tr>
<td><strong>Subtotal A - Labor, Materials, Equipment:</strong> $ -</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B. Overhead &amp; Profit</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Allowable Overhead &amp; Profit = (Subtotal A) x (% listed below)</td>
<td>$ -</td>
</tr>
<tr>
<td>15% $0.00 - $1,000</td>
<td>$ -</td>
</tr>
<tr>
<td>10% $1,001 - $5,000</td>
<td>$ -</td>
</tr>
<tr>
<td>7% $5,001 - $10,000</td>
<td>$ -</td>
</tr>
<tr>
<td>5% $10,001 - $25,000</td>
<td>$ -</td>
</tr>
<tr>
<td>over $25,000 negotiable not to exceed 5%</td>
<td>$ -</td>
</tr>
<tr>
<td><strong>Subtotal B - Overhead &amp; Profit:</strong> $ -</td>
<td></td>
</tr>
</tbody>
</table>

| C. Sales Tax (6% x (A.2 + A.3))  | $ - |

<table>
<thead>
<tr>
<th>D. Labor Burden</th>
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</tr>
</thead>
<tbody>
<tr>
<td>% x A.1</td>
<td>$ -</td>
</tr>
<tr>
<td>Must provide back-up to substantiate Labor Burden Rate</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>E. Subcontractor Cost</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Subcontractor Cost (Provide detailed breakdown on separate form)</td>
<td>$ -</td>
</tr>
<tr>
<td>Allowable Prime Contractor Mark-Up (5% of Subcontractor Cost)</td>
<td>$ -</td>
</tr>
<tr>
<td><strong>Subtotal E - Subcontractor Cost:</strong> $ -</td>
<td></td>
</tr>
</tbody>
</table>

| F. Subtotal (A+B+C+D+E)         | $ - |

| G. Bond (1% of F)              | $ - |

| H. TOTAL COST = F + G          | $ - |
SECTION 01 10 00 – SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 0 and Division 1 Specification Sections, apply to the Work of this Section.

1.2 SUMMARY
This Section includes the following:

1. Project Information
2. Schedule
3. Minority Business Enterprise
4. Contractor Responsibilities
5. State Sign
7. Cleaning and Protecting
8. Use of Premises and Temporary Facilities
9. Owner’s Occupancy Requirements
10. Work Restrictions
11. Specification Formats and Conventions
12. Work Scope

1.3 PROJECT INFORMATION

A. Water Line Replacement at Williamsport High School

B. Location: 5 South Clifton Drive
Williamsport, MD 21795

C. Owner: Board of Education of Washington County
10435 Downsville Pike
Hagerstown, Maryland 21740

D. Architect (Engineer): Kibart, Inc.
901 Dulaney Valley Road, Suite 301
Towson, MD 21204
E. Bid Number: 2020-32

F. Project Description:

Selective demolition and interior renovations to replace the existing galvanized domestic waterlines at Williamsport High School as described in the Contract Documents. There is an Add Alternate (Section 01150) to replace the incoming domestic water and fire lines, to install a new meter, vault, and all associated work as described.

Asbestos Containing Materials (ACMs) are not expected to be encountered in the Work as identified in the Contract Documents. If the Contractor finds what it believes to be an ACM material, he should notify the Architect and the Owner immediately.

1.4 SCHEDULE

A. The Contract Award is anticipated to occur in May 5, 2020 and the “Notice of Award” letter will be issued immediately afterward.

B. The Contractor shall provide all required submittals to the Owner and Architect within thirty (30) days after the “Notice of Award” is issued, or sooner if necessary to avoid delay of work.

C. The field work is to occur when school is not in session during Summer 2020. The tentative last day of school is June 15, 2020, pending weather days. The Field Start Date shall be two (2) business days after the last day of school.

D. The Total Project Substantial Completion Date is July 30, 2020. The Contractor is responsible for obtaining the Certificate of Occupancy and/or Final Permit Approval from the Town of Williamsport/Washington County Division of Construction on or before the Substantial Completion Date. The Final Project Completion Date is August 6, 2020.

1. ADD ALTERNATE 1. The Contractor shall submit an ADD Alternate #1 price that reflects replacing the incoming domestic water and fire lines, installing a new meter, vault, and all associated work as described Section 01150 (Alternate). This Alternate will not change the substantial completion date or the final completion date of the project.

E. The Contractor shall order materials as soon as submittals are approved by the Architect so that the materials are in possession upon commencement of field work. If any materials can be delivered prior to the last day of school, the Contractor is responsible for proper offsite storage.

F. The Contractor shall prepare and submit for the Owner’s and Architect’s approval a detailed Work Plan and Construction Schedule for the Work within ten (10) days after the “Notice of Award” is issued.
G. Contractor shall maintain, at all times, sufficient manpower levels to meet scheduling requirements and avoid delay to completion of work.

H. Liquidated Damages:

1. Total Project: Should the Work not be performed on or before the times stated, there will be deducted from the Contract Balance the sum of one thousand dollars ($1,000.00) per consecutive calendar days, as Liquidated Damages, but not as a penalty, for each day's delay after expiration of such period, and until final completion of the Work and its acceptance by the Owner. Plus the contractor will be held responsible for additional extended general conditions, consumables, and direct labor costs to the Third Party Inspectors and the Architect for work and re-inspections required until the “Contract Work” is determined to be acceptable by the Owner.

2. Completion of Punchlist Items: Should the Contractor fail to correct punchlist items within the 7 day period (beginning the date of the receipt of the list) there will be deducted from the Contract Balance the sum of fifty dollars ($50.00) per item per consecutive calendar days, as Liquidated Damages, but not as a penalty, for each day's delay after expiration of such period, and until final completion of the Work and its acceptance by the Owner.

1.5 MINORITY BUSINESS ENTERPRISE

A. This bid /project is subject to Minority Business Enterprise Procedures for State Funded Public School Construction Projects. Certified Minority Business Enterprises are encouraged to respond to this solicitation notice.

B. The contractor or supplier who provides materials, supplies, equipment and/or services for this construction project shall achieve the specific MBE goals established for this project:

**Overall goal of three percent (3%)**

All prime contractors, including certified MBE firms, when submitting bids as general or prime contractors, are required to attempt to achieve this goal from certified MBE firms.

C. The bidder is required to submit with its bid a completed Attachment A – Certified MBE Utilization and Fair Solicitation Affidavit and Attachment B – MBE Participation Schedule, as described in the bid solicitation documents.

D. Refer to Specification Section “00 43 39 – MBE Procedures” for further details.

E. **Notice to Bidders:** In accordance with COMAR, a new MBE liquidated damages provision has been added to the AIA Document A101 – 2007 Standard Form of Agreement Between Owner and Contractor, as amended by Washington County Board of Education (Article 8.7 in Specification Section 00 52 13).
1.6 CONTRACTOR RESPONSIBILITIES includes but is not limited to the following:

A. Shop Drawings, Product Data, and Samples.

B. Receive and unload products at site. Inspect for completeness and damage. Repair or replace items damaged after receipt.

C. Handle, store, install and finish products.

D. Pay legally required sales, consumer and use taxes.

E. When it is necessary to modify or interrupt existing utility service, the Contractor shall notify the Owner a minimum of 14 days prior to the planned work. Obtain the Owner’s written approval.

F. All Labor, Materials, Equipment, and Other facilities and services necessary for proper execution and completion of work. This includes but is not limited to multiple mobilizations and any escalation in material and fuel costs throughout the duration of the project.

G. Perform all work to comply with the rules and the regulations of the governing bodies and state and local laws.

H. The Owner shall obtain and pay for the Building Permit. The Contractor shall obtain and pay for all other permits and inspections required by law for the execution of this Work. The Contractor is responsible for coordinating scheduling all inspections with the Washington County Division of Construction and the State Fire Marshal as necessary. Provide all permits and inspection certificates to the Owner for their records.

J. All utility usage charges for permanent services during construction shall be by the Owner. All temporary services and usage charges required by the Contractor to perform their Work shall be arranged for and paid for by the Contractor.

K. Field Engineering:

1. Contractor shall be solely responsible for properly laying out the work and for all lines and measurements for all of the work executed under the Contract Documents.

2. All dimensions and grades shown on Drawings are believed to be correct, but the Contractor shall verify them at the site and notify the Owner and Architect in writing of any discrepancies found before proceeding with the work. In the absence of such notifications, extra work caused by discrepancies shall not entitle Contractor’s to additional compensation.

3. Working from lines and levels established by property survey, and as shown in relation to the work. Calculate and measure required dimensions as shown (within recognized tolerances if not otherwise indicated); do not scale drawings to determine dimensions.
Contractor shall be solely responsible for the proper location and level of all the work and for the maintenance of the reference lines and benchmark.

L. Work by Others:

1. The Owner will maintain use of its school building located on the premises.

2. The Owner will maintain the right to have additional trade contractors (at its discretion) working on site during the course of the project.

1.7 STATE SIGN

A. The Contractor shall provide one sign of construction, design, and content shown on the drawing included at the end of this section as EXHIBIT A. Background color shall be white, text shall be black, accent bands shall be yellow, and flag shall be red, yellow and black with white background. The lettering shall be Series C of Standard Alphabet for Highway Signs, Public Roads Administration, Federal Works Agency.

To obtain this construction sign that is compliant with the State of Maryland IAC Administrative Procedures Guide standard requirements, contact:

Sign Shop
Maryland Correctional Enterprises (MCE)
Email: cwbehnke@dpscs.state.md.us
Phone: 410-799-5102
Fax: 410-799-7911

C. Sign location shall be approved by the Owner and Architect.

D. No other signs are allowed without Owner permission except those required by law.

E. Submit shop drawing indicating content, layout, lettering, color, foundation, structure, sizes, and grades of members.

F. Sign Materials:
   2. Sign Surfaces: Exterior grade plywood with medium density overlay, minimum 3/4 inches thick, standard large sizes to minimize joints.
   3. Rough Hardware: Galvanized or brass.
   4. Paint and Primers: Exterior quality, two coats; sign background of color as selected. Adequate to withstand weathering, fading, and chipping for duration of construction.
   5. Contractor shall design sign and structure to withstand 60 miles/hr wind velocity.

G. Installation:
   1. Install project identification sign within 14 days after receipt of Notice to Proceed.
   2. Erect at designated location with high public visibility adjacent to main entrance to site.
   3. Erect supports and framing on secure foundation, rigidly braced and framed to resist wind loadings.
   4. Install sign surface plumb and level, with butt joints. Anchor securely.
   5. Paint exposed surfaces of sign, supports, and framing.
H. Maintenance: Maintain signs and supports clean, repair deterioration and damage.

I. Removal: When directed, remove signs, framing, supports, and foundations at completion of project and restore area.

1.8 GENERAL INSTALLATION PROVISIONS

A. Installer's Inspection of Conditions: Each Installer is required to inspect substrate to receive work, and conditions under which work will be performed, and to report, in writing to the Owner and the Architect, unsatisfactory conditions.

B. Manufacturer's Instructions: Where installations include manufactured products, comply with manufacturer's applicable instructions and recommendations for installation when they are more explicit or more stringent than the requirements indicated in Contract Documents.

C. Inspect each item of material or equipment immediately prior to installation, and reject damaged and defective items.

D. Provide attachment and connection devices and methods for securing work properly as it is installed; true to line and level, and within recognized industry tolerances if not otherwise indicated. Allow for expansions and movements. Provide uniform joint widths in exposed work, organized for best possible visual effect. Refer questionable visual-effect choices to the Architect for final decision.

E. Recheck measurements and dimensions of the work, as an integral step of starting each installation.

F. Install work during conditions of temperature, humidity, exposure, forecasted weather, and status of project completion which will ensure best possible results for each unit of work, in coordination with entire work.

G. Concealed Work: Coordinate enclosure of work, with the Owner and the Architect and with required inspections and tests, so as to minimize necessity of uncovering work for that purpose. Record exact locations of utility work on Record Drawings.

H. Mounting Heights: Where mounting heights are not indicated, mount individual units of work at industry-recognized standard mounting heights, or at heights specified by applicable codes, for applications indicated. Refer questionable mounting height choices to the Owner and Architect for final decision.

I. Enclose and conceal from view wiring, conduit, ducts, heat piping, sprinkler piping, water piping and other utility lines in habitable rooms and spaces, unless otherwise shown or specified.

J. Where not otherwise shown, match adjacent masonry, gypsum board or other finish construction to form the enclosing chase or furring.
K. Locate sprinkler heads, ceiling diffusers, lighting fixtures, grilles, speakers and other similar items in ceiling lay-in panels centered in both directions or to fill a full ceiling grid module.

L. Coordination: Do not fabricate or install ductwork, electric conduit, pull boxes, piping and other mechanical items above suspended ceilings until the coordination process has verified that there will be no interference and that the space for construction materials, equipment, fixtures and finishes specified by the design requirements can be maintained. Prior to fabrication and installation, promptly report to the Owner and Architect apparent interference or difficulties anticipated.

1.9 CLEANING AND PROTECTION:

A. During handling and installation of work at project site, clean and protect work in progress and adjoining work on a basis of perpetual maintenance. Apply suitable protective covering on newly installed work where reasonably required to ensure work is free from damage or deterioration at time of substantial completion; otherwise, clean and perform maintenance on newly installed work as frequently as necessary through remainder of construction period.

B. Limiting Exposure of Work: To extent possible through reasonable control and protection methods, supervise performance of work in a manner and by means which will ensure that none of the work, whether completed or in progress, will be subjected to harmful, dangerous, damaging, or otherwise deleterious exposures during construction period. Such exposures include where applicable (but not by way of limitation) static loading, dynamic loading, internal pressures, external pressures, high or low temperatures, thermal shock, high or low humidity, air contamination or pollution, water, ice, solvents, chemicals, light, radiation, puncture, abrasion, heavy traffic, soiling, bacteria, insect infestation, combustion, electrical current, high speed operation, improper lubrication, unusual wear, misuse, incompatible interface, destructive testing, misalignment, excessive weathering, unprotected storage, improper shipping/handling, theft and vandalism.

C. Construct work in accordance with project schedule; coordinate the schedule and operations with the Owner.

1.10 USE OF PREMISES AND TEMPORARY FACILITIES

General: During the construction period, the Contractor shall have limited use of the premises. Use of any areas other than those in which work is done is prohibited.

A. Use of Site: Confine construction operations to areas within the limits indicated on the Contract Documents. Do not disturb the building and property beyond areas in which the Work is indicated.
B. Owner Occupancy: Allow for Owner occupancy of facility and use by the Public during the entire construction period for the portions of the facility not being disturbed by construction. Maintain code compliant egress in Owner occupied spaces.

C. Contractor has access to schools’ water supply for use during construction.

D. Temporary toilet facilities are required for this project; as school restroom facilities will not be available for use by the contractor during the course of this work.

E. Contractor use of the school's phone or internet services is not permitted.

F. Parking: During construction operations, contractor parking is limited to the discretion of the Owner.

G. Contractor field office trailer(s) will not be permitted on school property for this project.

H. Driveways and Entrances: Keep driveways, loading areas, and entrances serving the premises clear and available to Owner, Owner’s employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials without obtaining prior written authorization from the Owner.

For driveways, loading areas, and entrance areas that are within the limit of disturbance as designated by the work (i.e. Add Alternate #1), the Contractor shall provide a schedule to the Owner identifying when work in this area will start, and when it will be completed. The area may not be unavailable for use by the Owner for more than two (2) consecutive weeks.

1. Schedule and coordinate deliveries to minimize use of driveways and entrances.

2. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

3. Lay down and staging areas will be established jointly by the Contractor and the Owner within the Construction Limits of Disturbance.

1.11 OWNER’S OCCUPANCY REQUIREMENTS

A. Full Owner Occupancy: Owner will occupy the building and property for the duration of the project. Cooperate with the Owner during the construction operations to minimize conflicts and facilitate Owner and Public usage. Perform the Work so as not to interfere with the Public and the Owner’s day-to-day operations. Maintain existing entrances and exits. Provide not less than 14 days' notice to the Owner of activities that will affect the Public and the Owner's operations.

B. Occupancy of Completed Areas of Construction: Owner reserves the right to occupy and to place and install equipment in completed areas before Substantial Completion, provided such
occupancy does not interfere with completion of the Work. Such placement of equipment and partial occupancy shall not constitute acceptance of the total Work.

1. The Architect will prepare a Punchlist for each specific portion or area(s) of the Work to be occupied before Owner occupancy.

2. The Contractor is to obtain approval from Authorities Having Jurisdiction before Owner occupancy of completed spaces.

3. Prior to Owner occupancy, all work shall be fully operational, and required tests and inspections shall be successfully completed. Upon completion of the project, the Owner and Architect will issue a Certificate of Substantial Completion indicating acceptance.

4. Upon Project Substantial Completion, Owner will assume responsibility for maintenance and custodial service for occupied portions of work.

1.12 WORK RESTRICTIONS

A. For this project, the Contractor will have access to the school Monday-Friday from 6am-4pm. If the Contractor chooses to work Saturdays, Sundays, or when schools are closed, the Contractor must request written approval from WCPS at least four (4) days in advance of needing access to the school and must pay the $25.00 per hour rate at a minimum of four (4) hours for custodial coverage on these days. Work requiring inspections cannot be completed on the weekend.

B. Contractor shall prioritize the safety of students and staff while working in the occupied building and shall take all necessary precautions to protect the wellbeing of all occupants at all times.

C. The Contractor is responsible for conducting construction activities so as to minimize impact to spaces outside of the project area and so as to avoid any disruption to school activities.

D. The Contractor is responsible for controlling the containment of dust and debris for the full duration of the project.

E. All work to comply with the Noise Restrictions of the local governing authority.

F. All workers on site are to wear hardhats, clean clothes (shirts & pants – no shorts), protective eyeglasses and protective footwear, and visible identification badges displayed at all times. The Contractor is responsible for providing identification badges for all workers.

G. Do not interrupt existing utilities (other than the water service) serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify the Owner not less than 14 days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without receiving the Owner’s written permission.

1.13 SPECIFICATION FORMATS AND CONVENTIONS

A. Section Identification: The Specifications use Section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete because all available Section numbers are not used. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of Sections in the Contract Documents.

B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

C. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.

1. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by each Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by each Contractor or by others when so noted.

2. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

D. Definitions

1. The terms “Architect”, “Engineer”, “Architect/Engineer" and “A/E” are used interchangeably throughout the specifications.

The terms “Owner”, “Washington County Public Schools” and “WCPS” and the “Board of Education” and the “BOE” are used interchangeably throughout the specifications.

1.14 WORK SCOPE

The scope of work includes but is not limited to providing all labor, equipment, materials, and incidentals to complete all Work in accordance with the specifications, drawings and applicable codes. All Work is to be performed as shown on the Contract Drawings and Specifications in the Project Manual.

SUMMARY OF WORK

BID 2020-32 WATER LINE REPLACEMENT AT WILLIAMSPORT HIGH SCHOOL
WASHINGTON COUNTY, MARYLAND
In addition to the above, the scope includes but is not limited to the Division 0 Procurement and Contract Requirements, and Division 1 General Requirements of the Project Manual.

THE SCOPE OF WORK IS TO INCLUDE, but is not limited to, the following items:

1. Contractor shall provide all required submittals to the Architect within thirty (30) days after issuance of “Notice of Award”/“Notice to Proceed”, or sooner if necessary to avoid delay of work.

2. Contractor shall be required to conduct his activities in a safe manner and shall be responsible for observing the safety regulations of MOSH, OSHA, and local life safety agencies. Contractor to provide all OSHA specified protection required, including fall protection.

3. Contractor shall maintain at all times sufficient manpower levels to meet scheduling requirements and avoid delay to completion of work.

4. Contractor shall provide as-built drawings and warranty of all work under this Contract. Provide copies of Operation and Maintenance Manuals in the format and quantity indicated in the documents. Provide instruction of Owner's personnel on maintenance of equipment and material installed by this Contract.

5. Contractor must be on site to receive and unload construction material deliveries. WCPS staff is not responsible for receiving any deliveries for this construction project. Contractor is responsible for own lifting and hoisting.

6. Contractor shall protect all existing finishes when receiving deliveries and removing trash through areas of the facility outside the limits of disturbance. Contractor shall protect all finished areas of work adjacent to area of new work as construction progresses within the project limits.

7. Provide dumpsters or trucking required to clean and remove daily from site all excess material and debris connected with this work. Should the Contractor’s cleanup be unsatisfactory, the Owner shall perform the work at the Contractor’s expense. If dumpsters are utilized, the Contractor shall coordinate with the Owner to identify a mutually agreeable location prior to commencement of work. The Contractor is responsible for preventing damage to property, such as by setting the dumpsters on plywood in paved areas, and is responsible for repairing any damage occurring as result of the dumpsters.

8. The Owner will clear furniture surfaces and remove loose furniture in the project area prior to demolition. The Contractor shall protect bulk furniture and built-ins within and adjacent to the project area by covering them with plastic sheets throughout demolition and construction. Once renovations are complete, the Contractor is responsible for removing the plastic sheets and thoroughly vacuuming and cleaning the entire project area.
9. Contractor shall provide final cleaning of all new and existing surfaces within the project limits. Include cleaning all glazing. Including wet mop of floor tile only; the Owner will wax the floors. Prior to final cleaning, Contractor shall remove all miscellaneous labels, stickers, and shipping protection from all hardware and other finish products. Do NOT remove any fire rating labels.

10. Prior to the installation of new flooring, the Contractor is responsible for properly preparing the existing concrete floor substrate and for applying leveling and patching compounds for a smooth and level floor finish. Contractor is responsible for grinding down existing concrete as necessary for a smooth and level floor finish. Contractor shall provide new flooring to match, and properly transition to, existing adjacent flooring.

11. Contractor shall patch and refinish existing walls and ceilings that are adjacent to, and affected by, work performed under this contract as necessary for a finished product in exposed areas. Contractor shall patch existing masonry walls and drywall partitions as necessary to maintain wall rating at the top of walls and at through-wall penetrations above the ceiling.

12. Contractor shall provide all priming, block filling, and finish painting of all drywall, CMU, door frames, and other interior surfaces as required and as indicated in the Contract Documents. Contractor is responsible for all required surface preparation prior to application of finishes, including, but not limited to scraping, sanding, puttying, etc. Provide interior caulking between surfaces of dissimilar materials such as at hollow metal frames in drywall or block walls, CMU block abutting drywall construction, interior joints of painted wood surfaces, etc.

13. Contractor shall turn over all keys, tagged and marked in an acceptable manner to the Owner.

14. Project Administration:
   a. The Contractor is responsible for project budget, project construction schedule, project coordination, project administration and overall site management, including safety and security.
   b. The Contractor shall be responsible for coordination of demolition and new construction work between various trades.
   c. Contractor shall comply with the directives of the Owner, and respond to the comments from the Architect for this Project.

15. Contractor is responsible for testing costs resulting from negligence, poor workmanship, or failure of work to meet the requirement of the documents. Any work determined to have been performed in a negligent manner by the Contractor shall be corrected by the Contractor at no additional cost to the Owner.

16. Contractor is responsible for taking all precautions necessary to ensure all existing power and data lines and connections remain intact throughout construction. The Contractor is responsible for verifying that all power and data lines and connections and devices are in
operating order upon completion of the project and if not, the Contractor is responsible for repair and/or replacement.

END OF SECTION
Larry Hogan, Governor  
Boyd Rutherford, Lt. Governor  

Building Bright  
Futures in Maryland  

The State of Maryland and the (Name of County) Board of Education are:  
(Name of Project)  

at the  
(Name of School)  

Public School Construction Program  

Architect: (Name of Architect)  
Contractor: (Name of Contractor)  

The Maryland General Assembly  
Adrienne A. Jones, Speaker of the House  
Bill Ferguson, President of the Senate  

Board of Public Works  
Larry Hogan, Governor  
Peter Franchot, Comptroller  
Nancy K. Kopp, Treasurer
SECTION 01150 – ALTERNATES

PART 1   GENERAL

1.1 SECTION INCLUDES
   A. Submission procedures.
   B. Documentation of changes to Contract Sum/Price and Contract Time.

1.2 RELATED SECTIONS
   A. Documents Owner/Contractor Agreement Form: Incorporating monetary value of accepted Alternates.
   B. Section 00 21 13 - Instructions to Bidders: Requirements for Alternates.
   C. Section 00 22 00 - Form of Proposal: Cost of Alternates.
   D. Section 01 10 00 – Summary of Work.

1.3 REQUIREMENTS
   A. Submit Alternates with full description of the proposed Alternate and the affect on adjacent or related components.
   B. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner’s option. Accepted Alternates will be identified in the Owner-Contractor Agreement.
   C. Coordinate related work and modify surrounding work to integrate the Work of each Alternate.

1.4 SELECTION AND AWARD OF ALTERNATIVES
   A. Indicate variation of Bid Price for Alternates described below and list in Bid Form Document or any supplement to it, which requests a “difference” in Bid Price by adding to the base bid price.
   B. Bid will be evaluated on base bid and accepted alternates determined by the Owner.

1.5 SCHEDULE OF ALTERNATES
   A. ADD ALTERNATE NO. 1: REPLACEMENT OF INCOMING DOMESTIC AND FIRE LINES
      1. In accordance with the drawings and specifications, Cost to replace incoming domestic and fire lines, install meter and vault and all associated work.

PART 2   PRODUCTS   Not Used

PART 3   EXECUTION Not Used

END OF SECTION
SECTION 01250 - CONTRACT MODIFICATION PROCEDURES

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Administrative and procedural requirements for handling and processing modifications to the Contract.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions.

1.3 RELATED SECTIONS

A. Division 1 Specification Sections.

1.4 SUBMITTALS

A. Submit name and address of Contractor’s representative authorized to receive and accept changes and responsible for informing others in Contractor’s employment of changes to the Work at contract signing.

B. Change Order Form: Submit Change Orders on forms provided by the County.

C. Procedure for submitting Proposed Change Order (PCO) and Approved Change Order (ACO) comply with requirements of this Section and Owner’s written instructions.

D. Request for Proposal (RFP):

1. Architect or Owner may initiate an RFP that may or may not affect Contract Documents, Contract Sum, or Contract Duration.

2. An RFP may be requested in instances where the Owner wishes to price Work before deciding whether or not to proceed.

3. Within ten (10) days following receipt of an RFP, Contractor will price the Work and forward a PCO to Architect and Owner for review and evaluation.

4. Clarifications, Minor Modifications, and Supplements shall be assigned consecutive numbers by the Architect commencing with number 001.
   a. For example: PCO-001, etc.

1.5 DOCUMENTATION OF CHANGE IN CONTRACT SUM AND/OR CONTRACT TIME

A. Maintain detailed records of Work done on a Time and Material (T&M), or Force Account basis.

B. Provide full information required for evaluation of proposed changes, and to substantiate costs of changes in the Work.

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

D. Provide the following additional data to support computations at time of submission:
1. Quantities of products, labor, material, and equipment.
2. Taxes, insurance, and bonds.
3. Overhead and profit.
5. Credit for deletions from Contract, similarly documented.

E. Support each claim for additional costs, and for Work done on a Time and Material (T&M) Force Account basis, with additional information:
   1. Origin and date of claim.
   2. Dates and times Work was performed, and by whom.
   3. Time records and wage rates paid.
   4. Invoices and receipts for products, equipment, and subcontracts, similarly documented.

1.6 PRELIMINARY PROCEDURES

A. Owner or Architect may submit a Request for Proposal (RFP) to Contractor that includes:
   1. Detailed description of change with supplementary or revised Drawings and Specifications.
   2. The projected time for executing the change, with a stipulation of any overtime Work required.
   3. The period of time during which requested price will be considered valid.

B. Contractor may initiate a PCO as a Request for Substitution by submittal of a written request to Architect describing proposed Change with a statement of reason for Change, and effect on Contract Sum and Contract Time with full documentation and a statement of effect on Work of separate contractors.

1.7 CONSTRUCTION CHANGE DIRECTIVE (CCD)

A. Architect may issue a CCD, signed by Owner, instructing Contractor to proceed with a Change in Work, for subsequent inclusion in Approved Change Order.

B. CCD will describe changes in the Work, and will designate method of determining any change in Contract Sum or Contract Time.

C. Promptly execute the change in Work.

1.8 EXECUTION OF CHANGE ORDERS

A. Architect and Owner will issue Change Orders for signatures of parties as provided in General Conditions of the Contract.

1.9 CORRELATION OF CONTRACTOR SUBMITTALS

A. Within seven days of receipt of an ACO, revise Schedule of Values and Application for Payment forms to record each Authorized Change Order as separate line item and adjust Contract Sum as shown on Change Order and resubmit to Architect and Owner.
WILLIAMSPORT HIGH SCHOOL – WATER LINE REPLACEMENT

B. Within seven days of receipt of an ACO, revise Progress Schedules to reflect any change in Contract Time for items of Work affected by change, and resubmit to Architect and Owner.

C. Within seven days of receipt on an ACO enter changes in Project Record Documents.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01250
SECTION 01252 - REQUEST FOR INTERPRETATION (RFI)

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Administrative and procedural requirements for handling and processing Request for Interpretation of the Contract Documents.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions.

1.3 RELATED SECTIONS

A. Division 1 Specification Sections.

1.4 DEFINITIONS


1.5 REQUEST FOR INTERPRETATION

A. Proper RFI: An RFI is Proper when prepared by Contractor in accordance with requirements of this Section.

1. It is the responsibility of the Contractor to make a reasonable and detailed review of the Contract Documents prior to the issuance of an RFI to the Architect to determine that requested Information is not readily inferable from the Contract Documents.

2. When Contractor believes an RFI may result in a change in Contract Sum, Contract Time, or both, do not submit an RFI.

a. Submit a Request for Proposal (RFP) in accordance with Section 01250, “Contract Modification Procedures.”

B. Improper RFI: RFI not prepared in accordance with requirements of this Section.

1. RFI that requests an interpretation of Contract Documents that could have been reasonably inferred from the Contract Documents.

2. An Improper RFI may be subject to reimbursable costs and will be returned to Contractor without action.

a. Architect will notify Contractor within three (3) days following receipt when an RFI is Improper.

3. The decision of the Architect in the determination of an Improper RFI is final and binding.

C. Reasons an RFI may be determined to be Improper include, but are not limited to, the following:

1. Request for substitution of product, performance or standard of quality.
2. Request for a change to the Contract Documents to respond to job site conditions or activities.
3. Request when response may result in adjustment of Contract Sum.
4. Request when response may result in adjustment of Contract Time.
5. Request for a clarification of a required Submittal or Shop Drawing, either before or after such Submittal review by the Architect.
6. Handwritten RFI.
7. Request approval of submittals.
8. Request approval of substitutions.
9. Request coordination of various materials and systems indicated on Contract Documents with field conditions and with each other.
10. Request submitted by someone other than Contractor.

D. Proper Architect prepared RFI Response:
1. Response that is a Clarification and/or a Minor Modification in the Work in accordance with Section 01250, “Contract Modification Procedures.”

PART 2 - PRODUCTS

2.1 REQUEST FOR INTERPRETATION FORM
A. Submit typewritten RFI on form similar to the form included at end of this Section. Handwritten RFI forms are not acceptable and are an Improper RFI.
1. Electronic copy of the sample RFI form will be provided to Contractor upon written request.

2.2 REQUEST FOR INTERPRETATION LOG
A. Maintain current and accurate Request for Interpretation Log for duration of Contract as follows:
1. List each RFI issued.
2. Include RFI number, date issued, subject, number of attachments issued and received (if any), and status as follows:
   a. Include date received.
   b. Awaiting response from Architect.
   c. Additional information required.
   d. Contractor to provide additional information to Architect.
3. Do not list Improper RFI’s returned to Contractor.
4. Submit current copy of RFI Log to Architect at Owner’s Progress Meeting.

PART 3 - EXECUTION

3.1 PREPARATION, SUBMITTAL, AND REVIEW PROCEDURE
A. Preparation: Complete form. Provide information in all boxes above dashed line.
1. Number each RFI sequentially.
2. Do not include subcontractor’s RFI number on RFI form.
3. Each attachment page to an RFI shall bear RFI number, date, and Contractor’s signature.
   a. Number each attachment page consecutively.
4. Prepare and submit a Proper RFI on behalf of subcontractors, material suppliers, fabricators and other Contractor consultants.
5. Prepare a separate form for each subject.
6. Do not submit multiple-subject RFI’s.

B. Submittal: Submit signed original RFI by U.S. Postal Service or by overnight delivery service.
   1. Electronic submittal of RFI by “e-mail” or “facsimile” is acceptable, but date signed originals are received by the Architect shall constitute the actual submittal date.
   2. Submit original completed RFI form including any attachments.

C. Review: Allow seven (7) days, from time of receipt, to review and respond. Plan and schedule Work accordingly. No extension of the Contract Time will be authorized because of failure to provide RFI’s in advance of the Work to permit processing.
   1. Additional time may be required to review and respond to an RFI.
   2. Architect will advise Contractor within three (3) days following receipt of an RFI when an RFI will require more than seven (7) days to provide a response.
   3. An RFI may require additional review and response time for the following reasons:
      a. Where RFI requires multiple discipline review, coordination and response.
      b. When RFI is complicated and requires review and response from an Owner, Using Agency, and authority having jurisdiction, product vendor, or another entity other than the A/E.
      c. Concurrent review of multiple RFI’s.
      d. Additional information is required from the Contractor in order to review and respond to an RFI.
      e. Receipt of Improper RFI.

END OF SECTION 01252
REQUEST FOR INTERPRETATION

TO: Kibart, Inc. RFI No: 
Attention: John McClain

PROJECT NAME: WILLIAMSPORT HIGH SCHOOL – WATER LINE REPLACEMENT

PROJECT LOCATION: 

SUBJECT: 

SPEC. SECTION: DRAWING NO: 

REQUEST:

PROPOSED SOLUTION:

DATE RESPONSE REQUIRED: 

RESPONSE:

BY: 
DATE: 

BY: 
DATE: 
SECTION 01290 - APPLICATION FOR PAYMENT

PART 1 - GENERAL

1.1 SECTION INCLUDES
   A. Procedures for preparation and submittal of Applications for Payment.

1.2 RELATED DOCUMENTS
   A. Drawings and general provisions of Contract, including General and Supplementary Conditions.

1.3 RELATED SECTIONS
   A. Division 1 Specification Sections.

1.4 FORMAT
   A. Application and Certification for Payment.

   1. Payment-application shall follow Washington County Public Schools format or utilize AIA Document G702 & G703 and include IAC/PSCP Form 306.4.
   2. Application Preparation: Complete every entry on the form. Include notarization and execution by a person authorized to sign legal documents on behalf of the Contractor. The Architect shall return incomplete applications without action.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PREPARATION OF APPLICATIONS
   A. Type required information on form using format required.
   B. Do not prepare hand written application.
   C. Execute certification by signature of authorized officer of the firm.
   D. Use data on approved Schedule of Values.
   E. Provide dollar value in each column for each line item for portion of work performed and for stored products.
   F. List each authorized Change Order as an extension on continuation sheet, listing Change Order number and dollar amount as for an original item of Work.
   G. Prepare Application for Final Payment as specified in Section 01770 – “Contract Closeout Procedures.”

3.2 SUBMITTAL PROCEDURES
   A. Following review and acceptance by County’s Field Project Manager, submit three (3) signed and sealed originals of each Application for Payment with IAC/PSCP Form 306.4
(MBE Attachment G).

B. Submit under transmittal letter specified in Section 01330 – “Submittal Procedures.”

3.3 SUBSTANTIATING DATA

A. When Architect or Owner requires substantiating information, submit data to Architect justifying line item amounts in question.

B. Provide one copy of data with cover letter for each copy of submittal.

C. Show application number and date, and line item number and description.

END OF SECTION 01290
SECTION 01292 - SCHEDULE OF VALUES

PART 1 - GENERAL

1.1 SECTION INCLUDES
   A. Administrative procedures and requirements for preparation and submittal of Schedule of Values.

1.2 RELATED DOCUMENTS
   A. Drawings and general provisions of Contract, including General and Supplementary Conditions.

1.3 RELATED SECTIONS
   A. Division 1 Specification Sections.

1.4 FORMAT
   A. Application and Certification for Payment
      1. Payment-application shall follow Washington County Public Schools format or utilize AIA Document G702 & G703 and include IAC/PSCP Form 306.4.
      2. Application Preparation: Complete every entry on the form. Include notarization and execution by a person authorized to sign legal documents on behalf of the Contractor. The Architect shall return incomplete applications without action.

1.5 CONTENT
   A. List installed value of each major item of Work and each subcontracted item of Work as a separate line item to serve as a qualified document to assist in the determination for computing values for Progress Payments. Identify each line item by number and title of major Specifications Section. Entries shall match data on Schedule of Values.
   B. Round off values to nearest dollar.
   C. Indicate material cost separate from related labor cost.
   D. For each major subcontract, list products and operations of that subcontract as separate line items.
   E. Include Work Allowances as individual line items.
   F. Include amounts of Change Orders and Construction Change Directives issued prior to last day of construction period covered by application as individual line items.
   G. Component listings shall each include a directly proportional amount of Contractor's overhead and profit.
   H. For items on which payments will be requested for stored products, list sub-values for cost of stored products, with taxes listed separately.
   I. The sum of values listed shall equal total Contract Sum.
J. Include the following Schedule of Values items as determined by the Owner for the Work:

1. Record Documents.
2. Operation and Maintenance Manuals.
3. Operation and Maintenance Training.
5. Field Measurement/Layout.
6. Clean-up.
7. Bond and Insurance.

1.6 SUBMITTAL

A. Submit 1 copy of the Schedule of Values 15 calendar days prior to first Application for Payment to the Owner's Field Project Manager and 2 copies to the Architect.

B. Form and content shall be acceptable to the Owner's Field Project Manager.

C. Transmit under transmittal letter.

D. Identify Project by title and number; identify Contract by number.

1.7 SUBSTANTIATING DATA

A. When Washington County Public School's Field Project Manager and/or Architect requires substantiating information, submit data justifying line item amounts in question within three (3) days of the request.

B. Provide one copy of data with cover letter for each copy of Application.

C. Show Application number and date, and line item by number and description.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01292
SECTION 01310 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Administrative and supervisory requirements necessary for coordinating construction operations including, but not limited to:

1. General project coordination procedures.
2. Conservation.
3. Coordination Drawings.
4. Administrative and supervisory personnel.
5. Cleaning and protection.
6. Commissioning.

1.3 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions.

1.4 RELATED SECTIONS

A. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 0 – Owner’s Requirements
2. General Division 1 Specifications: Execution Requirements for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control joints.
3. Section 01312 – “Project Meetings.”
4. Section 01330 – “Submittal Procedures.”
6. Section 01781 – “Project Record Documents.”
7. Section 01783 – “Operation and Maintenance Data.”
8. Section 01785 – “Warranties and Bonds.”

1.5 COORDINATION

a. Contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Contractor shall coordinate its operations with all other operations, included in different Sections that depend on each other for proper installation, connection, and operation.

b. Coordinate construction operations included in various Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, including different Sections that depend on each other for proper installation, connection, and operation.
1. Schedule construction operations in sequence required to obtain best results where installation of one part of Work depends on installation of other components, before or after its own installation.

2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.

3. Coordinate scheduling, submittals, and Work of various Sections to assure efficient and orderly sequence of installation of interdependent elements.

4. Make adequate provisions to accommodate items scheduled for later installation.

c. Prepare memoranda for distribution to each party involved outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.

1. Prepare similar memoranda for Owner and separate subcontractors where coordination of their work is required.

d. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of Work. Such administrative activities include, but are not limited to:

1. Preparation of Contractor’s Construction Schedule.
2. Preparation of Schedule of Values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Pre-installation conferences.
7. Project Record Documents.
8. Project closeout activities.

1.6 Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

A. Salvage materials and equipment involved in performance of, but not actually incorporated in, Work.

B. Equipment: Verify characteristics of elements of interrelated operating equipment are compatible; coordinate work of various Sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

C. Spaces: Coordinate space requirements and installation of mechanical, electrical, and other Work indicated diagrammatically.

D. Resolve routing and space allocations before Work is started in order to prevent interference and loss of time.

1. Assist in apportioning space conditions to make satisfactory adjustments where installed work in close proximity to work of other contractors will interfere with other work.

E. Follow routing indicated for pipes, ducts, and conduits as closely as practicable. Make runs parallel with lines of building.

F. Adjust location of pipes, equipment, fixtures, and the like, to avoid encountered and anticipated interference.
1. Determine exact route and location of each pipe and piece of equipment prior to installation.
2. Make offsets, transitions and changes in direction of pipes as required to maintain proper headroom and pitch of sloping lines. Provide air vents and drains as required to effect offsets, transitions, and changes in direction.

G. Work Under Separate Contracts: Ascertain nature and extent of work under separate contracts. Coordinate work under separate contracts and cooperate with other Contractors to minimize interference.

1. In event Work under this Contract obstructs or impedes passage of work of others, remove such obstructions and impediments expeditiously and make provisions to prevent delay and provide access for others.

1.7 CONTRACTOR'S COORDINATION

A. General: Comply with requirements of Section 01330 – “Submittal Procedures.”

B. Coordination Drawings: Prepare Coordination Drawings for efficient installation of different components and coordinate installation of products and materials fabricated by separate entities.

C. Requirement for submittal of coordination drawings includes, but is not limited to:

1. Submit coordination drawings in compliance with requirements of the Contract Documents and in compliance with Section 01330 – “Submittal Procedures”, and as directed by the Architect and/or Owner.
2. Coordinate openings and locations for the work between various Sections to include, but not necessarily limited to the following:
   a. Plumbing
   b. Electrical
   c. Mechanical.

D. Staff Names: Fourteen days following Notice-To-Proceed submit list of Contractor's principal staff assignments, including Superintendent and other personnel in attendance at Site.

1. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers.
2. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
3. Post copies of list in Project meeting room, temporary field office, and by each temporary telephone.

1.8 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

A. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.

B. Include special personnel required for coordination of operations with other contractors.

1.9 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.

B. Pre-installation Conferences: Conduct a pre-installation conference at Project site before each construction activity that requires coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.

2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
   b. Options.
   c. Related Change Orders.
   d. Purchases.
   e. Deliveries.
   f. Submittals.
   g. Review of mockups.
   h. Possible conflicts.
   i. Compatibility problems.
   j. Time schedules.
   k. Weather limitations.
   l. Manufacturer's written recommendations.
   m. Warranty requirements.
   n. Compatibility of materials.
   o. Acceptability of substrates.
   p. Temporary facilities and controls.
   q. Space and access limitations.
   r. Regulations of authorities having jurisdiction.
   s. Testing and inspecting requirements.
   t. Required performance results.
   u. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements.

4. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

C. Coordination Meetings: Conduct Project coordination meetings at weekly intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and pre-installation conferences.

1. Attendees: In addition to representatives of Owner, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
   a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to Combined Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved in...
do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

b. Schedule Updating: Revise Combined Contractor's Construction Schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.

c. Review present and future needs of each contractor present, including the following:
   1) Interface requirements.
   2) Sequence of operations.
   3) Status of submittals.
   4) Deliveries.
   5) Off-site fabrication.
   6) Access.
   7) Site utilization.
   8) Temporary facilities and controls.
   9) Work hours.
   10) Hazards and risks.
   11) Progress cleaning.
   12) Quality and work standards.
   13) Change Orders.

3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01310
SECTION 01311 - PRECONSTRUCTION CONFERENCES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Contractor administrative and participatory Pre-construction Conference requirements.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions.

1.3 RELATED SECTIONS

A. Division 1 Specification Sections.

1.4 PRECONSTRUCTION CONFERENCE

A. Owner will schedule conference within 15 days after Notice To Proceed.

B. Attendance: Owner, Owner’s Field Project Manager, Architect, Contractor, Contractor’s Construction, and Contractor’s Specialty Subcontractors.

1. Contractor’s Specialty Subcontractors including:
   a. Air Quality Monitoring and Testing Subcontractor.
   b. Sitework Subcontractor.
   c. Concrete and Masonry Subcontractor.
   d. Mechanical Subcontractor.
   e. Fire Protection Subcontractor.
   f. Electrical Subcontractor.
   g. Hazmat Abatement Subcontractor.
   h. Landscaping Subcontractor.
   i. Other contractors.

C. Agenda:

1. Contractor Submittal of list of all subcontractors, all long lead items, list of equipment and materials as specified, schedule of values, progress schedule, and shop drawing submittal schedule.

2. Contractor Submittal of designated and responsible personnel with emergency contact telephone numbers (three persons minimum).

3. Review of project procedures and processing Owner Submittal of procedures and processing of field decisions, clarifications, submittals, substitution requests, applications for payments, proposal requests, change orders, and Contract closeout procedures.

4. Scheduling and Schedules.

5. Use of premises by Owner and Contractor.

6. Owner’s requirements.

7. Construction facilities and controls provided by Owner.

8. Temporary utilities.


10. Testing services and procedures for testing.
11. Procedures for maintaining record documents.
12. Requirements for startup of equipment.
13. Applications for Payment.
15. Safety and housekeeping procedures.
16. Staging Areas.
17. Contractor entrances and exits.
18. Contractor’s interface with staff and students.
19. Inspection and acceptance of utility systems and equipment placed into service during construction period.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PRECONSTRUCTION CONFERENCE DOCUMENTATION

A. At the Owner’s discretion, the Owner may record the proceedings of the Preconstruction Conference in either audio or video format.

B. If recorded, the recording is made part of the Owner’s official documents of the Construction Administration Phase of the project.

C. Within seven days of the Preconstruction Conference, the Architect shall issue Preconstruction Conference Meeting Minutes to the Owner and Contractor.

END OF SECTION 01311
SECTION 01312 - PROJECT MEETINGS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Scheduling and administration requirements for Owner’s Progress Meeting.
B. Scheduling and administration requirements for Contractor’s Progress and Site Coordination Meeting.
C. Scheduling and administrative requirements for Contractor’s Pre-installation Conferences.
D. Administrative requirements for Contractor’s Daily Construction Progress Reports.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions.

1.3 RELATED SECTIONS

A. Division 1 Specification Sections.

1.4 OWNER’S PROGRESS MEETING

A. Owner’s Progress Meeting will be held on a mutually agreed upon weekday of every other week for duration of Contract.
B. Owner’s Progress Meeting will be held in Contractor’s on-site conference room.
C. The following individuals and agencies shall attend each Owner’s Progress Meeting:
   1. Owner and/or the Owner’s Field Project Manager.
   2. Architect and it’s consultants.
   3. Contractor’s Project Manager.
   4. Contractor’s Field Engineer.
   5. Contractor’s Air Quality Testing and Management contractor, when requested.
   6. Other subcontractors to the Contractor, when required for discussion of progress, or when requested.

D. Agenda:
   1. Review of minutes of previous meeting.
   2. Review of Work progress and on-site security.
   4. Field observations, problems, and decisions.
   5. Review of Submittals, Schedule and status of Submittals.
   6. Review of off-site fabrication and delivery schedules.
   7. Maintenance of progress schedule.
   9. Corrective measures to regain projected schedules.
   10. Planned progress during succeeding work period.
11. Planned or requested interruptions to utilities or services, or to Owner’s use of the building.
12. Coordination of projected progress.
14. Effect of proposed changes on progress schedule and coordination.
15. Other business relating to Work.

E. Contractor Prepared Documents:

1. The Contractor’s Project Manager shall provide documents containing representative information that Contractor shall prepare and distribute to each attendee at the start of each Owner’s Progress Meeting, to include:

   a. Prior Owner’s Progress Meeting minutes prepared by Architect.
   b. Schedule Narrative:
      1) Description of work by trade or system.
      1. Describe past two-week’s effort and next four weeks effort.
      2. Indicate where four-week scheduled tasks were not accomplished and report on methods to be employed by Contractor to recover schedule slippage.
      3. Narrative to include CPM Schedule task identifier, task description, task duration and percent complete (planned and actual) per week.
   c. Look-ahead Schedule: Two-week Look-Back and four-week Look-Ahead Gantt Bar Chart developed from Owner-approved CPM Construction Schedule.
   d. Request for Interpretation Log (RFI).
   e. Approved Change Order Log (ACO).
   f. Shop Drawing and Product Submittal Log.

1.5 CONTRACTOR’S COORDINATION MEETING

A. On-site Contractor Coordination Meeting will be held every other week for duration of Contract.

B. Contractor’s Coordination Meeting will be held on-site.

C. The following individuals and agencies will attend each Contractor Coordination Meeting:

1. Owner and/or Owner’s Field Project Manager.
2. Contractor’s Project Manager.
3. Contractor’s Field Engineer.
4. Contractor’s Project Superintendent.
5. Contractor’s specialty subcontractor Project Manager, and suppliers as appropriate to the agenda.

D. Minimum Agenda:

1. Review of minutes of previous meeting.
2. Review of Work progress and on-site security.
4. Review of Contractor’s Request for Interpretation Log.
5. Field observations, problems, and decisions.
6. Identification of problems that impede planned progress.
8. Review of off-site fabrication and delivery schedules.
9. Maintenance of progress schedule.
10. Corrective measures to regain projected schedules.
11. Planned progress during succeeding work period.
12. Coordination of projected progress.
14. Effect of proposed changes on progress schedule and coordination.
15. Other business relating to Work.

1.6 SITE COORDINATION MEETING

A. In addition to Owner’s Progress Meetings and Contractor Coordination Meetings, Contractor may be required to attend Owner’s Site Coordination Meeting.

B. Site Coordination Meeting will be held in the on-site in a designated conference room.

C. Contractor will receive minimum 24-hour advance notification of an Owner’s Site Coordination Meeting by Owner or Owner’s Field Project Manager.

1.7 PREINSTALLATION CONFERENCES

A. When required in individual Specification Section, Contractor shall advise Architect and Owner’s Field Project Manager in writing of a Preinstallation Conference a minimum of 14 days prior to scheduled commencement date of the Work.

B. Preinstallation Conference shall be conducted a minimum of seven days prior to scheduled commencement date of the Work.

C. Preinstallation Conferences shall be held at on-site conference room.

D. Contractor shall prepare agenda, conduct conference, record minutes, and distribute meeting minutes within five (5) days following the conference but not later than three (3) days prior to commencement of Work.

E. Attendees will include:
   1. Contractor’s Project Manager.
   2. Contractor’s Field Engineer.
   3. Owner and/or Owner’s Field Project Manager.
   5. Entities directly affecting, or affected by, work of the Section, including but not limited to:
      a. Subcontractor Superintendent.
      b. Material vendors.
      c. Trade installers.

1.8 DAILY CONSTRUCTION PROGRESS REPORTS

A. Prepare Daily Construction Progress Reports and distribute copies to Owner and Architect on a weekly basis (Monday morning for previous week).

B. Reports shall be prepared in type written format by Contractor’s Field Engineer and include the following items as a minimum:
   1. Project Title.
2. Contract Number.
3. Date Report Represents.
4. Date Report was prepared.
5. Field Engineer’s Name.
6. Work start time and work stop time.
7. Official weather report from the nearest Federal Weather Reporting Station, or as approved by Architect.
8. Manpower distribution and totals by category of trade and trade skill level.
9. Contractor’s project administration manpower by description and total.
10. Summary of manpower tasks scheduled and accomplished during reporting period.
11. Summary of materials and products delivered and quantities used during reporting period.
12. Other information as required.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01312
SECTION 01330 - SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SUBMITTAL PROCEDURES

A. Coordination:

1. Coordinate submittals with performance of construction activities.
2. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
3. Prepare, review, approve, and transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
4. Allow sufficient time for Architect's and their consultant's review action.
5. Allow time for delivery in addition to review.
6. Allow time for reprocessing each submittal.
7. No extension of Contract Time will be authorized because of failure to prepare submittals sufficiently in advance of Work to permit processing.

B. Submittal Preparation:

1. Place permanent label or title block on each submittal for identification.
2. Indicate name of entity that prepared each submittal on label or title block.
3. Provide space on label or beside title block on Shop Drawings to record Contractor's review and approval markings and action taken.
4. Include following information on label for processing and recording action taken.
   a. Project name and number.
   b. Date.
   c. Name of Architect.
   d. Name and address of Contractor.
   e. Name of subcontractor.
   f. Name of manufacturer.
   g. Number and title of appropriate Specification Section.
   h. Drawing number and detail references, as appropriate.

C. Review and Approval:

1. Review submittals for compliance with Contract Documents and approve submittals prior to transmitting to Architect.
2. Specifically record deviations from Contract Document requirements, including minor variations and limitations.
3. Contractor's approval of submittals shall indicate that Contractor has determined and verified materials, field measurements and field construction criteria, and has checked and coordinated information contained within each submittal with requirements of Work and Contract Documents.

D. Submittal Transmittal:

1. Package each submittal appropriately for transmittal and handling.
2. Transmit each submittal using a transmittal form.
3. On transmittal, record relevant information including deviations from Contract Document requirements, including minor variations and limitations.
4. Transmit submittals to Architect unless otherwise noted or directed.
5. Where noted or directed, transmit submittals to Architect's consultant and forward copy of transmittal form to Architect.
1.2 SHOP DRAWINGS

A. Shop Drawings: Newly prepared information drawn accurately to scale.
   1. Highlight, encircle, or otherwise indicate deviations from Contract Documents.
   2. Do not reproduce Contract Documents or copy standard information as basis of Shop Drawing.
   3. Standard information prepared without specific reference to Project is not Shop Drawing.

B. Shop Drawings include fabrication and installation Drawings, setting diagrams, schedules, patterns, templates and similar Drawings. Include the following information:
   1. Dimensions.
   2. Identification of products and materials included by sheet and detail number.
   3. Compliance with specified standards.
   4. Notation of coordination requirements.
   5. Notation of dimensions established by field measurement.
   6. Sheet Size: Except for templates, patterns and similar full-size Drawings, submit Shop Drawings on sheets at least 8 1/2-inches by 11-inches but no larger than 36- by 48-inches.

1.3 PRODUCT DATA

A. Product Data includes brochures, diagrams, standard schedules, performance charts, and instructions that illustrate physical size, appearance and other characteristics of materials and equipment.

B. Collect Product Data into a single submittal for each element of construction or system.
   1. Clearly mark each copy to show applicable choices and options.
   2. Where printed Product Data includes information on products that are not required, eliminate or mark through information that does not apply.
   3. Preliminary Submittal: Submit single copy of Product Data where selection of options by Architect is required.

1.4 SAMPLES

A. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture, and pattern.

B. Submit fully fabricated Samples cured and finished as specified and physically identical with material or product proposed.
   1. Mount or display Samples in manner to facilitate review of qualities indicated.
   2. Identify Samples with generic description, product name, and name of manufacturer.
   3. Submit Samples for review and verification of size, kind, color, pattern, and texture.
   4. Where variation in color, pattern, texture, or other characteristic is inherent in material or product represented, submit at least 3 multiple units that show approximate limits of variations.
5. Preliminary Submittals: Submit one full set of choices where Samples are submitted for Architect's selection of color, pattern, texture, or similar characteristics from a range of standard choices.

6. Submittals: Submit 2 sets for Architect's review. Architect will return at least 1 set marked with action taken. Maintain sets of Samples, as returned, at Project Site, for quality comparisons throughout course of construction.

1.5 QUALITY ASSURANCE AND QUALITY CONTROL SUBMITTALS

A. Quality assurance and quality control submittals include design data, test reports, certifications, manufacturer's instructions, and manufacturer's field reports.

B. Professional design services or certifications: Where Contract Documents require professional design services or certifications by a design professional, Contractor shall cause such services or certifications to be provided by a qualified design professional, whose registration seal shall appear on drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Architect shall be entitled to rely upon adequacy, accuracy, and completeness of services, certifications, or approvals performed by such design professionals.

C. Inspection and Test Reports: Requirements for submittal of inspection and test reports from independent testing agencies are specified in Section 01450 "Quality Control."

D. Manufacturer's instructions: Preprinted instructions concerning proper application or installation of system or product.

E. Manufacturer's field reports: Reports documenting testing and verification by manufacturer's field representative to verify compliance with manufacturer's standards or instructions.

F. Submittals: Submit not less than 2 copies to Architect. Maintain 1 additional copy as "Record Document."

1.6 ARCHITECT’S ACTION

A. Architect will review and take appropriate action upon Contractor's submittals, but only for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

1. Architect's action will be taken with reasonable promptness, while allowing sufficient time in Architect's professional judgment to permit adequate review.

2. Review of submittals is not to determine accuracy or completeness of details, dimensions, and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain responsibility of Contractor.

3. Review of submittals shall not constitute approval of safety precautions or any construction means, methods, techniques, sequences or procedures.

4. Review and approval of specific items shall not indicate approval of assemblies of which item is a component.

5. Compliance with specified characteristics is Contractor's responsibility.

B. Review Action Notation: Architect will mark appropriate notation on uniform action stamp, as follows:

1. "Reviewed" indicates work covered by submittal may proceed provided it complies with requirements of Contract Documents.
2. “Reviewed, Comments Noted” indicates Work covered by submittal may proceed provided it complies with notations or corrections on submittal and requirements of Contract Documents.

3. “Amend and Resubmit” or “Rejected” indicates that Work covered by submittal, including purchasing, fabrication, delivery, or other activity may not proceed. Revise or prepare new submittal according to notations; resubmit without delay. Repeat if necessary to obtain different action mark.

C. Informational Submittals: Submittals for information or record purposes, including Quality Assurance and Quality Control Submittals, will not require responsive action by Architect.

1. Architect will reject and return informational submittals not in compliance with Contract Documents.

D. Incomplete Submittals: Architect will return incomplete submittals without action.

E. Unsolicited Submittals: Architect will return unsolicited submittals to sender without action.

1.7 DISTRIBUTION

A. Furnish copies of final submittals to installers, subcontractors, suppliers, manufacturers, fabricators, and parties as required for coordination and performance of construction activities.

B. Do not permit use of unmarked copies or rejected copies of submittals in connection with construction at Project Site or elsewhere where Work is in progress.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION 01330
SECTION 01569 - CONSTRUCTION CLEANING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Cleaning and disposal of Contractor-generated construction waste materials, debris, and rubbish for duration of Contract.

B. Cleaning and disposal of Contractor generated field office waste materials, debris and rubbish for duration of Contract.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions.

1.3 RELATED SECTIONS

A. Division 1 Specification Sections.

PART 2 - PRODUCTS

2.1 EQUIPMENT

A. Provide covered containers for deposit of waste materials, debris, and rubbish.

PART 3 - EXECUTION

3.1 CLEANING

A. Maintain project limits free of waste materials, debris, and rubbish on a daily basis.

B. Maintain project limits in a clean and orderly condition on a daily basis.

C. Remove debris and rubbish from ductwork, pipes, structures, and other closed or remote spaces, prior to closing the space and/or as instructed by the Owner or the Owner’s Field Project Manager.

D. Daily clean interior areas to provide suitable conditions for Work.

E. Broom and wet mop interior areas prior to start of surface finishing, and continue cleaning on an as-needed basis.

F. Control cleaning operations so that dust and other particles will not adhere to wet or newly coated surfaces.

G. Remove debris, trash and clean project limits and field offices at the direction of the Owner at no additional cost to the Owner within 24 hours of receiving written direction.

3.2 DISPOSAL

A. Remove waste materials, debris, and rubbish from site daily and legally dispose of off-
site.

END OF SECTION 01569
SECTION 01600 - PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes the following:

1. Product selection requirements.
2. Product delivery, storage, and handling requirements.

B. Related Sections:

1. Division 0 – Instruction to Bidders
2. Division 0 - General Conditions of the Contract

1.2 DEFINITIONS

A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term product includes the terms material, equipment, system, and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation, shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.

2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.

3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Basis-of-Design Product Specification: Where a specific manufacturer's product is named, or a product is accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

C. Manufacturer’s Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.

D. Extended Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

1.3 SUBMITTALS
A. Comply with Division 1 Section 01330 – “Submittal Procedures.”

B. Comparable Products Submission:
   1. Document each request for use of a proposed comparable product with supporting data substantiating compliance of proposed product with Basis-of-Design product, in accordance with Section 00 21 13 A701-1997 Instruction to Bidders.

1.4 QUALITY ASSURANCE

A. Source Limitations: To fullest extent possible, provide products of the same kind from a single source.

B. Compatibility of Options: When Contractor is given option of selecting between 2 or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

C. Nameplates: Except for required labels and operating data, do not attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products that will be exposed to view in occupied spaces or on exterior.

D. Required Labels: Locate required product labels and stamps on concealed surfaces or, where required for observation after installation, on accessible surfaces that are not conspicuous.

E. Electrical Equipment Standards:
   1. Comply with applicable electrical code requirements referenced in Division 16.
   2. Provide permanent nameplate on power-operated equipment; list manufacturer's name and other essential operating data.
   3. Provide materials, appliances, and other equipment tested and listed by Underwriters Laboratories, Inc. (UL). Evidence of listed products shall be UL label or other identification acceptable to authorities having jurisdiction.
   4. Where pre-assembled electrical components cannot be UL listed, provide inspection, testing and certification of compliance with applicable standards by an electrical inspection and testing agency acceptable to authorities having jurisdiction. Certification shall state that item has been tested in accordance with UL test methods and that item complies with applicable UL standards.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products according to manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.

B. Schedule delivery to minimize long-term storage at Project Site and to prevent overcrowding of construction spaces.

C. Coordinate delivery with installation time to assure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.

D. Deliver products to Project Site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
E. Inspect products upon delivery to ensure compliance with Contract Documents and to ensure that products are undamaged and properly protected.

F. Store products in manner that will facilitate inspection and measurement.

G. Store materials in a manner that will not endanger project structure.

H. Store products subject to damage by elements above ground, under cover in a weather tight enclosure, with ventilation adequate to prevent condensation.

I. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather protection requirements for storage.

1.6 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

B. Extended Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
   1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
   2. Refer to Divisions 2 through 16 Sections for specific content requirements and particular requirements for submitting special warranties.


PART 2 PRODUCTS

2.1 PRODUCT SELECTION

A. General Product Requirements: Provide products that comply with Contract Documents that are undamaged and new at time of installation.
   1. Provide products complete with accessories, trim, finish, safety guards, and other devices and details needed for complete installation and intended use and effect.
   2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
   3. Where products are accompanied by the term as selected, Architect will make selection.
   4. Where products are accompanied by the term match sample, sample to be matched is Architect's.

B. General Compliance Requirements: Compliance requirements for individual products, as indicated in Contract Documents, are multiple in nature and may include generic descriptions, performance requirements, compliance with reference standards, conformance with graphic details and other similar forms and methods of indicating requirements, all of which must be complied with.

C. Procedures for Selecting Products: Contractor's options for selecting products are limited
by Contract Document requirements, and are not controlled by industry traditions or procedures experienced by Contractor on previous construction projects.

D. Products specified by Reference Standards, Codes and Regulations: Select from among products, which can be shown to comply to referenced documents.

E. Products specified by Naming Products and Manufacturers: Select from among products listed.

F. Products specified by Naming One Manufacturer's Product as the Basis-of-Design with Reference to Other Manufacturers: Select either the specified Basis-of-Design product or a comparable product by one of the other named manufacturers.

1. Comply with provisions in Comparable Products Article to obtain approval for use of a comparable product by one of the named manufacturers.

G. Products specified by Naming One Manufacturer's Product and Indicating Option of Selecting Comparable Products by stating “or Approved Equal” or similar language: Select either the specified product or a comparable product.

1. Comply with provisions in Comparable Products Article to obtain approval for use of a comparable product by one of the named or un-named manufacturers.

H. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and, matches Architect's sample. Architect's decision will be final on whether proposed product matches satisfactorily.

I. Visual Selection Specification: Where Specifications include the phrase as selected from manufacturer's standard colors, patterns, textures or similar phrase, select a product that complies with other specified requirements. Architect will select color, pattern, and texture.

1. Standard Range: Where Specifications include the phrase standard range of colors, patterns, textures or similar phrase, Architect will select color, pattern, or texture from manufacturer's product line that does not include premium items.

2. Full Range: Where Specifications include the phrase full range of colors, patterns, textures or similar phrase, Architect will select color, pattern, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPAREABLE PRODUCTS

A. Where Basis-of-Design products are specified by name, submit the following, in addition to other required submittals, to obtain approval of a comparable product by one of the named manufacturers:

1. Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.

2. Detailed comparison of significant qualities of proposed product with the Basis-of-Design product in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, serviceability, visual effect, and specific features and requirements indicated.

3. Evidence that proposed product provides specified warranty.

4. List of similar installations for completed projects with project names and
addresses and names and addresses of architects and owners, if requested.

5. Samples, if requested.

PART 3 EXECUTION (Not Used)

END OF SECTION 01600
SECTION 01630 - PRODUCT SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

A. Section includes basic requirements and procedures for consideration of proposals for substitutions.

1.2 SUBSTITUTION REQUIREMENTS

A. Architect will consider requests for substitution in accordance with Section 00 21 13 A701-1997 Instruction to Bidders.

B. Conditions required for substitution requests: Architect will receive and consider Contractor's request for substitution under the following conditions:

1. Request is fully documented, and properly submitted.
2. Extensive revisions to Contract Documents are not required.
3. Proposed changes are in keeping with general intent of Contract Documents.
4. Requested substitution offers Owner an advantage, in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.

C. Contractor's submittal and Architect's acceptance of Shop Drawings, Product Data, or Samples not complying with Contract Documents do not constitute an acceptable or valid request for substitution, nor do they constitute approval. Substitutions not properly authorized may be considered defective.

1.3 SUBMITTALS

A. Comply with Specification Section 01330 "Submittal Procedures."

B. Substitution Request Submittal:

1. Submit 3 copies of each substitution request form.
2. Identify product to be replaced in each request. Include related Specification Section and Drawing numbers.
3. Provide complete documentation showing compliance with requirements for substitutions.
4. Include coordination information necessary to accommodate proposed substitution.
5. Include a detailed comparison of significant qualities of proposed substitution with those of product specified.
6. Provide samples, where applicable or requested.
7. Include cost information, including a proposal of net change, if any in Contract Sum.
8. Include Contractor's certification.

C. Contractor's Certification shall state the following:

1. Proposed substitute product has been fully investigated and determined to be equal or superior in all respects to specified product.
2. Same warranty will be furnished for substitute product as for specified product.
3. Cost data presented is complete and includes all related costs under this Contract except Architect's redesign and reevaluation costs; Contractor's claims for additional costs related to the substitution which subsequently become apparent are waived.
4. Proposed substitution will not affect dimensions, functional clearances, utility requirements, system operation and performance, and will be fully coordinated and complete in all respects.

1.4 ARCHITECT'S ACTION

A. Architect will review and take appropriate action upon Contractor's request for substitutions.

1. Architect's action will be taken with reasonable promptness, while allowing sufficient time in Architect's professional judgment to permit adequate review.
2. Architect shall be entitled to rely upon adequacy, accuracy, and completeness of data, and certifications prepared by Contractor.
3. If necessary, Architect will request additional information or documentation for evaluation after initial review of receipt of request for substitution.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION 01630
SUBSTITUTION REQUEST  
(After the Bidding Phase)

Project: ____________________________ Substitution Request Number: ____________________________

From: ____________________________

To: ____________________________ Date: ____________________________

Re: ____________________________ A/E Project Number: ____________________________

Contract For: ____________________________

Specification Title: ____________________________ Description: ____________________________

Section: _________ Page: _________ Article/Paragraph: _________

Proposed Substitution: ____________________________

Manufacturer: ____________________________ Address: ____________________________ Phone: ____________________________

Trade Name: ____________________________ Model No.: ____________________________

Installer: ____________________________ Address: ____________________________ Phone: ____________________________

History: [ ] New product [ ] 2-5 years old [ ] 5-10 yrs old [ ] More than 10 years old

Differences between proposed substitution and specified product: ____________________________

☐ Point-by-point comparative data attached - REQUIRED BY A/E

Reason for not providing specified item: ____________________________

Similar Installation:

Project: ____________________________ Architect: ____________________________

Address: ____________________________ Owner: ____________________________

Date Installed: ____________________________

Proposed substitution affects other parts of Work: [ ] No [ ] Yes; explain ____________________________

Savings to Owner for accepting substitution: ____________________________ ($ ____________).

Proposed substitution changes Contract Time: [ ] No [ ] Yes [Add] [Deduct] ____________ days.

Supporting Data Attached: [ ] Drawings [ ] Product Data [ ] Samples [ ] Tests [ ] Reports [ ] _________
The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: ____________________________
Signed by: ______________________________
Firm: ___________________________________
Address: _________________________________
Telephone: _______________________________
Attachments: ____________________________

A/E's REVIEW AND ACTION

☐ Substitution approved - Make submittals in accordance with Specification Section 01330.
☐ Substitution approved as noted - Make submittals in accordance with Specification Section 01330.
☐ Substitution rejected - Use specified materials.
☐ Substitution Request received too late - Use specified materials.

Signed by: ______________________________ Date: ____________________

Additional Comments: ____________________
☐ Contractor  ☐ Subcontractor  ☐ Supplier  ☐ Manufacturer  ☐ A/E
SECTION 01650 - TRANSPORTATION AND HANDLING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Packaging, Transportation.
B. Delivery and Receiving.
C. Product Handling.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions.

1.3 RELATED SECTIONS

A. Division 1 Specification Sections.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PACKAGING AND TRANSPORTATION

A. Require supplier to package finished products in boxes or crates for protection during shipment, handling, and storage.
B. Protect sensitive products against exposure to elements and moisture.
C. Protect sensitive equipment and finished against impact, abrasion, and other damage.

3.2 DELIVERY AND RECEIVING

A. Arrange deliveries of products in accordance with construction progress schedules.
B. Allow time for inspection prior to installation.
C. Coordinate deliveries to avoid conflict with Work and conditions at site; limitations on storage space; availability of personnel and handling equipment; and Owner's use of premises.
D. Deliver products in undamaged, dry condition, in original unopened containers or packaging with identifying labels intact and legible.
E. Clearly mark partial deliveries of component parts of equipment to identify equipment and contents, to permit easy accumulation of parts, and to facilitate assembly.
F. Immediately upon delivery, inspect shipment to assure:

1. Product complies with requirement of Contract Documents and reviewed submittals.
2. Quantities are correct.
3. Accessories and installation hardware are correct.
4. Containers and packages are intact and labels legible.
5. Products are protected and undamaged.

3.3 PRODUCT HANDLING

A. Provide equipment and personnel to handle products, by methods to prevent soiling and damage.

B. Provide additional protection during handling to prevent marring and otherwise damaging products, packaging, and surrounding surfaces.

C. Handle product by methods to avoid bending or overstressing.

D. Lift large and heavy components only at designated lift points.

END OF SECTION 01650
SECTION 01660 - STORAGE AND PROTECTION

PART 1  GENERAL

1.1  SECTION INCLUDES

A. Storage, General.
B. Enclosed Storage.
C. Exterior Storage.
D. Maintenance of Storage.

1.2  RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions.

1.3  RELATED SECTIONS

A. Division 1 Specification Sections.

PART 2  PRODUCTS (Not Used)

PART 3  EXECUTION

3.1  GENERAL

A. Store products, immediately upon delivery, in accordance with manufacturer's instructions, with seals and labels intact.
B. Protect until installed.
C. Arrange storage in a manner to provide access for maintenance of stored items and for inspection.
D. Storage of materials to be used for a week's duration may be stored in the secured construction area.
E. Stored materials must not conflict with work conditions.
F. On-site storage subject to Owner approval and inspection.

3.2  ENCLOSED STORAGE

A. Store products, subject to damage by the elements, in substantial weathertight enclosures.
B. Maintain temperature and humidity within ranges stated in manufacturer's instructions.
C. Provide humidity control and ventilation for sensitive product, as required by manufacturer's instructions.
D. Store unpacked and loose products on shelves, in bins, or in neat groups of like items.
3.3 EXTERIOR STORAGE

A. Provide substantial platforms, blocking, or skids, to support fabricated products above ground; slope to provide drainage.

B. Protect products from soiling and staining.

C. For products subject to discoloration or deterioration from exposure to the elements, cover with impervious sheet material.

D. Provide ventilation to avoid condensation.

E. Store loose granular materials on clean, solid surfaces such as pavement, or on rigid sheet materials, to prevent mixing with foreign matter.

F. Provide surface drainage to prevent erosion and ponding of water.

G. Prevent mixing of refuse or chemically injurious materials or liquids.

3.4 MAINTENANCE OF STORAGE

A. Periodically inspect stored products on a schedule basis.

B. Maintain a log of inspections available to Owner on request.

C. Verify that storage facilities comply with manufacturer’s product storage requirements.

D. Verify that manufacturer-required environmental conditions are maintained continually.

E. Verify that surfaces of products exposed to the elements are not adversely affected and that any weathering of finishes is acceptable under requirements of Contract Documents.

3.5 MAINTENANCE OF EQUIPMENT STORAGE

A. For mechanical and electrical equipment in long-term storage, provide manufacturer’s service instructions to accompany each item, with notice of enclosed instructions shown on exterior of package.

B. Service equipment on a regularly scheduled basis, maintaining a log of services; submit as a Record Document.

END OF SECTION 01660
SECTION 01731 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes procedural requirements for cutting and patching.

1. Demolition and removal of selected portions of a building structure’s, mechanical and electrical systems, and underground utilities.

1.3 SUBMITTALS

A. Cutting and Patching: Submit a proposal describing the procedures at least 10 days before time of planned work. Include the following information:

1. Extent of cutting and patching, how it will be performed and why it cannot be avoided.
2. Changes to in-place construction and anticipated results.
3. Changes to structural elements and building’s appearance.
4. List products to be used and firms who will complete the work.
5. Date and time of work.
6. Utility interruptions required.
7. Obtain approval of Architect and Owner prior to proceeding with any cutting and patching work.

1.4 QUALITY ASSURANCE

A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.

1. Structural engineering services to be provided by the general contractor as design/build. Modifications to structure are to be coordinated with architectural design intent.

B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended, or that will increase maintenance or decrease service life.

C. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch items exposed on the exterior or in occupied spaces in a manner that would, in Architect’s opinion, reduce the building’s aesthetic qualities.

1.5 WARRANTY

A. Existing Warranties: Remove, replace, patch and repair materials and surfaces cut or damaged during demolition, by methods and with materials so as not to void existing warranties.
PART 2 - PRODUCTS

2.1 MATERIALS

A. In-place materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces and elements to the greatest extent possible.

1. If identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
2. Use materials whose installed performance equals or surpasses that of existing materials.
3. Materials shall be approved by the Architect/Engineer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which the work is to be performed.

1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes and primers.
2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Temporary Supports: Provide temporary support of all items to be cut.

B. Protection: Protect all existing construction during cutting and patching to prevent damage. Provide protections from adverse weather conditions for portion of the project that might be exposed during the work.

C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

3.3 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with work at the earliest feasible time, and complete without delays.

1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding and similar operations, including excavation, using methods least likely to damage remaining construction. Comply with original installer’s written recommendations, where required.

C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.

CUTTING AND PATCHING

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2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing. Retain paragraph and subparagraph below if required. Limit hours of interruption, if applicable.

3. Floors and Walls: Where walls or partitions that are demolished extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide and even surface of uniform finish, color, texture and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

4. Ceilings: Patch, repair, and rehang existing ceilings as necessary to provide an even plane surface of uniform appearance.

D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils and similar materials.

END OF SECTION
SECTION 01732 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 MATERIALS OWNERSHIP

A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from site with further disposition at Contractor's option.

1.3 SUMMARY

A. This Section includes the following:

1. Demolition and removal of selected portions of a building structure's, mechanical and electrical systems, and underground utilities. If hazardous materials are suspected or encountered during the work, the contractor shall immediately notify the owner.

B. Related Sections include the following:

1. Section 01010 - "Summary of Work."
2. Section 01731 - "Cutting and Patching" for cutting and patching procedures for selective demolition operations.
3. Division 15 Section for demolishing, cutting, patching, or relocating mechanical items.
4. Division 16 Sections for demolishing, cutting, patching, or relocating electrical items.

1.4 DEFINITIONS

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

B. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.

C. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.5 SUBMITTALS

A. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
B. Schedule of Selective Demolition Activities: Indicate the following:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner’s on-site operations are uninterrupted.
2. Interruption of utility services.
3. Coordination for shutoff, capping, and continuation of utility services.
4. Locations of temporary partitions and means of egress.
5. Coordination with Owner for Owner’s continuing use and occupancy of portions of the building.

1.6 QUALITY ASSURANCE

A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

B. Hazardous Material Abatement: Abatement work shall be performed by a qualified firm, specialized and certified for the tasks, as specified elsewhere in the project documents.

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

D. Pre-demolition Conference: Conduct conference with OWNER at Project site to comply with requirements in Specification Section 01310 “Project Management and Coordination.” Review methods and procedures related to selective demolition including, but not limited to, the following:

1. Inspect and discuss condition of construction to be selectively demolished.
2. Review structural load limitations of existing structure.
3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.

1.7 PROJECT CONDITIONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area during various phases of demolition and construction. Conduct selective demolition so Owner’s operations will not be disrupted. Provide not less than 72 hours’ notice to Owner of activities that will affect Owner’s operations.

B. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.

1. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner.

C. Owner assumes no responsibility for condition of areas to be selectively demolished.

D. Storage or sale of removed items or materials on-site will not be permitted.

E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
1. Maintain fire-protection facilities in service during selective demolition operations.

1.8 PROTECTION

A. Protection of Existing Work: Before beginning any cutting or demolition work, the Contractor shall carefully survey the existing work and examine the drawings and specifications to determine the extent of the work. The Contractor shall take all necessary precautions to ensure against damage to existing work to remain in place, to be reused, or to remain the property of the Owner, and any damage to such work shall be repaired or replaced as approved by the Owner at no additional cost. The Contractor shall carefully coordinate the work of this section with all other work and construct and maintain shoring, bracing and supports, as required. The Contractor shall ensure that structural elements are not overloaded and be responsible for increasing structural supports or adding new supports as may be required as a result of any cutting, removal, or demolition work performed under any part of this Contract.

B. Use of Explosives: Use of explosives will not be permitted.

1.9 WARRANTY

A. Existing Warranties: Remove, replace, patch and repair materials and surfaces cut or damaged during demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Use repair materials identical to existing materials.

1. If identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.

2. Use materials whose installed performance equals or surpasses that of existing materials.

3. Materials shall be approved by the Architect/Engineer.

B. Comply with material and installation requirements specified in individual Specification Sections.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. Inventory and record the condition of items to be removed and reinstalled.

D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.
E. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

1. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities. When conducting any Contract work, the Contractor shall be responsible for asbestos-containing material (ACM) disturbances on the other side of walls, floor slabs, or ceiling decks adjacent to the immediate workspace. Equipment (piping, ducting, conduit, etc.) manipulations in the workspace may cause disturbances in adjacent rooms or at floor levels above or below the work space. The Contractor shall anticipate such potential disturbances and investigate conditions in adjoining areas before work begins. Conduct abatement or take other precautions, as necessary, to avoid ACM disturbance in the workspace and in adjacent areas. If pre-work investigation identifies existing conditions requiring remediation, due to previous work by others, the disturbed materials shall be remediated to avoid further disturbance. If unforeseen conditions are observed, the Contractor shall contact the Project Manager for direction.

2. Asbestos pipe and fitting insulation exists in inaccessible areas of the building structures, such as above fixed plaster and drywall ceilings, behind casework, and in hidden wall, ceiling, and other chases. As these building structures are made accessible for renovation purposes, hidden asbestos-containing materials and conditions may be revealed. Before opening, drilling, sawing, demolishing, or otherwise accessing any of these building structures, the Contractor shall seal all access doors to the room, or (in hallways and open areas) erect poly barriers or curtains surrounding the work area. If access must be maintained through one doorway, erect layered poly flaps at the doorway. The objective is to isolate the work area in the event that unforeseen friable asbestos conditions are revealed when the concealed building structure is accessed. At the time that the building structure is accessed, the General Contractor’s Superintendent (or his designated licensed asbestos inspector) shall be present to inspect the concealed building structures and determine whether unforeseen asbestos conditions are present. At all times while work is taking place within the concealed building structure, either the Superintendent or a subcontractor’s senior supervisor (the most senior personnel present at the school representing that subcontractor) shall be present to ensure that no unforeseen asbestos materials or conditions are encountered. While working in these building structures, workers who are not trained to recognize asbestos materials or hazards shall not be allowed to work unsupervised. The Contractor shall be responsible for all costs of remediation if unforeseen Hazardous Materials are disturbed due to negligence or poor supervision of workers.

3. The Contractor shall determine whether Mercury switches are present. If Mercury switches are present, the Mercury components shall be properly disposed of.

3.2 PREPARATION

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

1. Erect temporary protection, such as fences and railings, where required by Owner.
2. Protect existing site improvements, appurtenances, and landscaping to remain.
3. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.
B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of the building.
2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
4. Drop cloths, plastic, plywood, or other materials must be placed on floors to protect the finish and integrity of flooring materials.
5. Cover and protect furniture, furnishings and equipment that have not been removed.

C. Temporary Partitions: Erect and maintain fire-retardant, dust-proof partitions to limit dust and dirt migration and to separate areas from fumes and noise. Provide temporary doors with locking devices in partitions.

1. During demolition work, the doors to the room shall be sealed in an air-tight manner to eliminate dust and fumes from migrating to other building areas. Where access to the room must be maintained, the doorway shall be covered with overlapping full lengths of polyethylene (poly) sheeting. Each layer of poly sheeting shall be sealed at the top and one side of the doorway, and the separate layers shall be sealed on alternating sides of the doorway.
2. When work is conducted in the hallways or common areas, the doors to nearby classrooms shall be closed and sealed to prevent dust migration. When ceiling tiles or sections are removed from common areas, all lockers, floors, opening to chases, and classroom door vents shall be covered with one layer of poly sheeting to prevent dust settling and migration.

D. Temporary Shoring: Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent movement, settlement, or collapse of construction to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

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

3.3 POLLUTION CONTROLS

A. Dust, Noise and Odor Control: The Contractor is responsible for controlling the levels of construction dust, noise, and odors in the building. Dust levels within the building must be maintained at acceptably low levels through a combination of vigilant cleaning methods and preventative engineering controls. Noise levels and odors must be controlled both during school hours and when students remain in the school for after school activities. If a conflict arises regarding acceptable levels of dust, noise, or odors, the WCPS Project Manager will determine what is acceptable and the control methods that will be employed.

1. Dust Control: Work areas shall be ventilated during general construction to reduce airborne dust levels and prevent dust movement outside the work area. Fans or air filtration units shall be placed within the work areas that actively move air from within the work area to the exterior of the building. The purpose of work area ventilation is to establish a negative pressure system within the work area, such that airborne dust will not drift to other areas of the school; rather, airborne
dust will be attracted to the fan unit and discharged outside the school. Dust reducing attachments shall be used on all electrical tools which cause dust. Dust and dirt control floor mats must be used at the exit of any work area which leads to the school building. Workers must be instructed to thoroughly wipe the bottoms of shoes on the floor mat prior to exiting the work area. Use of the floor mats by all workers must be strictly enforced in order to minimize transport of work area dust and dirt throughout the building. Mats or other dust/dirt control mechanisms must be cleaned or replaced as frequently as necessary to maintain their efficacy. Wet mopping and/or sweeping with sweeping compound shall be conducted nightly for all corridor floors and work area floors. Should the Contractor fail to maintain or clean the work area, said work will be performed by others and charged to the Contractor.

2. Noise Control: Drills, saws, and other electronic equipment will not be utilized during school hours, unless approval is obtained from WCPS’s Project Manager. Hammering and other activities causing excessive noise shall not be conducted during school hours. Noise reduction attachments shall be used on electrical tools and other construction equipment, where feasible.

3. Odor/Fume Control: No solvent usage, torching, use of gasoline powered equipment, or other activities causing unusual/unpleasant/dangerous odors or fumes, indoors or outdoors shall be conducted during school hours or when any students remain in the building. Activities causing odors or fumes shall also not be conducted at any time that will cause odors or fumes to remain when students re-occupy the school building.

B. Disposal: Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

1. Remove debris from elevated portions of the building by chute, hoist or other device that will convey debris to grade level in a controlled descent.

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

3.4 CONSTRUCTION

A. Existing Utilities: Maintain services indicated to remain and protect them against damage during selective demolition operations.

B. Do not interrupt existing utilities serving occupied or operating facilities unless authorized in writing by OWNER. Provide temporary services during interruptions to existing utilities, as acceptable to OWNER.
1. Provide at least 2 weeks notice to OWNER if shutdown of service is required during changeover.

C. Utility Requirements: Locate, identify, disconnect, and seal or cap off indicated utilities serving areas to be selectively demolished.

1. If utility services are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary utilities that bypass area of selective demolition and that maintain continuity of service to other parts of building.
2. Cut off pipe or conduit in walls or partitions to be removed. Cap, valves, or plug and seal remaining portion of pipe or conduit after bypassing.

3.5 SELECTIVE DEMOLITION

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

1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
3. Do not use cutting torches.
4. Dispose of demolished items and materials promptly.
5. Return elements of construction and surfaces that are to remain to condition existing before selective demolition operations began.

B. Removed and Reinstalled Items: Comply with the following:

1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
2. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

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

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

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

F. Disposal of Demolished Materials

1. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
2. Burning: Do not burn demolished materials.
3. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.6 REPAIR/RESTORATION

A. General: Promptly repair damage to adjacent construction caused by selective demolition operations.

B. Patching: Comply with Specification Section 01731 "Cutting and Patching."

C. Repairs: Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.
   1. Completely fill holes and depressions in existing masonry walls that are to remain with an approved masonry patching material applied according to the manufacturer's written instructions.

D. Finishes: Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.

E. Floors and Walls: Where walls or partitions that are demolished extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide and even surface of uniform finish, color, texture and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
   1. Patch with durable seams that are invisible as possible. Provide materials and comply with installation requirements specified in other sections of these specifications.
   2. Where patching occurs in a painted surface, apply primer and intermediate paint coats over patch and apply final paint coat over entire unbroken surface containing patch. Provide additional coats until patch blends with adjacent surfaces.
   3. Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.

F. Ceilings: Patch, repair, and rehang existing ceilings as necessary to provide an even plane surface of uniform appearance.

3.7 DISPOSAL

A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.

B. Burning: Burning of materials is prohibited.

C. Disposal: Transport demolished materials off of Owner's property and legally dispose of them.

END OF SECTION
SECTION 01740 - FINAL CLEANING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Final cleaning of project.
B. Site debris not exposed to view.
C. Perform Final Cleaning at Substantial Completion and Final Completion.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions.

1.3 RELATED SECTIONS

A. Division 1 Specification Sections.

1.4 DESCRIPTION

A. Execute and complete cleaning prior to inspection date established for Substantial Completion.

PART 2 - PRODUCTS

2.1 CLEANING MATERIALS

A. Use materials that will not create hazards to health or property and that will not damage surfaces.
B. Use only materials and methods recommended by manufacturer of material being cleaned.

PART 3 – EXECUTION

3.1 MECHANICAL ROOM CLEANING

A. Contractor shall thoroughly clean the Mechanical Room and all other rooms in which work under this contract is performed thoroughly prior to turning over to WCPS. Such cleaning shall occur at conclusion of each area of work, in accordance with detailed cleaning contained herein.

3.2 CLEANING

A. In addition to removal of debris and cleaning specified in other Sections, clean interior and exterior exposed-to-view surfaces.
B. Remove temporary protection and labels not required to remain.
B. Clean finishes free of dust, stains, films, and other foreign substances.
C. Clean transparent and glossy materials to a polished condition; remove foreign substances.

D. Polish reflective surfaces to a clear shine.

E. Vacuum clean carpet, fabric, and similar soft surfaces.

F. Clean and damp-mop resilient and hard-surfaced floors as specified, wax and polish if recommended by manufacturer.

G. Clean surfaces of equipment and remove excess lubrication.

H. Clean light fixtures and lamps. Wipe all fingerprints from lenses, louvers, etc.

I. Remove waste, foreign matter, and debris from roofs, gutters, areaways, and drainage systems.

J. Remove waste, debris, and surplus materials from site.

K. Clean site; remove stains, spills, and foreign substances from paved areas and sweep clean.

L. Rake clean other exterior surfaces.

M. Open all access door covers for final Owner, Architect and Owner’s Field Project Manager inspection.
   1. Close upon acceptance of interior cleanliness.

N. Maintain Final Cleaning until Final Completion or turnover to WCPS for beneficial use.

END OF SECTION 01740
SECTION 01770 - CONTRACT CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SECTIOIN INCLUDES
   A. Administrative provisions for Substantial Completion and for Final Acceptance.

1.2 RELATED DOCUMENTS
   A. Drawings and general provisions of Contract, including Division 0 General and Supplementary Conditions.

1.3 RELATED SECTIONS
   A. Division 0
   B. Division 1 Specification Sections.

PART 2 - PRODUCTS (Not Used)
PART 3 - EXECUTION (Not Used)

END OF SECTION 01770
SECTION 01781 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Maintenance of Record Documents and Samples.
B. Submittal of Record Documents and Samples.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions.

1.3 RELATED SECTIONS

A. Division 1 Specification Sections.

1.4 MAINTENANCE OF DOCUMENTS AND SAMPLES

A. See individual specification Sections for requirements of manufacturer's certificates and certificates of inspection.
B. In addition to requirements in General Conditions, maintain at the site one record copy of each of the following:
   2. Specifications.
   3. Addenda.
   5. Change Orders and other modifications to the Contract.
   6. Reviewed shop drawings, product data, and samples.
   7. Field test records.
   8. Inspection certificates.
   9. Manufacturer's certificates.
C. Store Record Documents and samples in Contractor's Site Office separate from documents used for construction.
D. Provide files, racks, and secure storage for Record Documents and samples.
E. Label and file Record Documents and samples in accordance with Section number listings in Table of Contents of this Project Manual.
F. Label each document "PROJECT RECORD DOCUMENTS" in neat, large, printed letters.
G. Maintain Record Documents in a clean, dry, and legible condition.
H. Do not use Record Documents for construction purposes.
I. Keep Record Documents and samples available for inspection by Owner, Architect and Engineer at all times.
1.5 RECORDING

A. Record information on a set of blue line opaque drawings.

B. Provide felt tip marking pens, maintaining separate colors for each major system, for recording information.

C. Record information concurrently with construction progress.

D. Do not conceal any Work until required information is recorded.

E. Contract Drawings and Shop Drawings:
   1. Legibly mark each item to record actual construction, including:
      b. Measured horizontal and vertical locations of underground utilities and appurtenances referenced to permanent surface improvements.
      c. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of construction.
      d. Field changes of dimension and detail.
      e. Changes made by Clarifications, Minor Modifications and Supplements.
      f. Details not on original Contract Drawings.
      g. References to related shop drawings and modifications.
   2. Specifications:
      a. Manufacturer, trade name, and catalog number of each product actually installed particularly optional items and substitute items.
      b. Changes made by Addenda and modifications.
   3. Other Documents:
      a. Maintain manufacturer's certifications, inspection certifications, and field test records, as required by individual Specification Section.

1.6 SUBMITTALS

A. On the day established for Contract closeout, deliver Final Record Documents and Samples under provisions of Section 01770 “Contract Closeout Procedures.”

1.7 FINAL RECORD DOCUMENTS

A. Notify Architect 120 days before substantial completion. Architect will provide labeled CD-ROM disk to Contractor 90 days prior to Substantial Completion.

   1. CDROM disk will contain electronic files of Contract Documents (Bid Documents) in two folders labeled “Drawings” and “Specifications”, for Contractor’s use in preparing Final Record Documents.

B. Utilizing AutoCAD 2012 software, provided by Contractor, remove Architect’s and Engineer’s name and address from title block from each electronic drawing file.

C. Electronically transfer markings from Project Record Documents to each appropriate drawing file.

D. Label each drawing above the title block – FINAL RECORD DOCUMENTS.
E. Insert Contractor’s name, address and telephone number in the title block where the Architect’s name and address was removed.

F. Utilizing Microsoft Word Version 2007 software, provided by the Contractor, electronically transfer markings from Project Record Documents to each appropriate specification Section and Article.

G. Submit Project Record Documents and five (5) copies of the FINAL RECORD DOCUMENTS on five (5) separate CD-ROMs to Architect.

H. Format of CD-ROM and cover shall be similar to CDROM provided by Architect.

I. Submit documents under cover letter, listing:

1. Date.
2. Project title and number.
3. Contractor’s and subcontractor’s name, address, and telephone number.
4. Number and title of each Project Record Document and FINAL RECORD DOCUMENT.
5. Signature of Contractor or authorized representative.

J. Provide PDF files of all submittals (shop drawings) marked “Approved”, “Reviewed” or “Reviewed – Comments Noted” on the disk.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01781
SECTION 01783 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Format and content of Operation and Maintenance manuals.
B. Instruction of Owner's personnel.
C. Schedule of submittals.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions.

1.3 RELATED SECTIONS

A. Division 1 Specification Sections.

1.4 QUALITY ASSURANCE

A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.

1.5 MANUAL FORMAT

A. Prepare data in the form of an instructional manual.
B. Binders: Commercial quality, 8-1/2-inch by 11-inch, white, three-ring "D" type ring binders with hardback, cleanable, plastic covers; 3-inch maximum ring size.
   1. When multiple binders are used, correlate data into related consistent groupings and provide table of contents in each binder.
C. Covers: Identify each binder with typed or machine printed title “Operation and Maintenance Instructions.”
   1. List title of Project, project number, substantial completion date, and identify subject matter of contents.
D. Arrange content under specification Section numbers and sequence of Table of Contents of this Project Manual.
E. Insert Table of Contents into each binder utilizing Avery Super Heavyweight 5.0.mills Sheet Protector No. PVH119-25 55015.
F. Provide tabbed fly-sheet for each separate product and system, with typed description of product and major component parts of equipment.
G. Text: Manufacturer's printed data, or typewritten data on 20-pound paper.
H. Drawings: Provide with reinforced punched binder tab.
1. Bind with text; fold larger drawings to size of text pages and insert each drawing into a separate 3-ring Avery Super Heavyweight 5.0.mils Sheet Protector No. PVH119-25 55015.

1.6 CONTENTS OF EACH VOLUME

A. Table of Contents: Provide title of Project; names, addresses, and telephone numbers of Architect/Engineer and Contractor with name of responsible parties; and schedule of products and systems, indexed to content of the volume.

1. List names, addresses, and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts for each product or system.

B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information.

C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, and to show control and flow diagrams.

1. Do not use Project Record Documents as maintenance drawings.

D. Typed Text: As required to supplement product data.

1. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Specification Section 01450 – "Quality Control."

1.7 MANUAL FOR MATERIALS AND FINISHES

A. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations. Provide information for reordering custom manufactured products.

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


D. Additional Requirements: As specified in individual Specifications Sections.

E. Provide a listing in Table of Contents for design data, with tabbed fly-sheet and space for insertion of data.

1.8 MANUAL FOR EQUIPMENT AND SYSTEMS

A. Each Item of Equipment and Each System:

1. Include description of unit or system, and component parts.
2. Give function, normal operating characteristics, and limiting conditions.
3. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
B. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications.

C. Include as-installed, color-coded wiring diagrams.

D. Operating Procedures: Include the following:
   1. Start-up, break-in, and routine normal operating instructions and sequences.
   2. Regulation, control, stopping, shut-down, and emergency instructions.
   3. Summer, winter, and any special operating instructions.

E. Maintenance Requirements: Include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

F. Provide servicing and lubrication schedule, and list of lubricants required.

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

H. Include sequence of operation by controls manufacturer.

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

J. Provide as-installed control diagrams by controls manufacturer.

K. Provide Contractor's coordination drawings, with as-installed, color-coded piping diagrams.

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

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

N. Include test and balancing reports as specified in Specifications Section 01810 – "Testing, Adjusting and Balancing of Systems."

O. Additional Requirements: As specified in individual Specifications Sections.

P. Provide a listing in Table of Contents of design data, with tabbed fly-sheet and space for insertion of data.

1.9 SUBMITTALS

A. Submit to Architect one copy of preliminary draft of proposed format and outline of contents at mid point of construction, but not less than 120 calendar days prior to date established for Substantial Completion.
   1. Copy will be returned with Architect/Engineer comments.

B. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within 10 days after acceptance.

C. Submit one copy of completed volumes in final form 15 days prior to Substantial Completion.
D. Copy will be returned following Substantial Completion, with Architect/Engineer comments.

E. Revise content of documents as required prior to Final Record Documents submittal.

F. Submit three (3) originals of revised volumes of data in final form at time designated for submittal of Final Record Documents.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01783
SECTION 01785 - WARRANTIES AND BONDS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Preparation and submittal of warranties.
B. Schedule of submittals.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions.

1.3 RELATED SECTIONS

A. Division 1 Specification Sections.

1.4 FORM OF SUBMITTALS

A. Bind in commercial quality 8-1/2-inch by 11-inch, three-ring "D" type ring binders, with hardback, cleanable plastic covers; 3-inch maximum ring size.

B. When multiple binders are used, correlate data into related consistent groupings and provide table of contents in each binder.

C. Label cover of each binder with typed or machine printed title "Warranties," with title of Project, Project number, name, address, and telephone number of Contractor; and name of responsible principal.

D. Table of Contents: Neatly typed, in sequence of Table of Contents of Project Manual; with each item identified with number and title of Specification Section in which specified, and name of Product or Work item. Insert Table of Content pages into Avery 5.0 mil Super Heavyweight Document Protector No. PVH119-25 55015.

E. Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.

F. Provide full information, using separate typed sheets as necessary.

G. List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

1.5 PREPARATION OF SUBMITTALS

A. General: Verify with other Sections for required warranties.

B. Obtain warranties, executed in duplicate by responsible subcontractors, suppliers, and manufacturers, within 10 days after completion of applicable item of Work.

C. Except for items placed into service with Owner's permission, leave date for beginning of warranty time blank until date of Substantial Completion is acceptable to the Owner and Architect/Engineer.
D. Verify that documents are in proper form, contain full information, and are notarized.

E. Co-execute submittals, when required.

H. Provide originals.

I. Photocopies are not acceptable.

H. Retain warranties until time specified for Final Record Documents submittal.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01785
SECTION 01787 - SPARE PARTS AND MAINTENANCE MATERIALS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Products required.

B. Storage and delivery of products.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions.

1.3 RELATED SECTIONS

A. Division 1 Specification Sections.

1.4 PRODUCTS REQUIRED

A. Provide quantities of products, spare parts, maintenance tools, and maintenance materials specified in other Sections to be furnished to Owner, in addition to requirements for completion of Work.

B. Products:

1. Identical to those installed in the Work.

2. Include quantities in original purchase from supplier to avoid variations in manufacture.

1.5 STORAGE AND MAINTENANCE

A. Store products with products to be installed in the Work, under provisions of Section 01660 – “Storage and Protection.”

B. Following delivery of products to site, maintain spare products in same space and condition as products to be installed in the Work.

1.6 DELIVERY

A. Coordinate with Owner:

1. Provide Owner and Architect a copy of an itemized list of all specified spare parts and components 30 days prior to Substantial Completion for review and approval.

2. Deliver all specified spare parts and items to the Owner on one single day.

3. Delivery shall occur 15 days prior to Substantial Completion.

4. Deliver to Owner itemized products and unload spare products at location designated by Owner.

5. Inventory and obtain signed receipt from Owner at time of delivery.

6. Missing items shall be identified in the inventory and provided with new items within 10 days of receipt of original delivery.

7. Damaged items shall be identified in the inventory and replaced with new items within 10 days of receipt of original delivery.

8. Repeat inventory process and obtain signed receipt from Owner at time of...
9. Identify itemized products in monthly Payment Application and attach copy of inventoried products and signed receipt.
10. Attach copy of Owner signed and accepted spare parts inventory list to Notice of Substantial Completion letter.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION 01787
PART 1 - GENERAL

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.3 SUMMARY

A. This Section includes the following:
1. Excavating and backfilling trenches for buried utilities and pits for buried utility structures.
2. Excavating and filling to subgrade for structural concrete.

1.4 DEFINITIONS

A. Backfill: Soil materials used to fill an excavation.
1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Layer placed between the subbase course and asphalt paving.

C. Bedding Course: Layer placed over the excavated subgrade in a trench before laying pipe.

D. Borrow: Satisfactory soil imported from off-site for use as fill or backfill.

E. Drainage Course: Layer supporting slab-on-grade used to minimize capillary flow of pore water.

F. Excavation: Removal of material encountered above subgrade elevations.
1. Additional Excavation: Excavation below subgrade elevations as directed by Engineer. Additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
2. Bulk Excavation: Excavations more than 10 feet (3 m) in width and pits more than 30 feet (9 m) in either length or width.
3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated dimensions without direction by Engineer. Unauthorized excavation, as well as remedial work directed by Engineer, shall be without additional compensation.

G. Fill: Soil materials used to raise existing grades.

H. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

I. Subbase Course: Layer placed between the subgrade and base course for asphalt paving, or layer placed between the subgrade and a concrete pavement or walk.

J. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.

K. Utilities include on-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

L. Old Fill: Materials placed by man previously over existing natural ground and/or residual materials.

1.5 SUBMITTALS

A. Product Data: For the following:
   1. Each type of detectable warning tape.

B. Samples: For the following:
   1. 30-lb (14-kg) samples, sealed in airtight containers, of each proposed soil material from on-site or borrow sources.

C. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated:
   1. Classification according to ASTM D 2487 of each on-site or borrow soil material proposed for fill and backfill.
   2. Laboratory compaction curve according to ASTM D 1557 for each on-site or borrow soil material proposed for fill and backfill.

D. Bonds and Licenses: Submit evidence of bonds, licenses, and experience prior to commencement of any blasting operations.
E. Blasting Plan: Submit data concerning proposed blasting operations and other utility owners if required.

1.6 QUALITY ASSURANCE

A. Geotechnical Testing Agency Qualifications: An independent testing agency qualified according to ASTM E 329 to conduct soil materials and rock-definition testing, as documented according to ASTM D 3740 and ASTM E 548.

B. Pre-excavation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1.7 PROJECT CONDITIONS

A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted in writing by Engineer and then only after arranging to provide temporary utility services according to requirements indicated:
   1. Notify Engineer not less than two days in advance of proposed utility interruptions.
   2. Do not proceed with utility interruptions without Engineer's written permission.
   3. Contact utility-locator service for area where Project is located before excavating.

B. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shut off services if lines are active.

C. Classification of Excavated Materials: No consideration will be given to the nature of materials encountered in site grading operations. Therefore, as unclassified excavation, no additional payment will be made for difficulties occurring in excavating and handling of materials. This includes but is not limited to the removal and replacement of unsuitable subgrade soils to depths of approved materials, removal of unsuitable old fill, rock removal and off-site disposal of subgrade material if found unsuitable.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
B. Satisfactory Soils: On-site residual materials excavated from cut areas can generally be used for fill provided that the compaction criteria are strictly maintained. Any fill materials should not contain any debris, waster or frozen materials and they should be less than two (2) percent vegetation-organic materials by weight.
   1. The maximum rock size within any proposed fill should be limited to 3 inches in the largest dimension unless approved by Geotechnical engineer.

C. Unsatisfactory Soils: Materials classified as CH, MH, OL, OH or Pt are not suitable material.
   1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction, existing subgrade soils that are unstable and yielding during proof rolling and any existing old fill materials previously placed.

D. Backfill and Fill: Satisfactory soil materials.

E. Subbase: Compacted native material as directed by the Geotechnical Engineer.

F. Drainage Fill: Washed, narrowly graded mixture of crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2- inch (38-mm) sieve and 0 to 5 percent passing a No. 8 (2.36-mm) sieve.

G. Pipe Bedding: Maryland State Highway Administration graded aggregate designated CR-6.

H. Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D 448; coarse-aggregate grading Size 67; with 100 percent passing a 1-inch (25-mm) sieve and 0 to 5 percent passing a No. 4 (4.75-mm) sieve.

2.2 ACCESSORIES

A. Detectable Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, minimum 6 inches (150 mm) wide and 4 mils (0.1 mm) thick, continuously inscribed with a description of utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches (750 mm) deep; colored as follows:

PART 3 - EXECUTION

EXCAVATION AND BACKFILLING
02300-4
3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

B. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.

C. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.2 DEWATERING

A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
   1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.
   2. Install a dewatering system to keep subgrades dry and convey ground water away from excavations. Maintain until dewatering is no longer required.

3.3 EXCAVATION FOR STRUCTURES

A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch (25 mm). Extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.
   1. Excavation for Underground Tanks, Basins, and Mechanical or Electrical Utility Structures: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 1 inch (25 mm). Do not disturb bottom of excavations intended for bearing surface.

3.4 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated gradients, lines, depths, and elevations.
   1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.
B. Excavate trenches to uniform widths to provide a working clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches (300 mm) higher than top of pipe or conduit, unless otherwise indicated.

C. Trench Bottoms: Excavate trenches 4 inches (100 mm) deeper than bottom of pipe elevation to allow for bedding course. Hand excavate for bell of pipe.
   1. Excavate trenches 6 inches (150 mm) deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

3.5 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill may be used when approved by Geotechnical Engineer.
   1. Fill unauthorized excavations under other construction or utility pipe as directed by Geotechnical Engineer.

3.6 STORAGE OF SOIL MATERIALS

A. Stockpile borrow materials and satisfactory excavated soil materials. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
   1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.
   2. Placement of excavated material from trenches should be placed on the uphill side of the trench in order to minimize soil erosion in the event of a rain storm.

3.7 UTILITY TRENCH BACKFILL

A. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

B. Place and compact initial backfill of subbase material, free of particles larger than 1 inch (25 mm), to a height of 12 inches (300 mm) over the utility pipe or conduit.
   1. Carefully compact material under pipe haunches and bring backfill evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of utility system.

C. Coordinate backfilling with utilities testing.

D. Place and compact final backfill of satisfactory soil material to final subgrade.

EXCAVATION AND BACKFILLING
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E. Install detectable warning tape directly above utilities, 12 inches (300 mm) below finished grade, except 6 inches (150 mm) below subgrade under pavements and slabs.

3.8 MOISTURE CONTROL
A. Moisture for all compaction except for pond liners shall be within 2% of optimum.

3.9 COMPACATION OF BACKFILLS AND FILLS
A. Compact non-structural areas to required cross sections and thickness to not less than 90 percent of maximum dry unit weight according to ASTM D 1557. Maximum lift thickness is 8-inches loose.

B. Compact structural, roadway, controlled fill slopes and parking areas to required cross sections and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 1557. Top 1 foot of pavement subgrade shall be compacted to 97% percent of maximum dry unit weight according to ASTM D 1557. A Minimum bearing capacity of material beneath footings shall be 2500 psf. Maximum lift thickness is 8 inches loose.

3.10 GRADING
A. General: Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
1. Provide a smooth transition between adjacent existing grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

3.11 FIELD QUALITY CONTROL
A. Testing Agency:
1. Frederick County will hire a qualified independent geotechnical engineering testing agency to perform field quality-control testing for compaction of structural fill and backfill, excluding storm water management facilities.
2. The Contractor shall hire a qualified independent geotechnical engineering testing agency to perform all other sampling, testing, and certifications required by the contract documents. The Contractor can elect to perform any or all sampling and testing for his own purposes. All regulatory testing and certifications are the responsibility of the Contractor. Contractor shall be
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responsible for notifying owner when testing will be required. A minimum of 24-hours advance notice is required.

B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earthwork only after test results for previously completed work comply with requirements.

C. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Engineer.

D. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:
   1. Trench Backfill: At each compacted initial and final backfill layer, at least one test for each 150 feet (46 m) or less of trench length, but no fewer than two tests.

E. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; re-compact and re-test until specified compaction is obtained.

3.12 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Protect underground utilities when making temporary crossings through the use of steel plates, mud mats, or other load distributing device.

C. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
   1. Scarify or remove and replace soil material to depth as directed by Engineer; reshape and re-compact.

D. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
   1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.
3.13 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Do not remove surplus satisfactory soil without Owners written consent. Remove waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property at an approved location.

3.14 TEST PITTING

A. Refer to SECTION 205 TEST PIT EXCAVATION of the MD SHA Standard Specifications for Construction Materials.

END OF SECTION 02300
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 piping and specialties for combined potable-water and fire-protection water service outside the building(s).

B. Contractor-furnished products include but are not limited to valves and roadway boxes, fittings, accessories, Class 52 ductile iron pipe, concrete vaults, that will be furnished to site, ready for installation.

1.3 DEFINITIONS

A. The following are industry abbreviations for plastic and rubber materials:

1. NP: Nylon.
2. PE: Polyethylene.
3. PP: Polypropylene.
4. PTFE: Polytetrafluoroethylene.
5. PVC: Polyvinyl chloride.

1.4 SYSTEM PERFORMANCE REQUIREMENTS

A. Minimum Working Pressures: The following are minimum pressure requirements for piping and specialties, unless otherwise indicated:


1.5 SUBMITTALS

A. Coordination Drawings: For piping and specialties including relation to other services in same area. Show piping and specialty sizes and valves, meter and specialty locations, and elevations.
B. Record Drawings: At Project closeout of installed water-service piping according to Division 1 Section "Contract Procedures."

C. Test Reports: As specified in "Field Quality Control" Article in Part 3.

D. Purging and Disinfecting Reports: As specified in "Cleaning" Article in Part 3.

1. Maintenance Data: For specialties to include in the maintenance manuals specified in Division 1. Include data for the following:
   a. Backflow preventers.
   b. Valves.
   c. Meters.

1.6 QUALITY ASSURANCE

A. Product Options: Drawings indicate size, profiles, and dimensional requirements of water-service piping specialties and are based on specific types and models indicated. Other manufacturers' products with equal performance characteristics may be considered. Refer to Division 1 Section "Product Requirements."

1. Comply with requirements of utility supplying water. Include tapping of water mains and backflow prevention.
4. Provide listing/approval stamp, label, or other marking on piping and specialties made to specified standards.
5. Listing and Labeling: Provide electrically operated specialties and devices specified in this Section that are listed and labeled.
6. The Terms "Listed" and "Labeled": As defined in NFPA 70, Article 100.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Preparation for Transport: Prepare valves, including fire hydrants, according to the following:

1. Ensure that valves are dry and internally protected against rust and corrosion.
2. Protect valves against damage to threaded ends and flange faces.
3. Set valves in best position for handling. Set valves closed to prevent rattling.
4. During Storage: Use precautions for valves, including fire hydrants, according to the following:
   a. Do not remove end protectors, unless necessary for inspection; then reinstall for storage.
   b. Protect from weather. Store indoors and maintain temperature higher than ambient dew-point temperature. Support off the ground or pavement in watertight enclosures when outdoor storage is necessary.
5. Handling: Use sling to handle valves and fire hydrants whose size requires handling by crane or lift. Rig valves to avoid damage to exposed valve parts. Do not use handwheels or stems as lifting or rigging points.
6. Deliver piping with factory-applied end-caps. Maintain end-caps through shipping, storage, and handling to prevent pipe-end damage and to prevent entrance of dirt, debris, and moisture.
7. Protect stored piping from moisture and dirt. Elevate above grade. Do not exceed structural capacity of floor when storing inside.
8. Protect flanges, fittings, and specialties from moisture and dirt.

1.8 PROJECT CONDITIONS
A. Perform site survey, research on-site water system, and verify existing utility locations. Contact utility-locating service for area where Project is located.
B. Verify that water-service piping may be installed to comply with original design and referenced standards.

1.9 SEQUENCING AND SCHEDULING
A. Coordinate connection to on-site water system.
B. Coordinate piping materials, sizes, entry locations, and pressure requirements with building water distribution piping.
C. Coordinate piping materials, sizes, entry locations, and pressure requirements with building fire-protection water piping.
D. Coordinate with other utility work.
E. Coordinate all utility work with the Owner.
PART 2 - PRODUCTS

2.1 MATERIALS

A. PIPES AND TUBES

1. General: Applications of the following pipe and tube materials are indicated in Part 3 "Piping Applications" Article.
2. Copper Tube: Type K ASTM B 88 (ASTM B 88M), seamless water tube, annealed temper shall be used at meter pit and service lateral as needed.
3. PE: The piping system shall be constructed using Polyethylene (PE) (PE3408/PE3608 AWWA C 901, NSF 14, ASTM D 3035).
4. The Contractor shall verify all dimensions of valves, special castings and fittings, pipe equipment, etc., so that all the pipe work performed will fit together properly and will conform to the arrangement as shown on the drawings.
5. All pressure pipe shall be rated for minimum of 200 p.s.i.
6. All pipe shall meet the requirements of NSF, International in accordance with Standard 61.

B. PIPE AND TUBE FITTINGS

1. General: Applications of the following pipe and tube fitting materials are indicated in Part 3 "Piping Applications" Article.
2. Cast-Copper-Alloy Flanges: ASME B16.24, Class 150 or 300, as required for system operating pressure.

C. JOINING MATERIALS

1. General: Applications of the following piping joining materials are indicated in Part 3 "Piping Applications" Article.
   a. Keyed Couplings: AWWA C606, consisting of ASTM A 536 ductile-iron housing with enamel finish, with synthetic-rubber gasket with central-cavity, pressure-responsive design, with carbon-steel bolts and nuts to secure grooved pipe and fittings and gasket suitable for hot water, unless otherwise indicated.
   b. Brazing Filler Metals: AWS A5.8, BCuP Series.
   c. Solder Filler Metal: ASTM B 32, Alloy Sn95, Alloy Sn94, or Alloy E, with 0.10 percent maximum lead content.
   d. Pipe Couplings: Iron-body sleeve assembly, fabricated to match OD of pipes to be joined.
      1) Sleeve: ASTM A 126, Class B, gray iron.
      2) Followers: ASTM A 47 (ASTM A 47M), malleable iron; or ASTM A 536, ductile iron.
3) Gaskets: Rubber.
4) Bolts and Nuts: AWWA C111.
5) Finish: Enamel paint.

e. Plastic Pipe-Flange Gasket, Bolts, and Nuts: Type and material recommended by piping system manufacturer, unless otherwise indicated.

D. VALVES

1. Nonrising-Stem, High-Pressure, Resilient-Seated Gate Valves, 3-Inch NPS (DN80) and larger: AWWA C509, ductile-iron body and bonnet; with bronze or ductile-iron gate, resilient seats, bronze stem, and stem nut. Include 250-psig (1725-kPa) minimum working-pressure design, interior coating according to AWWA C550, and push-on- or mechanical-joint ends.
   a. Provide steel tee-handle operating wrench with each valve box. Include tee handle with one pointed end, stem of length to operate valve, and socket-fitting valve-operating nut.

2. Valve Boxes: Cast-iron box with top section and cover with lettering "WATER," bottom section with base of size to fit over valve and barrel approximately 5 inches (125 mm) in diameter, and adjustable cast-iron extension of length required for depth of bury of valve.
   a. Provide steel tee-handle operating wrench with each valve box. Include tee handle with one pointed end, stem of length to operate valve, and socket-fitting valve-operating nut.

3. Tapping Sleeve and Tapping Valve: Complete assembly, including tapping sleeve, tapping valve, and bolts and nuts. Use sleeve and valve compatible with tapping machine.
   a. Tapping Sleeve: Cast- or ductile-iron, 2-piece bolted sleeve with flanged outlet for new branch connection. Sleeve may have mechanical-joint ends with rubber gaskets or sealing rings in sleeve body. Include sleeve matching size and type of pipe material being tapped and of outlet flange required for branch connection.

E. ANCHORAGES

6. Concrete Reaction Backing: MSHA Mix 1

PART 3 - EXECUTION

3.1 EARTHWORK
A. Refer to Division 2 Section "EXCAVATION AND BACKFILLILING" for excavation, trenching, and backfilling.

3.2 PIPING APPLICATIONS

A. Do not use flanges or keyed couplings for underground piping.
   
   1. Exception: Piping in boxes and structures, but not buried, may be joined with flanges or keyed couplings instead of joints indicated.

B. Combined Potable-Water and Fire-Protection Water-Service Piping: Use the following:
   
   1. 4- to 12-Inch NPS (DN150 to DN300): Ductile-iron, push-on-joint pipe; ductile-iron, push-on-joint fittings; and gasketed joints.
   2. 1/2- to 3- Inch NPS: PE Tube ASTM D2737.

3.3 VALVE APPLICATIONS

A. Drawings indicate valve types to be used.

3.4 JOINT CONSTRUCTION


C. Flanged Joints: Align flanges and install gaskets. Assemble joints by sequencing bolt tightening. Use lubricant on bolt threads.

D. Threaded Joints: Thread pipes with tapered pipe threads according to ASME B1.20.1, apply tape or joint compound, and apply wrench to fitting and valve ends into which pipes are being threaded.

E. Ductile-Iron, Keyed-Coupling Joints: Cut-groove pipes. Assemble joints with keyed couplings, gaskets, lubricant, and bolts according to coupling and fitting manufacturer's written instructions.

F. Restrained joints for valves and fittings shall be MegaLug® restrained joints and shall be installed in accordance with the manufacturer’s instructions.

3.5 PIPING SYSTEMS - COMMON REQUIREMENTS
A. General Locations and Arrangements: Drawings indicate general location and arrangement of piping systems. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated, unless deviations to layout are approved on Coordination Drawings.

B. Install piping at indicated slope.

C. Install components with pressure rating equal to or greater than system operating pressure.

D. Install piping free of sags and bends.

E. Locate groups of pipes parallel to each other, spaced to permit valve servicing.

F. Install fittings for changes in direction and branch connections.

G. Piping Connections: Unless otherwise indicated, make piping connections as specified below:

1. Install flanges, in piping 2-1/2-inch NPS (DN65) and larger, adjacent to flanged valves and at final connection to each piece of equipment with flanged pipe connection.

3.6 VALVE INSTALLATION

A. General Application: Use mechanical-joint-end valves for 3-inch NPS (DN80) and larger underground installation. Use threaded- and flanged-end valves for installation in pits. Use nonrising-stem UL/FM gate valves for installation with indicator posts. Use bronze corporation stops and valves, with ends compatible with piping, for 2-inch NPS (DN50) and smaller installation.

B. AWWA-Type Gate Valves: Comply with AWWA C600. Install underground valves with stem pointing up and with cast-iron valve box.

3.7 IDENTIFICATION INSTALLATION

A. Install continuous detectable underground warning tape during back-filling of trench for underground water-service piping. Locate 6 to 8 inches (150 to 200 mm) below finished grade, directly over piping.

B. Attach nonmetallic piping label permanently to main electrical meter panel.

3.8 FIELD QUALITY CONTROL
A. Piping Leak Tests: Conduct piping leak tests before joints are covered and after thrust blocks have sufficiently hardened. Fill pipeline 24 hours prior to testing and apply test pressure to stabilize system. Use only potable water.

B. Hydrostatic Leak Tests: Conduct the Hydrostatic Leak Test in accordance with AWWA C600-99 Installation of Ductile-Iron Water Mains and Their Appurtenances, Section 5.2, Table 6A at not less than 1.25 times working pressure at the highest point along the test section for a 2 hour duration with the pressure not varying more than +/- 5 psi for the duration of the test. Maximum allowable leakage per 1,000 feet of pipeline in gallons per hour shall be in accordance with Table 6A. If the test fails remake leaking joints with new materials and repeat test until leakage is within above limits.

C. Prepare reports for testing activities.

3.9 CLEANING AND DISINFECTION

A. Clean and disinfect water distribution piping as follows:

1. Use purging and disinfecting procedure prescribed by authorities having jurisdiction or, if method is not prescribed by authorities, use procedure described in AWWA C651.
2. Comply with NFPA 24 for flushing of piping. Flush piping system with clean, potable water until dirty water does not appear at points of outlet.
3. Submit water samples in sterile bottles to authorities having jurisdiction. Repeat procedure if biological examination shows evidence of contamination.
4. Prepare reports for purging and disinfecting activities.

END OF SECTION 02510
SECTION 02741
ASPHALT PAVING

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. Section Includes:
      1. Hot-mix asphalt paving.

1.3 UNIT PRICES
   A. Price Adjustment for Asphalt Binder: This project will follow the procedures discussed in
      Section 504.04.01 of Maryland State Highway Administration (MDSHA) Standard Specifications
      for Construction and Materials for price adjustments for asphalt binder.

1.4 DEFINITION
   A. Hot-Mix Asphalt Paving Terminology: Refer to ASTM D 8 for definitions of terms.

1.5 SUBMITTALS
   A. Product Data: For each type of product indicated. Include technical data and tested physical
      and performance properties.
      1. Job-Mix Designs: Certification, by authorities having jurisdiction, of approval of each job
         mix proposed for the Work.
      2. Job-Mix Designs: For each job mix proposed for the Work.
   B. Material Certificates: For each paving material, from manufacturer.
   C. Product Data: For each type of product indicated, include technical data and tested physical
      and performance properties.
      1. Pavement Design Mix for surface pave.
      2. Pavement Design Mix for base pave.
3. Aggregate subbase.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: A paving-mix manufacturer registered with and approved by Maryland State Highway Administration (MDSHA). Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of MDSHA for asphalt paving work.

1. Measurement and payment provisions and safety program submittals included in standard specifications do not apply to this Section.

B. The Contractor shall be responsible for hiring a qualified independent testing agency to perform all sampling, testing and certifications required by the contract documents. The Contractor can elect to perform any or all sampling and testing for his own purposes. All regulatory testing and certifications are the responsibility of the Contractor.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp, if rain is imminent or expected before time required for adequate cure, or if the following conditions are not met:

1. Prime Coat: Minimum surface temperature of 60 deg F
2. Tack Coat: Minimum surface temperature of 60 deg F
4. Asphalt Base Course: Minimum surface temperature of 40 deg F and rising at time of placement.
5. Asphalt Surface Course: Minimum surface temperature of 60 deg F at time of placement.

B. Pavement-Marking Paint: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 40 deg F (4.4 deg C) for oil-based material and 55 deg F (12.8 deg C) for water-based materials, and not exceeding 95 deg F (35 deg C).

PART 2 - PRODUCTS

2.1 AGGREGATES

A. General: Use materials and gradations that have performed satisfactorily in previous installations.
2.2 ASPHALT MATERIALS

A. Asphalt Binder: AASHTO M 320 or AASHTO MP 1a, PG 64-22.

B. Prime Coat: Asphalt emulsion prime coat complying with Maryland State Highway Administration (MDSHA) requirements.

C. Water: Potable.

D. Undersealing Asphalt: ASTM D 3141, pumping consistency.

2.3 AUXILIARY MATERIALS

A. Herbicide: Commercial chemical for weed control, registered by the EPA. Provide in granular, liquid, or wettable powder form.

B. Pavement-Marking Paint: MPI #32 Alkyd Traffic Marking Paint or MPI #97 Latex Traffic Marking Paint.


C. Glass Beads: AASHTO M 247, Type 1.

D. Sand: ASTM D 1073], Grade Nos. 2 or 3.

E. Paving Geotextile: AASHTO M 288, nonwoven polypropylene; resistant to chemical attack, rot, and mildew; and specifically designed for paving applications.

F. Joint Sealant: ASTM D 6690, Type II hot-applied, single-component, polymer-modified bituminous sealant.

2.4 MIXES

A. Hot-Mix Asphalt: Dense, hot-laid, hot-mix asphalt plant mixes approved by authorities having jurisdiction; designed according to procedures in AI MS-2, "Mix Design Methods for Asphalt Concrete and Other Hot-Mix Types"; and complying with the following requirements:
1. Provide mixes with a history of satisfactory performance in geographical area where Project is located.

2. Provide mixes complying with composition, grading, and tolerance requirements for Superpave mixes in accordance with Maryland State Highway Administration.

3. Base Course: Superpave 19.0 mm.

4. Surface Course: Superpave 9.5 mm.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that subgrade is dry and in suitable condition to begin paving.

B. Perform compaction testing on each lift of backfill.

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

D. Verify that utilities, traffic loop detectors, and other items requiring a cut and installation beneath the asphalt surface have been completed and that asphalt surface has been repaired flush with adjacent asphalt prior to beginning installation of imprinted asphalt.

3.2 PATCHING

A. Hot-Mix Asphalt Pavement: Saw cut perimeter of patch and excavate existing pavement section to sound base. Excavate rectangular or trapezoidal patches, extending 12 inches into adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Remove excavated material. Recompact existing unbound-aggregate base course to form new subgrade.

B. Tack Coat: Apply uniformly to vertical surfaces abutting or projecting into new, hot-mix asphalt paving at a rate of 0.05 to 0.15 gal./sq. yd.

1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.

2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

C. Patching: Fill excavated pavements with hot-mix asphalt base mix for full thickness of patch and, while still hot, compact to be flush with adjacent surface.

D. Patching: Partially fill excavated pavements with hot-mix asphalt base mix and, while still hot, compact. Cover asphalt base course with compacted, hot-mix surface layer finished flush with adjacent surfaces.
3.3 REPAIRS

A. Leveling Course: Install and compact leveling course consisting of hot-mix asphalt surface course to level sags and fill depressions deeper than 1 inch into existing pavements.
   1. Install leveling wedges in compacted lifts not exceeding 3 inches thick.

B. Crack and Joint Filling: Remove existing joint filler material from cracks or joints to a depth of 1/4 inch.
   1. Clean cracks and joints in existing hot-mix asphalt pavement.
   2. Use emulsified-asphalt slurry to seal cracks and joints less than 1/4 inch wide. Fill flush with surface of existing pavement and remove excess.
   3. Use hot-applied joint sealant to seal cracks and joints more than 1/4 inch wide. Fill flush with surface of existing pavement and remove excess.

3.4 SURFACE PREPARATION

A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.

B. Herbicide Treatment: Apply herbicide according to manufacturer’s recommended rates and written application instructions. Apply to dry, prepared subgrade or surface of compacted-aggregate base before applying paving materials.
   1. Mix herbicide with prime coat if formulated by manufacturer for that purpose.

C. Prime Coat: Apply uniformly over surface of compacted unbound-aggregate base course at a rate of 0.15 to 0.50 gal./sq. yd. Apply enough material to penetrate and seal but not flood surface. Allow prime coat to cure.
   1. If prime coat is not entirely absorbed within 24 hours after application, spread sand over surface to blot excess asphalt. Use enough sand to prevent pickup under traffic. Remove loose sand by sweeping before pavement is placed and after volatiles have evaporated.
   2. Protect primed substrate from damage until ready to receive paving.

D. Tack Coat: Apply uniformly to surfaces of existing pavement at a rate of 0.05 to 0.15 gal./sq. yd. (0.2 to 0.7 L/sq. m).
   1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
   2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

3.5 PAVING GEOTEXTILE INSTALLATION
A. Apply tack coat uniformly to existing pavement surfaces at a rate of 0.20 to 0.30 gal./sq. yd.

B. Place paving geotextile promptly according to manufacturer's written instructions. Broom or roll geotextile smooth and free of wrinkles and folds. Overlap longitudinal joints 4 inches and transverse joints 6 inches.

1. Protect paving geotextile from traffic and other damage and place hot-mix asphalt paving overlay the same day.

3.6 HOT-MIX ASPHALT PLACING

A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand to areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.

1. Place hot-mix asphalt base course per minimum this section or match existing pavement thickness:
   a. 4” base in 2 lifts
   b. 2” surface

2. Place hot-mix asphalt surface course in single lift.

3. Spread mix at minimum temperature of 250 deg F.

4. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes unless otherwise indicated.

5. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.

B. Place paving in consecutive strips not less than 10 feet wide unless infill edge strips of a lesser width are required.

1. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Complete a section of asphalt base course before placing asphalt surface course.

C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

3.7 JOINTS

A. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt course.
1. Clean contact surfaces and apply tack coat to joints.

2. Offset longitudinal joints, in successive courses, a minimum of 6 inches.

3. Offset transverse joints, in successive courses, a minimum of 24 inches.

4. Construct transverse joints at each point where paver ends a day’s work and resumes work at a subsequent time. Construct these joints [using either "bulkhead" or "papered" method according to Al MS-22, for both "Ending a Lane" and "Resumption of Paving Operations."]

5. Compact joints as soon as hot-mix asphalt will bear roller weight without excessive displacement.

6. Compact asphalt at joints to a density within 2 percent of specified course density.

3.8 COMPACTION

A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.

1. Complete compaction before mix temperature cools to 185 deg F.

B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.

C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:

1. Average Density: 96 percent of reference laboratory density according to ASTM D 6927, but not less than 94 percent nor greater than 100 percent.

2. Average Density: 92 percent of reference maximum theoretical density according to ASTM D 2041, but not less than 90 percent nor greater than 96 percent.

D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.

E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.

F. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.
G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.9 INSTALLATION TOLERANCES

A. Pavement Thickness: Compact each course to produce the thickness indicated within the following tolerances:
   1. Base Course: Plus or minus 1/2 inch.
   2. Surface Course: Plus 1/4 inch, no minus.

B. Pavement Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot) straightedge applied transversely or longitudinally to paved areas:
   1. Base Course: 1/4 inch.
   2. Surface Course: 1/8 inch.
   3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.

C. Traffic-Calming Devices: Compact and form asphalt to produce the contour indicated and within a tolerance of plus or minus 1/8 inch of height indicated above pavement surface.

3.10 DISPOSAL

A. Except for material indicated to be recycled, remove excavated materials from Project site and legally dispose of them in an EPA-approved landfill.
   1. Do not allow milled materials to accumulate on-site.

END OF SECTION 02741
SECTION 15050
COMMON WORK RESULTS FOR PLUMBING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this and the other sections of Division 15.

1.2 SUMMARY

A. Section includes:

1. General administrative and procedural requirements, as well as the following basic plumbing materials and methods.
2. Submittals.
3. Record documents.
4. Operation and Maintenance manuals.
5. Plumbing installations.
6. Cutting and patching.
7. Equipment nameplate data requirement.
8. Labeling and identifying mechanical systems and equipment is specified in Division 15 – Section: “Identification for Plumbing Piping and Equipment.”
9. Installation requirements common to equipment specification Sections.

1.3 ACRONYMS

A. The following list of abbreviations are utilized within the specifications and are provided as a reference:

ADA - American Disability Act
ANSI - American National Standards Institute
ASHRAE - American Society of Heating, Refrigerating and Air Conditioning Engineers
ASME - American Society of Mechanical Engineers
ASTM - American Society for Testing and Materials
AWS - American Welding Society
AWWA - American Water Works Association
IBC - International Building Code
CS - Commercial Standard
CSA - Canadian Standards Association
IBR - Institute of Boiler and Radiator Manufacturers
IEEE - Institute of Electrical and Electronics Engineers
IMC - International Mechanical Code
IPC - International Plumbing Code
MOSHA - Maryland Occupational Safety and Health Administration
MSSP - Manufacturers Standards Society of the Valve and Fittings Industry
NEC - National Electrical Code
NEMA - National Electrical Manufacturers Association
NFPA - National Fire Protection Association
OSHA - Occupational Safety and Health Administration
1.4 DEFINITIONS

A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term product includes the terms material, equipment, system, and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation, shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.

2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.

3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Substitutions: Changes proposed by Contractor in products, materials, equipment, and methods of construction required by the Contract Documents.

C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named, or a product is accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

D. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.

E. Extended Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

1.5 SYSTEM DESCRIPTION

A. Design Requirements: Contract drawings are generally diagrammatic and do not indicate all offsets, fittings, transitions, access panels and other specialties required.

1. Furnish and install all items as may be required at no additional cost to fit the work to the conditions encountered.

2. Arrange piping, equipment and other work generally as shown on the contract drawings, providing proper clearances and access.

3. Where departures are proposed because of field conditions or other causes, prepare and submit detailed shop drawing submittal for approval in accordance with Submittals specified below.
4. Subject to the provisions of Division 1, Architect may make reasonable changes in location of equipment piping and ductwork up to the time of rough-in or fabrication.

1.6 SUBMITTALS

A. General: Submit each item in this Section according to the conditions of the contract and Division 1 Specification Section “Submittals”.

B. Shop Drawings and Product Data:

1. Clearly identify all submittals:
   a. Indicate intended application, location, etc.
   b. Each submittal shall indicate the associated specification section, and paragraphs. Do not combine product data and shop drawing submittals from different spec sections into a single submittal package, even though they may be the same distributor, vendor or part of a single material order.
   c. Clearly indicate the exact type, model number, size and special features of the proposed item.
   d. Include catalog spec sheets to completely describe proposed equipment.
   e. Factory order forms only showing the required capacities are not acceptable.
   f. Identify all options furnished to meet specifications.
   g. If product is within system supplying fixture intended to dispense potable water for human consumption, including drinking and cooling, submittals shall indicate that product is “lead free”, containing not more than a weighted average of 0.25% lead with respect to the wetted surfaces.
   h. Solder and flux for soldered joints in potable water piping shall be “lead free”, containing not more than 0.2% lead.
   i. The Architect shall not select equipment ratings and/or options. Submittals not properly marked shall be returned without review.

C. Product Substitutions: Comply with requirements of Division 1.

D. Comparable Products Submission:

1. Document each request for a proposed comparable product with supporting data substantiating compliance of proposed product with Basis-of-Design product.
2. Use the attached “Comparable Product Submittal Form” in addition to the requirements specified herein.
3. Comparable products will not be reviewed without completion of the attached form.

E. Closeout Submittals:

1. Record Drawings: Prepare record documents in accordance with the requirements in Division 1 – Section: “Closeout Procedures”. In addition to the requirements specified in Division 1, indicate the following installed conditions:
   a. Mains and branches of piping systems, with valves and control devices located and numbered, concealed unions located, and with items requiring maintenance located (i.e., traps, strainers, expansion compensators, tanks, etc.). Valve location diagrams, complete with valve tag chart. Refer to Division 15 – Section: “Identification for Plumbing Piping and Equipment”. Indicate actual inverts and horizontal locations of
WILLIAMSPORT HIGH SCHOOL – WATER LINE REPLACEMENT

1. Record the locations and invert elevations of underground installations.

b. Equipment locations (exposed and concealed), dimensioned from prominent building lines.

c. Approved substitutions, Contract Modifications, Responses to Contractor’s Request for Information, and actual equipment and materials installed.

d. Record the locations and invert elevations of underground installations.

2. Operation and Maintenance Data: Prepare operation and maintenance data in accordance with Division 1 Section: "Closeout Procedures". In addition to the requirements specified in Division 1, include the following information for equipment items:

   a. List of systems and equipment requiring service manuals.

   b. Description of function, normal operating characteristics and limitations, performance curves, engineering data and tests, and complete nomenclature and commercial numbers of replacement parts.

   c. Manufacturer's printed operating procedures to include start-up, break-in, and routine and normal operating instructions; regulation, control, stopping, shutdown, and emergency instructions; and summer and winter operating instructions.

   d. Maintenance procedures for routine preventative maintenance and troubleshooting; disassembly, repair, and reassembly; aligning and adjusting instructions.

   e. Servicing instructions and lubrication charts and schedules.

   f. Systems and Equipment test reports.

3. Commissioning Report

   F. Color Selection: Color of finishes shall be as selected by the Architect. Submit colors of factory finished equipment for acceptance prior to ordering.

   G. Products and Materials:

   1. Submit complete descriptive data for all materials as follows:

      a. Material specifications.

      b. Data sheets.

      c. Samples.

      d. Capacity ratings.

      e. Performance curves.

      f. Operating characteristics.

      g. Catalog cuts.

      h. Dimensional drawings.

      i. Wiring diagrams.

      j. Lead Free, for potable water service.

      k. Installation instruction.

      l. Any other information necessary to indicate compliance with contract documents.

   2. Edit submittal data specifically for application to this project.

   3. Submit actual operating conditions and characteristics for all equipment.

   4. Catalogs or catalog cuts are not acceptable unless the particular item and all relative data has been marked in such a manner as to be clearly defined.

   5. Color of finishes shall be as selected by the Architect. Submit colors of factory finished equipment for acceptance prior to ordering.
6. No plumbing item shall be fabricated, purchased, delivered to the site or installed, until reviewed by the Architect.
   a. After the proposed materials have been approved, no substitution will be permitted except where approved by the Architect.
7. Provide shop drawing and product data submittals as indicated under individual specification sections.
8. Provide any other equipment requested by the Architect.

1.7 QUALITY ASSURANCE
A. Underwriter’s Laboratory (UL) Requirements: All equipment containing electrical components and provided under Division 15 shall bear the Underwriter’s Laboratory (UL) label, as a complete packaged system.
   1. Equipment not provided with a UL label shall be tested in the field, certified and provided with a listed label at the installer’s expense.
      a. Field testing shall be performed by a testing agency approved by the authority having jurisdiction.
      b. Provide services of a UL recognized, independent Electrical Testing Laboratory (ETL) to provide field inspection and testing. Provide and ETL Label on all such equipment.
B. Fire Safe Materials: Unless otherwise indicated, materials shall conform to UL, National Fire Protection Agency (NFPA) or American Society for Testing and Materials (ASTM) standards for fire safety with smoke and fire hazard rating not exceeding flame spread of 25 and smoke developed of 50.
C. All plumbing products and materials shall be listed by a third party certification agency.
   1. Each length of pipe and each pipe fitting, trap, fixture, material and device utilized in a plumbing system shall bear the identification of the manufacturer and any markings required by the applicable referenced standards.

1.8 DELIVERY, STORAGE, AND HANDLING
A. Comply with Division 1 Section: “Transportation and Handling” and Section: “Storage and Protection”.

1.9 PROJECT CONDITIONS
A. Existing Conditions: Prior to preparing the bid, visit the site and become familiar with all existing conditions. Make all necessary investigations as to locations of utilities and all other matters, which can affect the work. No additional compensation will be made for failure to determine the conditions under which the work will be performed.
B. Outages
   1. All plumbing outages which will interfere with the normal use of the building in any manner shall be done at such times as shall be mutually agreed upon with the Owner.
   2. Unless otherwise specified, outages of any services required for the performance of this contract and affecting areas other than the immediate work area shall be scheduled with the Owner at least ten days (10) days in advance. All such
outages shall be performed on other than normal work hours, Monday through Friday 8 a.m. to 5 p.m.
3. The bid price shall include the cost of all premium time required for outages and other work which interferes with the normal use of the building.
4. The operation of valves or switches required to achieve an outage shall be accomplished by the Owner. Unauthorized operation of valves, power switches, or other control devices shall not be permitted.

1.10 SEQUENCING
A. Coordinate plumbing equipment installation with other building components.
B. Arrange for chases, slots, and openings in building structure during progress of construction to allow for plumbing installations.
C. Coordinate the installation of required supporting devices and set sleeves in poured-in-place concrete and other structural components as they are constructed.
D. Sequence, coordinate, and integrate installations of plumbing materials and equipment for efficient flow of the Work. Coordinate installation of large equipment requiring positioning prior to closing in the building.
E. Coordinate connection of electrical services.
F. Coordinate connection of plumbing systems with exterior underground and overhead utilities and services. Comply with requirements of governing regulations, franchised service companies, and controlling agencies.
G. Coordinate requirements for access panels and doors where plumbing items requiring access are concealed behind finished surfaces.
H. Coordinate installation of identifying devices after completing covering and painting where devices are applied to surfaces. Install identifying devices prior to installing acoustical ceilings and similar concealment.

1.11 PRODUCT WARRANTIES
A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
   1. Manufacturer's Standard Form: Modified to include project-specific information and properly executed.
   2. Refer to Divisions 2 through 16 Sections for specific content requirements and particular requirements for submitting special warranties.
C. Submittal Time: Comply with requirements in Division 1 Section: “Closeout Procedures.”

1.12 DISCREPANCIES
A. Where discrepancies occur between the drawings and specifications or within either
document itself, the item or arrangement of better quality, greater quantity or higher cost shall be included in the contract price. The Architect shall decide on the item and manner in which the work shall be provided, based on the design intent of the documents.

1.13 ELECTRONIC CAD DOCUMENTS

A. Requests for electronic CAD documents will be accommodated to the contractors and installers upon their completion of Kibart’s Electronic Document Release of Liability Form.

PART 2 PRODUCTS

2.1 PRODUCT SELECTION

A. General Product Requirements: Provide products that comply with Contract Documents that are undamaged and new at time of installation.

   1. Provide products complete with accessories, trim, finish, safety guards, and other devices and details needed for complete installation and intended use and effect.
   2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
   3. Where products are accompanied by the term as selected, Architect will make selection.
   4. Where products are accompanied by the term match sample, sample to be matched is Architect's.

B. General Compliance Requirements: Compliance requirements for individual products, as indicated in Contract Documents, are multiple in nature and may include generic descriptions, performance requirements, compliance with reference standards, conformance with graphic details and other similar forms and methods of indicating requirements, all of which must be complied with.

C. Procedures for Selecting Products: Contractor's options for selecting products are limited by Contract Document requirements, and are not controlled by industry traditions or procedures experienced by Contractor on previous construction projects.

D. Products specified by Reference Standards, Codes and Regulations: Select from among products, which can be shown to comply with referenced documents.

E. Products specified by Naming Products and Manufacturers: Select from among products listed.

F. Products specified by Naming One Manufacturer's Product as the Basis-of-Design with Reference to Other Manufacturers: Select either the specified Basis-of-Design product or an approved comparable product by one of the other named manufacturers.

   1. Comply with provisions in Comparable Products Article to obtain approval for use of a comparable product by one of the named manufacturers.

G. Products specified by Naming One Manufacturer's Product and Indicating Option of Selecting Comparable Products by stating or Approved Equivalent or similar language: Select either the specified product or an approved comparable product.

   1. Comply with provisions in Comparable Products Article to obtain approval for use
of a comparable product by one of the named or un-named manufacturers.

H. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and, matches Architect’s sample. Architect’s decision will be final on whether proposed product matches satisfactorily.

I. Visual Selection Specification: Where Specifications include the phrase as selected from manufacturer’s standard colors, patterns, textures or similar phrase, select a product that complies with other specified requirements. Architect will select color, pattern, and texture.

1. Standard Range: Where Specifications include the phrase standard range of colors, patterns, textures or similar phrase, Architect will select color, pattern, or texture from manufacturer’s product line that does not include premium items.

2. Full Range: Where Specifications include the phrase full range of colors, patterns, textures or similar phrase, Architect will select color, pattern, or texture from manufacturer’s product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

A. Where Basis-of-Design products are specified by name, submit the following, in addition to other required submittals, to obtain approval of a comparable product by one of the named manufacturers:

1. Evidence that the proposed product does not require extensive revisions to the Contract Documents that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work. Use the attached Comparable Products Submittal Form in addition to requirements listed herein.

2. Detailed comparison of significant qualities of proposed product with the Basis-of-Design product in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, serviceability, visual effect, and specific features and requirements indicated.

3. Evidence that proposed product provides specified warranty.

4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.

5. Samples, if requested.

PART 3 EXECUTION

3.1 INSTALLATION

A. General: Sequence, coordinate, and integrate the various elements of mechanical systems, materials, and equipment. Comply with the following requirements:

1. Coordinate mechanical systems, equipment, and materials installation with other building components.

2. Verify all dimensions by field measurements.

3. Sequence, coordinate, and integrate installations of plumbing materials and equipment for efficient flow of the Work. Give particular attention to large equipment requiring positioning prior to closing in the building.

4. Where systems, materials and equipment are intended for overhead installation, and where mounting heights are not detailed or dimensioned, install systems, materials, and equipment to provide the maximum headroom possible.

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15050-8
5. Install systems, materials, and equipment to conform with approved submittal data, including coordination drawings, to greatest extent possible. Conform to arrangements indicated by the Contract Documents, recognizing that portions of the Work are shown only in diagrammatic form. Where coordination requirements conflict with individual system requirements, refer conflict to the Architect.

6. Install systems, materials, and equipment level and plumb, parallel and perpendicular to other building systems and components.

7. Install plumbing equipment to facilitate servicing, maintenance, and repair or replacement of equipment components. As much as practical, connect equipment for ease of disconnecting, with minimum of interference with other installations. Extend grease fittings to an accessible location.

8. Install systems, materials, and equipment giving right-of-way priority to systems required to be installed at a specified slope.

B. Erection of Metal Supports and Anchorage

1. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor mechanical materials and equipment.


C. Erection of Wood Supports and Anchorage

1. Cut, fit, and place wood grounds, nailers, blocking, and anchorage to support and anchor mechanical materials and equipment.

2. Select fastener sizes that will not 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 members.

3. Attach to substrates as required to support applied loads.

D. Lintels

1. Lintels shall be provided for openings in masonry, brick, concrete, etc. walls to accommodate work of this division.

   a. Lintels shall be provided under this division when not being provided under other divisions. Lintels shall be approved by the Architect.

3.2 CUTTING AND PATCHING

A. General: Perform cutting and patching in accordance with Division 1 – Section: “Execution”. In addition to the requirements specified in Division 1, the following requirements apply:

1. Protection of Installed Work: During cutting and patching operations, protect adjacent installations.

B. Perform cutting, fitting, and patching of plumbing equipment and materials required to:

1. Uncover Work to provide for installation of ill-timed Work.

2. Remove and replace defective Work.

3. Remove and replace Work not conforming to requirements of the Contract Documents.

4. Remove samples of installed Work as specified for testing.

5. Install equipment and materials in existing structures.

6. Upon written instructions from the Architect, uncover and restore Work to provide
for Architect observation of concealed Work.

C. Cut, remove and legally dispose of selected mechanical equipment, components, and materials as indicated, including but not limited to removal of mechanical piping, heating units, plumbing fixtures and trim, and other mechanical items made obsolete by the new Work.

D. Protect the structure, furnishings, finishes, and adjacent materials not indicated or scheduled to be removed.

E. Provide and maintain temporary partitions or dust barriers adequate to prevent the spread of dust and dirt to adjacent areas.

F. Patch finished surfaces and building components using new materials specified for the original installation and using experienced Installers. Installers' qualifications refer to the materials and methods required for the surface and building components being patched.

3.3 PLUMBING DEMOLITION

A. Disconnect, demolish, and remove work specified under Division 15 and as indicated. Remove pipes and ducts back to the active pipe and duct to remain and cap.

B. Where pipe, ductwork, insulation, or equipment to remain is damaged or disturbed, remove damaged portions and install new products of equal capacity and quality.

C. Accessible Work: Remove indicated exposed pipe and ductwork in its entirety.

D. Abandoned Work: Cut and remove buried pipe abandoned in place, 2 inches beyond the face of adjacent construction. Cap and patch surface to match existing finish.

E. Removal: Remove indicated equipment from the Project site.

F. Temporary Disconnection: Remove, store, clean, reinstall, reconnect, and make operational equipment indicated for relocation.

3.4 CONSTRUCTION

A. Cutting, Welding, Burning

1. Before commencing any cutting, welding, burning, brazing (pipe sweating), obtain a hot work permit from Environmental Health and Safety.

2. The hot work permit copy shall remain on the job site at the hot work location until such work is completed at which time the permit shall be returned to Environmental Health and Safety.

3.5 PENETRATION OF WATERPROOF CONSTRUCTION

A. Coordinate the work to minimize penetration of waterproof construction, including roofs, exterior walls and interior waterproof construction.

B. Furnish and install drains, curbs, vent assemblies, sleeves, flashing, etc. specifically designed for application to the particular construction. Install system in accordance with the roofing manufacturer's instructions.
3.6 EXCAVATION AND BACKFILLING

A. General
   1. Perform all necessary excavation, for installation of work under Division 15, in accordance with Division 2.

3.7 CLEANING

A. Clean surfaces prior to application of insulation, adhesives, coating, and paint.
B. Provide factory applied finish where specified.
C. Protect all finishes, and restore all finishes to their original condition if damaged as a result of work under Division 15.
D. Remove all construction marking and writing from exposed equipment, ductwork, piping and building surfaces.
E. General: General cleaning during construction is required by the General Conditions and included in Section Temporary Facilities.
F. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.
G. Remove all plumbing clipping, wiring, nuts, bolts, etc. left on top of ceilings and ceiling tiles.

3.8 PROTECTION

A. Protect work, material and equipment from weather and construction operations before and after installation.
B. Properly store and handle all materials and equipment.
C. Cover temporary openings in piping, ductwork and equipment to prevent the entrance of water, dirt, debris, and other foreign matter.

3.9 LUBRICATION

A. All bearings, motors and all equipment requiring lubrication shall be provided with accessible fittings.
B. Before turning over the equipment to the Owner, provide the following:
   1. Fully lubricate each item of equipment.
   2. Provide 1 year's supply of lubricant for each type of lubricant.
   3. Provide complete written lubricating instructions, together with diagram locating the points requiring lubrication.
C. Motors and equipment shall be provided with grease lubricated roller or ball bearings with Alemite or equal extended grease fittings and drain plugs.
3.10 ELECTRICAL WORK

A. It is the intent to provide a complete and operational system. The work between Division 15 and 16 is complementary and is meant to produce a single and operating system. Contractor shall make its own determination as to the distribution of responsibility among the various trades.

B. All electrical work performed under Division 15 shall be provided in accordance with Division 16.

3.11 PROVISIONS FOR ACCESS

A. Furnish and install adequate access to all plumbing components. The following list shall be used as a guide only:

1. Plumbing equipment.
2. Valves.
3. Cleanouts.
4. Traps.

B. Access shall be adequate as determined by the Architect.

C. Refer to contract drawings where panels have been specifically located.

D. Provide additional panels for adequate access as indicated in paragraph A above.

E. Where access is by means of liftout ceiling tiles or panels mark each panel using small color-coded or numbered tabs. Provide an index chart for identification. Place markers in corner of tile.

3.12 OPERATION OF EQUIPMENT

A. Clean all systems and equipment prior to initial operation for testing and balancing.

B. Do not operate equipment unless all proper safety devices or controls are operational.

C. Provide all maintenance and service for equipment, which is operated during construction.

D. Where specified and otherwise required, provide the services of a manufacturer's factory trained service organization to start the equipment.

E. Do not use mechanical systems for temporary services during construction unless authorized in writing by the Architect.

   1. Where such authorization is granted, temporary use of equipment shall not limit or otherwise affect warranties or guarantees of the work.

F. Upon completion of work, clean and restore all equipment to new conditions and replace all filters.
3.13 DEMONSTRATION

A. Demonstrate operation and maintenance of equipment and systems to Owner’s personnel a minimum two (2) weeks prior to date of final inspection.
   1. For equipment requiring seasonal operation, perform instructions for other seasons at the same time.
   2. Training period shall be performed within 1 - two week period.

B. Use operation and maintenance manuals and video as basis of instruction. Review contents of manual and video with personnel in detail to explain all aspects of operation and maintenance.

C. Demonstrate the following:
   1. Start up.
   2. Operation.
   3. Control.
   4. Adjustment.
   5. Trouble shooting.
   7. Maintenance.
   8. Shutdown.

D. Provide at least 8 hours straight time instruction to the operating personnel.
   1. This instruction period shall consist of not less than one-8 hour day.
   2. Time of instruction shall be designated by the Owner.
   3. This instruction shall be in addition to instructional requirements of specific equipment specified elsewhere in Division 15.
3.14 WALL AND FLOOR PENETRATION

A. All penetrations of partitions, walls and floors by ducts, piping or conduit under Division 15 shall be sealed and caulked. Provide U.L. listed fire stopping systems at penetrations through fire rated walls.

B. Sealing of Annular Spaces at Penetrations.

1. The annular spaces between the outside of a pipe and the inside of a pipe sleeves, or between the outside of a pipe and an opening in a building envelope wall, floor, or ceiling assembly penetrated by a pipe shall be sealed in an approved manner with caulking material or closed with a gasketing system. The caulking material, foam sealant, or gasketing system shall be designed for the conditions at the penetration location and shall be compatible with the pipe, sleeve and building materials in contact with the sealing materials. Annular spaces created by pipes penetrating fire resistance-rated assemblies or membranes of such assemblies shall be sealed or closed in accordance with the International Building Code.

3.15 EQUIPMENT PROVIDED UNDER ANOTHER DIVISION AND BY OTHERS

A. Make all system connections required to equipment furnished and installed under another division and by others.

B. It shall be the responsibility of the Contractor to coordinate all necessary data from the equipment supplied under other Divisions.

3.16 MECHANICAL EQUIPMENT SERVICE PLATFORMS

A. Where mechanical equipment is located on a roof or elevated structure that requires access such that personnel will have to climb higher than 16 feet above grade to access the equipment, a means to access the equipment shall be provided.

B. Provide catwalks around the entire perimeter of equipment to match manufacturer required clearance area. Minimum 24" from perimeter of unit.

C. Provide side edge railings that extend above the catwalk not less than 30" above the catwalk.

3.17 PROJECT PUNCH OUT

A. Architect/Engineer will perform punch out reviews and will provide the Contractor with a list of punch list items to be completed before contract close out. Each and every punch list item shall be initialed and dated by the Contractor when the work is complete. The Architect/Engineer will not perform any punch list verification until all items have been completed, initialed, dated and the list returned to the Architect/Engineer. If any items have been initialed as being completed by the Contractor and the Architect/Engineer determines that the work is not complete, the Architect/Engineer shall be reimbursed by the Contractor at his regular hourly rate for any and all items requiring revisiting of the site by the Architect/Engineer. Reimbursement will be made by deducting the Architect/Engineer fee from the Contractor’s final payment.
The Contractor shall prepare a Table of Compliance Form similar in format to the sample shown below to facilitate and expedite the Shop Drawing and Product Data Review. Failure to comply with this requirement will be basis for rejecting the Submittal.

The Table of Compliance Form will list and compare the performance parameters as the submitted equipment to that listed on equipment schedule and specifications as basis of design. All non-compliance items (differences) must be explained in full, indicating their impact, if any, on maintainability, durability, energy use, operating costs, code compliance and environmental considerations.

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<thead>
<tr>
<th>BASIS OF DESIGN SAMPLE ITEMS</th>
<th>DRAWINGS SUBMITTED</th>
<th>EXPLANATION</th>
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<td>Flow (Cfm Or Gpm)</td>
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<td>Ext. Static Press.</td>
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<td>Head (Ft.)</td>
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<tr>
<td>Electrical Requirements</td>
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<td>Cooling Capacity</td>
<td></td>
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<tr>
<td>Heating Capacity</td>
<td></td>
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<tr>
<td>Discharge Air Temp.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Type &amp; Eff.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment Eff. (Eer)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sound Data</td>
<td></td>
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<tr>
<td>Weights</td>
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<tr>
<td>Etc.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Specifications:

A. Quality assurance compliance (ARI)
   (ASHRAE)
   (AMCA)
   (UL)

B. Specifications: List each and every specification paragraph

C. Etc.

Other:

END OF SECTION
PART 1  GENERAL

1.1 RELATED DOCUMENTS

A. Drawing and general provisions of the Contract, including the General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section and the other Sections of Division 15.

1.2 SUMMARY

A. General Requirements:

1. Incorporate in construction pipe hangers and supports to manufacturer’s recommendations utilizing manufacturer’s regular production components, parts, and assemblies.
2. Comply with maximum load ratings with consideration for allowable stresses prescribed by ASME B31.1 or MSS SP-58.
3. Provide support, guides and anchors that do not transmit unacceptable heat and vibration to building structure.
4. Installation of pipe hangers and supports shall be based upon the overall design concept of the piping system. The support system shall provide for control the free movement of piping including its movement in relation to that connected equipment.
5. Provide for vertical adjustments after installation of supported material and during commissioning, where feasible, to ensure pipe is at design elevation and slope.

B. Section Includes:

1. Pipe hangers and supports.
2. Hanger rods.
3. Inserts.
4. Flashing.
5. Acoustical Sealant
6. Mechanical sleeve seals.
7. Formed steel channel.
8. Firestopping relating to plumbing work.
10. Equipment bases and support.
11. Non-penetrating rooftop pipe hangers and support.

C. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 7 Section: “Penetration Firestopping”: Product requirements for firestopping for placement by this section.
2. Division 15 Section: “Common Work Results for Plumbing”.
3. Division 15 Section: “General Duty Valves for Plumbing Piping”.

HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT
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4. Division 15 Section: “Refrigerant Piping”.
5. Division 15 Section: “Plumbing Insulation”.
6. Division 9 Section: “Painting”: Product and execution requirements for painting specified by this section.
7. Division 15 Section: “Pipes and Tubes for Plumbing Piping and Equipment”: Execution requirements for placement of hangers and supports specified by this section.

1.3 DEFINITIONS

A. Terminology used in this Section is defined in Manufacturer’s Standardization Society Specification - 90, “Valve and Fittings Standards,” 2000.

1.4 REFERENCES

(Unless otherwise noted, references apply to “latest editions.”)

A. American Society of Mechanical Engineers:

1. ASME B31.1 - Power Piping.
2. ASME B31.5 - Refrigeration Piping.
3. ASME B31.9 - Building Services Piping.

B. ASTM International:


C. American Welding Society:

1. AWS D1.1 - Structural Welding Code - Steel.

D. FM Global:


E. Manufacturers Standardization Society of the Valve and Fittings Industry:

1. MSS SP 58 - Pipe Hangers and Supports - Materials, Design and Manufacturer.
2. MSS SP 69 - Pipe Hangers and Supports - Selection and Application.
3. MSS SP 89 - Pipe Hangers and Supports - Fabrication and Installation Practices.
4. MSS SP 90 – Values and Fitting Standards.
F. Underwriters Laboratories Inc.:
   3. UL 1479 - Fire Tests of Through-Penetration Firestops.
   5. UL - Fire Resistance Directory.

G. Intertek Testing Services (Warnock Hersey Listed):
   1. WH - Certification Listings.

1.5 SUBMITTALS

A. Division 1 Section: “Submittals”: Submittal procedures.

B. Shop Drawings: Indicate system layout with location including critical dimensions, sizes, and pipe hanger and support locations and detail of trapeze hangers.

C. Product Data:
   1. Hangers and Supports: Submit manufacturers catalog data including load capacity.
   2. Firestopping: Submit data on product characteristics, performance and limitation criteria.

D. Firestopping Schedule: Submit schedule of opening locations and sizes, penetrating items, and required listed design numbers to seal openings to maintain fire resistance rating of adjacent assembly.

E. Design Data: Indicate load carrying capacity of trapeze, multiple pipe, and riser support hangers. Indicate calculations used to determine load carrying capacity of trapeze, multiple pipe, and riser support hangers. Submit sizing methods sealed by a registered professional engineer.

F. Manufacturer’s Installation Instructions:
   1. Hangers and Supports: Submit special procedures and assembly of components.
   2. Firestopping: Submit preparation and installation instructions.

G. Manufacturer’s Certificate: Certify products meet or exceed specified requirements.

H. Firestopping Engineering Judgments: For conditions not covered by UL or WH listed designs, submit judgments by licensed professional engineer suitable for presentation to authority having jurisdiction for acceptance as meeting code fire protection requirements.

I. Welder certificates signed by Contractor certifying that welders comply with requirements specified under the “Quality Assurance” Article.

J. Submission of samples may be requested for each type of hanger device. After approval, samples shall be returned for installation at job site.

1.6 QUALITY ASSURANCE

1. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

B. Qualify welding processes and welding operators according to ASME "Boiler and Pressure Vessel Code," Section IX, "Welding and Brazing Qualifications."

C. NFPA Compliance: Comply with NFPA 13, "Installation of Sprinkler Systems," 1999, for hangers and supports used as components of fire protection systems.

D. Listing and Labeling: Provide hangers and supports that are listed and labeled as defined in NFPA 70 “Definitions.”


E. Licensed Operators: Use operators that are licensed by powder-operated tool manufacturers to operate their tools and fasteners.

F. Supply and install incidental materials needed to meet requirements, even if not expressly specified or shown on drawings without claim for additional payment.

G. Verify correctness of equipment model numbers and conformance of each component with manufacturer’s specifications.

H. Should any rotating equipment cause excessive noise or vibration, rebalance, realign or do other remedial work to reduce noise and vibration levels. Excessive is defined as exceeding manufacturer’s specifications for unit in question.

1.7 QUALIFICATIONS

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

B. Installer: Company specializing in performing Work of this section with a minimum of five years documented experience.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Comply with Division 1 Section: “Transporting and Handling” and Section: “Storage and Protection”.

B. Accept materials on site in original factory packaging, labeled with manufacturer’s identification.

C. Protect from weather and construction traffic, dirt, water, chemical, and damage, by storing in original packaging.

1.9 ENVIRONMENTAL REQUIREMENTS

A. Do not apply firestopping materials when temperature of substrate material and ambient air is not in accordance with the manufacturer’s installation procedures.

B. Maintain manufacturer’s required temperature before, during, and after installation of HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT

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firestopping materials for minimum periods of time as required by the manufacturer.

1.10 FIELD MEASUREMENTS

A. Verify field measurements prior to fabrication.

PART 2 PRODUCTS

2.1 MATERIALS


1. Characteristics include post-hardening, volume-adjusting, dry, hydraulic-cement-type grout that is non-staining, noncorrosive, nongaseous and is recommended for both interior and exterior applications.

2. Design Mix: 5000-psi, 28-day compressive strength.


2.2 PIPE HANGERS AND SUPPORTS

A. Hangers, Supports, and Components: Provide factory-fabricated products as manufactured by B-Line, AITT Grinnel, Pipe Shields, Inc., or Erico CADDY. Basis of Design shall be B-Line.

1. Components include galvanized coatings where installed for piping and equipment that will not have a field-applied finish.

2. Pipe attachments include nonmetallic coating for electrolytic protection where attachments are in direct contact with copper tubing.

3. Pipe attachments shall include vinyl coated or felt lined where attachments are in direct contact with Polypropylene (PP-R) piping systems.

B. Upper attachments to structures shall have an allowable load not exceeding 3 of the failure (proof test) load but are not limited to the specific methods indicated.

C. Horizontal Non-Insulated Waste, Vent and Storm Water Piping Hangers:

1. Two inch and smaller: Figure No. B3170.

2. Two and one-half inch and larger: Figure No. B3100.

D. Horizontal Non-Insulated Copper Piping Hangers:

1. Two inches and smaller: Figure No. B3104 CTC.

2. Two and one-half inch and larger: Figure No. B3104 CT.
E. Insulated Horizontal Piping hangers; Cold and Hot Water (Domestic)
   1. Two inches and smaller: Figure No. B3108 with metal shield, Figure No. B3151.
   2. Two and one-half inches and larger: Figure No. B3108 with metal shield, Figure No. B3151.

F. Vertical Piping Riser Clamps:
   1. Copper Pipe: Figure No. B3373CT.
   2. Steel Pipe: Figure No. B3136 and B3137.

G. Hangers for Brass Piping or to Eliminate Electrolytic Action:
   1. Figure No. B3104C.

H. Beam Clamps and Attachments:
   1. For bolt-on locations to structure, Figure Nos. B3291, B3036, or B3050.
   2. Welded beam attachments, Figure No. B3083.

I. Brackets:
   1. For equipment and piping adjacent to walls or steel columns, Figure Nos. B3066, B3063 and B3067 depending on weight to be supported.

J. Pipe Rests:
   1. For pipes close to floor where no expansion provision is required, Figure No. B3088T base stand with B3093 adjustable pipe saddle support.

K. Hanger Rods:
   1. Hanger rod, Figure No. B3205.
   2. Continuous threaded rod, Figure No. ATR.
   3. Eye rods, Figure No. B3210 or B3211, depending on load supported.

L. Trapeze Hangers - Direct Mounting Hangers:
   1. Grinnell, Figure No. 46.

M. Protection Saddles:
   1. Cast iron pipe, insulated, Figure No. B3108 with metal shield, Figure No. B3151.
   2. For high temperature steel pipe, insulated, No. B3160, B3161, B3162, B3163, B3164, or B3165.

N. Pipe Roll Stands:
   1. For support of pipe where axial movement is encountered: Figure No. B3117SL where no vertical adjustment is required; and Figure No. B3118SL where vertical adjustment is required.

O. Horizontal AWWA Piping (Flanged or Bell-spigot) Hangers:
   1. Cast iron pipe, Figure No. B3102.

2.3 ACCESSORIES
2.4 INSERTS

A. Hanger Rods: Mild steel threaded both ends, threaded on one end, or continuous threaded.

B. Hangers, Supports, and Components: Provide factory-fabricated products as manufactured by B-Line, AITT Grinnel, Pipe Shields, Inc., or Erico CADDY. Basis of Design shall be B-Line.

C. Thermal-Hanger Shield Inserts: 100-psi average compressive strength, waterproofed calcium silicate or treated lumber inserts, encased with sheet metal shield. Insert and shield cover entire circumference of pipe and are of length indicated by manufacturer for pipe size and thickness of insulation.

D. Powder-Actuated Drive-Pin Fasteners: Powder-actuated-type, drive-pin attachments with pull-out and shear capacities appropriate for supported loads and building materials where used. Fasteners for fire protection systems include UL listing and FM approval.

E. Mechanical-Anchor Fasteners: Insert-type attachments with pull-out and shear capacities appropriate for supported loads and building materials where used. Fasteners for fire protection systems include UL listing and FM approval.

F. Concrete Inserts:
   1. For concrete spot inserts at single locations for casting into structure, Figure No. B3014 for pre-determined rod size and Figure No. B2500 for universal use.
   2. For continuous slot concrete insert at multi-locations for casting into structure, Figure No. B2505.

G. Inserts: Malleable iron case of galvanized steel shell and expander plug for threaded connection with lateral adjustment, top slot for reinforcing rods, lugs for attaching to forms; size inserts to suit threaded hanger rods.

2.5 FLASHING

A. Metal Flashing: 26 gage thick galvanized steel.

B. Metal Counterflashing: 22 gage thick galvanized steel.

C. Lead Flashing:
   1. Waterproofing: 5 lb./sq. ft sheet lead.
   2. Soundproofing: 1 lb./sq. ft sheet lead.

D. Flexible Flashing: 47 mil thick sheet butyl; compatible with roofing.

E. Caps: Steel, 22 gage minimum; 16 gage at fire resistant elements.

2.6 SLEEVES

A. Sleeves for Pipes Through Non-fire Rated Floors: 18 gage thick galvanized steel.

B. Sleeves for Pipes Through Non-fire Rated Beams, Walls, Footings, and Potentially Wet Floors: Steel pipe or 18 gage thick galvanized steel.
C. Sealant: Acrylic.

2.7 MECHANICAL SLEEVE SEALS

A. Product Description: Modular mechanical type, consisting of interlocking synthetic rubber links shaped to continuously fill annular space between object and sleeve, connected with bolts and pressure plates causing rubber sealing elements to expand when tightened, providing watertight seal and electrical insulation.

2.8 FORMED STEEL CHANNEL

A. Product Description: Galvanized 12 gage thick steel. With holes 1-1/2 inches on center.

2.9 FIRESTOPPING

A. Product Description: Different types of products by multiple manufacturers are acceptable as required to meet specified system description and performance requirements; provide only one type for each similar application.
   1. Silicone Firestopping Elastomeric Firestopping: Single component silicone elastomeric compound and compatible silicone sealant.
   2. Foam Firestopping Compounds: Single component foam compound.
   3. Formulated Firestopping Compound of Incombustible Fibers: Formulated compound mixed with incombustible non-asbestos fibers.
   4. Fiber Stuffing and Sealant Firestopping: Composite of mineral or ceramic fiber stuffing insulation with silicone elastomer for smoke stopping.
   5. Mechanical Firestopping Device with Fillers: Mechanical device with incombustible fillers and silicone elastomer, covered with sheet stainless steel jacket, joined with collars, penetration sealed with flanged stops.
   6. Intumescent Firestopping: Intumescent putty compound which expands on exposure to surface heat gain.
   7. Firestop Pillows: Formed mineral fiber pillows.

2.10 FIRESTOPPING ACCESSORIES

A. Primer: Type recommended by firestopping manufacturer for specific substrate surfaces and suitable for required fire ratings.

B. Dam Material: Permanent:
   1. Mineral fiberboard.
   3. Sheet metal.
   4. Plywood or particle board.
   5. Alumina silicate fire board.

C. Installation Accessories: Provide clips, collars, fasteners, temporary stops or dams, and other devices required to position and retain materials in place.

D. General:
   1. Furnish UL listed products. Select products with rating not less than rating of wall or floor being penetrated.

E. Non-Rated Surfaces:
   1. Stamped steel, chrome plated, hinged, split ring escutcheons or floor plates or ceiling plates for covering openings in occupied areas where piping is exposed.
   2. For exterior wall openings below grade, furnish mechanical sealing device to
2.11 NON-PENETRATING ROOFTOP PIPE HANGERS AND SUPPORTS

A. Supports, hangers, accessories, walk pads, etc... shall be as manufactured by Miro Industries, comparable products as manufactured by PHP Systems design or Advanced Support products OR Erico CADDY may be submitted for review as comparable products.

B. Provide with bases that rest upon walk pads. Bases shall have rounded edges to prevent damage to the roof, carbon black additive in polycarbonate for UV stabilization, and stainless steel all threads for adjustability.

C. Plumbing and gas piping shall be supported by rollers, similar to Miro Industries Model 4-RAH series or Erico CADDY PYRAMID RL series.

D. Condensate lines shall be supported by strut, similar to Miro Industries Model 2.5 CS-5" or Erico CADDY PYRAMID EZ series.

E. The walk pads shall be supplied by the roofing manufacturer, or prefabricated non-penetrating piping system manufacturer’s support pads are acceptable.

F. Accessories:


2. Deck Plates: Provide square metal deck plates with curved up edges, to spread load and protect roof membrane, sizes and quantities of Deck Plates shall be per prefabricated non-penetrating piping system manufacturer’s recommendations.

3. Rollers:
   a. Provide pipe rollers in sizes and quantities as recommended by manufacturer.

2.12 ACOUSTICAL SEALANT

A. Sealants for acoustical purposes shall be one of following non-setting sealants:

   Acoustical sealant .................................................................D.A.P.
   BR – 96 ..................................................................................Pecra
   Acoustical sealant .................................................................Tremco
   Acoustical sealant .................................................................U.S.G.

PART 3 EXECUTION

3.1 PREPARATION

A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter affecting bond of firestopping material. Install damming materials to arrest liquid material leakage.

B. Remove incompatible materials affecting bond.

C. Drilling or cutting of structural members shall be as detailed / directed by structural
3.2 INSTALLATION OF HANGERS AND SUPPORTS


B. Arrange for grouping of parallel runs of horizontal piping supported together on field-fabricated, heavy-duty trapeze hangers where possible.

C. Install supports with maximum spacings complying with MSS SP-69, “Pipe Hangers and Supports C Selection and Application,” 1996.

D. Where pipes of various sizes are supported together by trapeze hangers, space hangers for smallest pipe size or install intermediate supports for smaller diameter pipes as specified above for individual pipe hangers.

E. Install building attachments within concrete or to structural steel. Space attachments within maximum piping span length indicated in MSS SP-69, “Pipe Hangers and Supports C Selection and Application,” 1996. Install additional attachments at concentrated loads, including valves, flanges, guides, strainers, expansion joints, and at changes in direction of piping. Install concrete inserts in new construction prior to placing concrete. Install reinforcing bars through openings at top of inserts.

F. Install powder-actuated drive-pin fasteners in concrete after concrete is placed and completely cured. Use operators that are licensed by powder-actuated tool manufacturer. Install fasteners according to powder-actuated tool manufacturer’s operating manual. Do not use in lightweight concrete slabs or in concrete slabs less than 4 inches (100 mm) thick.

G. Install mechanical-anchor fasteners in concrete after concrete is placed and completely cured. Install according to fastener manufacturer’s written instructions. Do not use in lightweight concrete slabs or in concrete slabs less than 4 inches thick.

H. Install hangers and supports complete with necessary inserts, bolts, rods, nuts, washers, and other accessories.


J. Install hangers and supports to allow controlled movement of piping systems, permit freedom of movement between pipe anchors, and facilitate action of expansion joints, expansion loops, expansion bends, and similar units.

K. Load Distribution: Install hangers and supports so that piping live and dead loading and stresses from movement will not be transmitted to connected equipment.

L. Pipe Slopes: Install hangers and supports to provide indicated pipe slopes and so that maximum pipe deflections allowed by ASME B31.9 "Building Services Piping" is not exceeded.

M. Insulated Piping: Provide continuous insulation and vapor barrier through hangers and
WILLIAMSPORT HIGH SCHOOL – WATER LINE REPLACEMENT

supports. Comply with the following installation requirements.

1. **Riser Clamps**: Attach riser clamps, including spacers (if any), to piping with clamps projecting through insulation; do not exceed pipe stresses allowed by ASME B31.9. Insulate clamps on piping with insulation and vapor barrier.

2. **Saddles**: Install protection saddles MSS Type 39 where insulation without vapor barrier is indicated. Fill interior voids with segments of insulation that match adjoining pipe insulation.

3. **Shields**: Install MSS Type 40, protective shields on cold piping with vapor barrier. Shields span an arc of 180 degrees and have dimensions in inches (mm) not less than the following:

<table>
<thead>
<tr>
<th>NPS (Inches)</th>
<th>LENGTH (Inches)</th>
<th>THICKNESS (Inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4 to 3 1/2</td>
<td>12</td>
<td>0.048</td>
</tr>
<tr>
<td>4</td>
<td>12</td>
<td>0.060</td>
</tr>
<tr>
<td>5 and 6</td>
<td>18</td>
<td>0.060</td>
</tr>
<tr>
<td>8 to 14</td>
<td>24</td>
<td>0.075</td>
</tr>
<tr>
<td>16 to 24</td>
<td>24</td>
<td>0.105</td>
</tr>
</tbody>
</table>

4. **Pipes 4 Inches and Larger**: Include treated wood inserts.

5. **Insert Material**: Length to equal to the length of the protective shield.

N. Conform to the table below for maximum spacing of supports and rod sizes:

1. **Steel and Copper Pipe**:

<table>
<thead>
<tr>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Up to 3/4</td>
<td>7</td>
<td>5</td>
<td>3/8</td>
</tr>
<tr>
<td>1</td>
<td>7</td>
<td>6</td>
<td>3/8</td>
</tr>
<tr>
<td>1 1/4</td>
<td>7</td>
<td>7</td>
<td>3/8</td>
</tr>
<tr>
<td>1 1/2</td>
<td>9</td>
<td>8</td>
<td>3/8</td>
</tr>
<tr>
<td>2</td>
<td>10</td>
<td>8</td>
<td>3/8</td>
</tr>
<tr>
<td>2 1/2</td>
<td>11</td>
<td>9</td>
<td>1/2</td>
</tr>
<tr>
<td>3</td>
<td>12</td>
<td>10</td>
<td>1/2</td>
</tr>
<tr>
<td>3 1/2</td>
<td>13</td>
<td>11</td>
<td>1/2</td>
</tr>
<tr>
<td>4</td>
<td>14</td>
<td>12</td>
<td>5/8 (1/2 for copper)</td>
</tr>
<tr>
<td>5</td>
<td>16</td>
<td>13</td>
<td>5/8 (1/2 for copper)</td>
</tr>
<tr>
<td>6</td>
<td>17</td>
<td>14</td>
<td>3/4 (5/8 for copper)</td>
</tr>
<tr>
<td>8</td>
<td>19</td>
<td>16</td>
<td>3/4 (3/4 for copper)</td>
</tr>
<tr>
<td>10</td>
<td>22</td>
<td>18</td>
<td>3/4 (3/4 for copper)</td>
</tr>
<tr>
<td>12</td>
<td>23</td>
<td>19</td>
<td>3/4 (3/4 for copper)</td>
</tr>
</tbody>
</table>

a. Support vertical steel pipe and copper tube at each floor.

2. **Drain Piping**:

<table>
<thead>
<tr>
<th>Pipe Material</th>
<th>Horizontal In Feet</th>
<th>Vertical In Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABS Plastic Pipe</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Cast-Iron Soil Pipe</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>CPVC Plastic Pipe</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>PVC Plastic Pipe</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

a. Support plastic pipe and tubing in accordance with manufacturer’s recommendations.

b. Support cast-iron piping at each hub.

HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT
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O. Metal Fabrication:

1. Cut, drill, and fit miscellaneous metal fabrications for pipe and equipment supports.
2. Fit exposed connections together to form hairline joints. Field-weld connections that cannot be shop-welded because of shipping size limitations.
3. Field Welding: Comply with AWS D1.1 procedures for manual shielded metal-arc welding, appearance and quality of welds, methods used in correcting welding work, and the following:
   a. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
   b. Obtain fusion without undercut or overlap.
   c. Remove welding flux immediately.
   d. Finish welds at exposed connections so that no roughness shows after finishing, and so that contours of welded surfaces match adjacent contours.

P. Painting:

1. Touching Up: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of factory paint on miscellaneous metal is specified in Division 9 Section: "Painting."
2. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

3.3 APPLICATIONS FOR HANGER AND SUPPORT

A. Specific hanger requirements are specified in the Section specifying the equipment and systems.

B. Comply with MSS SP-69, "Pipe Hangers and Supports C Selection and Application," 1996, for pipe hanger selections and applications that are not specified in piping specification Sections.

3.4 INSTALLATION - EQUIPMENT BASES AND SUPPORTS

A. Provide housekeeping pads of concrete, minimum 3 ½" thick and extending 4" beyond supported equipment.

B. Using templates furnished with equipment, install anchor bolts, and accessories for mounting and anchoring equipment.

C. Construct supports of steel members. Brace and fasten with flanges bolted to structure.

3.5 INSTALLATION - FLASHING

A. Provide flexible flashing and metal counterflashing where piping penetrates weather or waterproofed walls, floors, and roofs.

B. Flash vent and soil pipes projecting 3 inches minimum above finished roof surface with lead worked 1 inch minimum into hub, 8 inches minimum clear on sides with 24 x 24 inches sheet size. For pipes through outside walls, turn flanges back into wall and caulk, metal counter-flash, and seal.

C. Flash floor drains in floors with topping over finished areas with lead, 10 inches clear on
sides with minimum 36 x 36 inch sheet size. Fasten flashing to drain clamp device.

D. Seal floor drains and floor sinks watertight to adjacent materials.

E. Adjust storm collars tight to pipe with bolts; caulk around top edge. Use storm collars above roof jacks. Screw vertical flange section to face of curb.

3.6 FIELD QUALITY CONTROL

A. Inspect installed firestopping for compliance with specifications and submitted schedule.

3.7 CLEANING

A. Clean adjacent surfaces of firestopping materials.

3.8 ADJUSTING

A. Hanger Adjustment: Adjust hangers to distribute loads equally on attachments and to achieve indicated slope of pipe.

B. Adjust for pipe alignment and final equipment connections. Flexible connections shall not be used for adjustment of alignment.

3.9 NON-PENETRATING ROOFTOP PIPE HANGERS AND SUPPORTS

A. Determine that roof structure, roof insulation, and roof membrane are structurally adequate to support weight of pipe, duct, conduit, and supports and hangers.

B. Install supports and hangers in accordance with non-penetrating roof pipe support manufacturer’s recommendations.

C. Install supports at maximum spacing of 10’, unless closer spacing is required due to weight of pipe. Do not exceed non-penetrating manufacturer’s recommended load limits.

D. Support Pads: Remove rock from area to be covered by pad, apply pad on cleaned area, and center bases on top of support pads.

E. Set pipe in support without dropping or causing undue impact.

END OF SECTION
SECTION 15075
IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT

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, and all sections of Division 15.

1.2 SUMMARY
A. Section Includes:
   3. Valve Tags.
   4. Valve Schedule Frames.
   7. Plasticized Tags.

B. Related Sections The following Sections contain requirements that relate to this Section:
   1. Division 9 Section: “Painting”: Execution requirements for painting specified by this section.
   2. Division 15 Section: “Common Work Results for Plumbing.”
   3. Division 15 Section: “Pipes and Tubes for Plumbing Piping and Equipment.”
   4. Division 15 Section: “General Duty Valves for Plumbing Piping.”
   5. Division 15 Section: “Plumbing Fixtures.”

1.3 REFERENCES
(Unless otherwise noted, references apply to “latest editions.”)
A. American Society of Mechanical Engineers:

1.4 SUBMITTALS
A. General: Submit each item in this Section according to the conditions of the Contract and Division 1 Section: “Submittals”.

B. Product Data: Submit manufacturer’s technical product data and installation instructions for each identification material and device required.

C. Samples: Submit samples of each color, lettering style and other graphic representation required for each identification material or system.

D. Schedules: Submit valve schedule for each piping system, typewritten and reproduced on 8 1/2” x 11” bond paper. Tabulate valve number, piping system, system abbreviation (as shown on tag), location of valve (room or space), and variations for identification (if any).
Mark valves which are intended for emergency shut-off and similar special uses, by special "flags", in margin of schedule. Furnish copies for Maintenance Manuals as specified in Division 1 Section: "Contract Closeout Procedures."

E. Maintenance Data: Include product data and schedules in maintenance manuals, in accordance with requirements of Division 1.

1.5 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Firms regularly engaged in manufacturer of identification devices of types and sizes required, whose products have been in satisfactory use in similar service for not less than 5 years.

B. Codes and Standards:
   1. ANSI Standards: Comply with ANSI A13.1, for lettering size, length of color field, colors, and viewing angles of identification devices.

C. Equipment Lettering and Graphics:
   1. General: Coordinate names, abbreviations and other designations used in plumbing identification work, with corresponding designations shown, specified or scheduled. Provide numbers, lettering and wording as indicated or, if not otherwise indicated, as recommended by manufacturers or as required for proper identification and operation/maintenance of plumbing systems and equipment.
      a. Multiple Systems: Where multiple systems of same generic name are shown and specified, provide identification, which indicates individual system number as well as service (for example; Water Heater No. 3).

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering identification materials which may be incorporated in the work include, but are not limited to, the following:

B. Manufacturer: Subject to compliance with requirements, provide plumbing identification materials of one of the following:

   2. Industrial Safety Supply Co., Inc.
   3. Seton Name Plate Corp.

2.2 MATERIALS

A. General: Provide manufacturer's standard products of categories and types required for each application as referenced in other Division 22 sections. Where more than single type is specified for application, selection is Installer's option, but provide single selection for each product category.

B. Provide pipe markers with the following background colors and designations:
WILLIAMSPORT HIGH SCHOOL – WATER LINE REPLACEMENT

<table>
<thead>
<tr>
<th>SERVICE</th>
<th>STENCIL DESIGNATION</th>
<th>LETTER COLOR</th>
<th>BACKGROUND COLOR</th>
<th>JACKET</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic Cold Water</td>
<td>Domestic Cold Water</td>
<td>White</td>
<td>Safety Green</td>
<td>Blue</td>
</tr>
</tbody>
</table>

2.3 ENGRAVED PLASTIC-LAMINATE SIGNS (Nameplates):

A. General: Provide engraving stock melamine plastic laminate, complying with FS L-P-387, in the sizes and thicknesses indicated, engraved with engraver’s standard letter style of the sizes and wording indicated, black with white core (letter color) except as otherwise indicated, punched for mechanical fastening except where adhesive mounting is necessary because of substrate.

B. Thickness: 1/8", except as otherwise indicated.

C. Fasteners: Self-tapping stainless steel screws, except contact-type permanent adhesive where screws cannot or should not penetrate the substrate.

D. Nomenclature: Include the following, matching terminology on schedules as closely as possible:
   1. Name and plan number.
   2. Equipment service.
   3. Design capacity.
   4. Other design parameters such as pressure drop, entering and leaving conditions, rpm, etc.

E. Size: Provide approximate 2 1/2" x 4" markers for control devices, dampers, and valves; and 4 1/2" x 6" for equipment.

2.4 VALVE TAGS:

A. Plastic Laminate Valve Tags: Provide manufacturer’s standard 3/32” thick engraved plastic laminate valve tags, with piping system abbreviation in 1/4” high letters and sequenced valve numbers 1/2” high, and with 5/32” hole for fastener.
   1. Provide 1 1/2” sq. black tags with white lettering, except as otherwise indicated.
   2. Provide size, shape and color combination as specified or scheduled for each piping system.

B. Plastic Valve Tags: Provide manufacturer’s standard solid plastic valve tags with printed enamel lettering, with piping system abbreviation in approximately 3/16” high letters and sequenced valve numbers approximately 3/8” high, and with 5/32” hole for fastener.
   1. Provide 1 1/8” sq. white tags with black lettering.
   2. Provide size, shape and color combination as specified or scheduled for each piping system.

C. Metal Tags:
   1. Brass with stamped letters; tag size minimum 1-1/2 inches square with finished edges.

D. Valve Tag Fasteners: Provide manufacturer’s standard solid brass chain (wire link or beaded type), or solid brass S-hooks of the sizes required for proper attachment of tags to valves, and manufactured specifically for that purpose.

E. Tag Chart: Typewritten letter size list of applied tags and location in anodized aluminum
2.5 PAINTED IDENTIFICATION MATERIALS:

A. Stencils: With clean cut symbols and letters of following size:
   1. Up to 2 inches Outside Diameter of Insulation or Pipe: 1/2 inch high letters.
   2. 2-1/2 to 6 inches Outside Diameter of Insulation or Pipe: 1-inch high letters.
   3. Over 6 inches Outside Diameter of Insulation or Pipe: 1-3/4 inches high letters.
   4. Ductwork and Equipment: 1-3/4 inches high letters

B. Stencils shall not be utilized on piping and plumbing equipment.

C. Stencil Paint: Standard exterior type stenciling enamel; black, except as otherwise indicated; either brushing grade or pressurized spray-can form and grade.

D. Identification Paint and Background Color: Standard identification enamel of colors indicated or, if not otherwise indicated for piping systems and plumbing equipment comply with ANSI A13.1 for colors.

2.6 PLASTIC PIPE MARKERS:

A. Snap-On Type: Provide manufacturer's standard pre-printed, semi-rigid snap-on, UV-resistant color-coded pipe markers, complying with ANSI/ASME A13.1

B. Small Pipes: For external diameters less than 6" (including insulation if any), provide full-band pipe markers, extending 360 degrees around pipe at each location, fastened by one of the following methods:
   1. Snap-on application of pre-tensioned semi-rigid plastic pipe marker.
   2. Adhesive lap joint in pipe marker overlap.
   3. Taped to pipe (or insulation) with color-coded plastic adhesive tape, not less than 3/4" wide; full circle at both ends of pipe marker, tape lapped 1 1/2".

C. Large Pipes: For external diameters of 6" and larger (including insulation if any), provide either full-band or strip-type pipe markers, but not narrower than 3 times letter height (and of required length), fastened by one of the following methods:
   1. Taped to pipe (or insulation) with color-coded plastic adhesive tape, not less than 1 1/2" wide; full circle at both ends of pipe marker, tape lapped 3".
   2. Strapped-to-pipe (or insulation) application of semi-rigid type, with manufacturer's standard stainless steel bands.

D. Lettering: Comply with piping system nomenclature as specified, scheduled or shown, and abbreviate only as necessary for each application length.
   1. Arrows: Print each pipe marker with arrows indicating direction of flow, either integrally with piping system service lettering (to accommodate both directions), or as a separate unit of plastic.

2.7 CEILING TACKS

A. Description: Steel with 3/4 inch diameter color-coded head.

B. Color code as follows:
   1. Plumbing valves: Green.

2.8 PLASTICIZED TAGS:
A. General: Manufacturer’s standard pre-printed or partially pre-printed accident-prevention tags, of plasticized card stock with matt finish suitable for writing, approximately 3 1/4" x 5 5/8", with brass grommets and wire fasteners, and with appropriate pre-printed wording including large-size primary wording (as examples; DANGER, CAUTION, DO NOT OPERATE).

PART 3 EXECUTION

3.1 PREPARATION

A. Degrease and clean surfaces to receive adhesive for identification materials.

3.2 INSTALLATION

A. General:

1. Coordination: Where identification is to be applied to surfaces, which require insulation, painting or other covering or finish, including valve tags in finished mechanical spaces, install identification after completion of covering and painting. Install identification prior to installation of acoustical ceilings and similar removable concealment.

2. Confined Spaces: Provide labels and signs on all duct and equipment doors, plenums, etc. to indicate service and provide operator warnings as required by OSHA, NFPA, and authority having jurisdiction.

B. Install plastic nameplates with corrosive-resistant mechanical fasteners, or adhesive.

C. Install labels with sufficient adhesive for permanent adhesion and seal with clear lacquer. For unfinished canvas covering, apply paint primer before applying labels.

D. Piping System Identification:

1. General: Install pipe markers of one of the following types on each system indicated to receive identification, and include arrows to show normal direction of flow:
   a. Plastic pipe markers, with application system as indicated under "Materials" in this section.

2. Locate pipe markers and color bands as follows on all piping in occupied spaces, above ceilings, machine rooms, accessible maintenance spaces (shafts, tunnels, plenums) and exterior non-concealed locations.
   a. Near each valve and control device.
   b. Near each branch, excluding short take-offs for fixtures and terminal units; mark each pipe at branch, where there could be question of flow pattern.
   c. Near locations where pipes pass through walls or floors/ceilings, or enter non-accessible enclosures.
   d. At access doors, manholes and similar access points, which permit view of concealed piping.
   e. Near major equipment items and other points of origination and termination.
   f. Spaced intermediately at maximum spacing of 25' along each piping run, except reduce spacing to 10' in congested areas.
      1) All exposed natural gas piping, > 0.5 PSIG shall be marked at intervals not exceeding 5 feet.

3. Non-Potable Water Identification:
   Change Summary: Whenever nonpotable water systems are installed, including
outside of the building, the piping must be identified.

1) Where nonpotable water systems are installed, the piping conveying the nonpotable water shall be identified either by color marking or metal tags in accordance with plumbing code. All nonpotable water outlets such as hose connections, open-ended pipes, and faucets shall be identified at the point of use for each outlet with the words, “Nonpotable—not safe for drinking.” The words shall be indelibly printed on a tag or sign constructed of corrosion-resistant waterproof material or shall be indelibly printed on the fixture. The letters of the words shall be not less than 0.5 inches in height and in colors in contrast to the background on which they are applied.

2) All systems and outlets for nonpotable water should be identified regardless of location.

4. Labeling of water distribution pipes in bundles:
   a. Where water distribution piping is bundled at installation, each pipe in the bundle shall be identified per project specification. The identification shall indicate the pipe contents and the direction of flow in the pipe. The interval of the identification markings on the pipe shall not exceed 25 feet. There shall be not less than one identification label on each pipe in each room, space, or story.

E. Underground Piping Identification:

1. General: During back-filling/top-soiling of each exterior underground piping system, install continuous underground-type plastic line marker, located directly over buried line at 6” to 8” below finished grade. Where multiple small lines are buried in common trench and do not exceed overall width of 16”, install single line marker. For tile fields and similar installations, mark only edge pipe lines of field.

F. Valve Identification:

1. General: Provide valve tag on every valve, cock and control device in each piping system; exclude check valves, valves within factory-fabricated equipment units, plumbing fixture faucets, convenience and lawn-watering hose bibs, and shut-off valves at plumbing fixtures. List each tagged valve in valve schedule for each piping system.

G. Equipment Identification:

1. General: Install engraved plastic laminate sign on or near each major item of plumbing equipment and each operational device, as specified herein if not otherwise specified for each item or device. Provide signs for the following general categories of equipment and operational devices:
   a. Main control and operating valves, including safety devices and hazardous units such as gas outlets.
   b. Water meters and flow meters.
   c. Fuel-burning units.
   d. Pumps, compressors, and similar motor-driven units.
   e. Heat exchangers, expansion tanks, and similar equipment.
   f. Tanks and pressure vessels.
   g. Filters, water treatment systems and similar equipment.
   h. Domestic water heater, RO/DI equipment, vacuum pump units, sumps, sewage ejectors, etc.

2. Lettering Size: Minimum 1/4” high lettering for name of unit where viewing
distance is less than 2'-0", 1/2" high for distances up to 6'-0", and proportionately larger lettering for greater distances. Provide secondary lettering of 2/3 to 3/4 of size of the principal lettering.

3. Text of Signs: In addition to name of identified unit, provide lettering to distinguish between multiple units, inform operator of operational requirements, indicate safety precautions, and warn of hazards and improper operations.

H. Provide ceiling tacks to locate valves above T-bar type panel ceilings. Locate in corner of panel closest to equipment.

3.3 ADJUSTING

A. Adjusting: Relocate any identification device, which has become visually blocked by work of this division or other divisions.

3.4 CLEANING

A. Cleaning: Clean face of identification devices.

3.5 EXTRA STOCK

A. Furnish minimum of 5% extra stock of each identification material required, including additional numbered valve tags (not less than 3) for each piping system, additional piping system identification markers, and additional plastic laminate engraving blanks of assorted sizes.

1. Where stenciled markers are provided, clean and retain stencils after completion of stenciling and include used stencils in extra stock, along with required stock of stenciling paints and applicators.

END OF SECTION
SECTION 15080
PLUMBING INSULATION

PART 1 GENERAL

1.1 RELATED DOCUMENTS
A. Drawings and General Provisions of the contract, including General and Supplemental Conditions and Division 1 Specifications, apply to this section and all sections of Division 15.

1.2 SUMMARY
A. This section includes:
   1. Insulation Materials:
      a. Mineral fiber.
   2. Insulating cements.
   3. Adhesives.
   5. Lagging adhesives.
   7. Factory-applied jackets.
   10. Field-applied jackets.
   11. Tapes.
   12. Securements.
   13. Corner angles.

B. Related Sections: The following sections contain requirements that relate to this section.
   1. Division 7 Section: "Penetration Firestopping:" Product requirements for firestopping for placement by this section.
   2. Division 9 Section: "Painting" Execution requirements for painting insulation jackets and covering specified by this section.
   3. Division 15 Section: "Hangers and Supports for Plumbing Piping and Equipment:" Product and Execution requirements for inserts at hanger locations.
   4. Division 15 Section: "Identification for Plumbing Piping and Equipment:" Product requirements for plumbing piping and equipment identification.

1.3 REFERENCES
(Unless otherwise noted, references apply to “latest editions.”)
A. ASTM International:

1.4 SUBMITTALS

A. General: Submit each item in this Section according to the conditions of the Contract and Division 1 Section: “Submittals”.

B. Product Data: Submit product description, thermal characteristics and list of materials and thickness for each service, and location.

C. Manufacturer’s Installation Instructions: Submit manufacturers published literature indicating proper installation procedures.

D. Manufacturer’s Certificate: Certify products meet or exceed specified requirements.
1.5 QUALITY ASSURANCE

A. Test pipe insulation for maximum flame spread index of 25 and maximum smoke
developed index of not exceeding 50 in accordance with ASTM E84.

B. Perform Work in accordance with all applicable codes, standards and local authorities
having jurisdiction requirements.

C. Maintain one copy of each document on site.

D. Fire-Test-Response Characteristics: Insulation and related materials shall have fire-
tesponse characteristics indicated, as determined by testing identical products per
ASTM E 84, by a testing and inspecting agency acceptable to authorities having
jurisdiction. Factory label insulation and jacket materials and adhesive, mastic, and
cement material containers, with appropriate markings of applicable testing and
inspecting agency.

1. Products: Subject to compliance with requirements, provide one of the products
specified.

2. Manufacturers: Subject to compliance with requirements, provide products by
one of the manufacturers specified.

E. Insulation materials shall be tested and rated according to ASTM Test Method C-177 to
determine k-factors. ASTM C 335 is for pre-formed pipe insulation. Note: C177 is for
flat slab materials such as board products, etc.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section
with minimum three years experience, and service facilities within 50 miles of the project.

B. Applicator: Company specializing in performing Work of this section with minimum three
years experience.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Comply with Division 1 Section: “Transportation and Handling” and Division 1 Section:
“Storage and Protection”.

B. Accept materials on site in original factory packaging, labeled with manufacturer’s
identification, including product density and thickness.

C. Protect insulation from weather and construction traffic, dirt, water, chemical, and
damage, by storing in original wrapping. Remove and replace any wet or damaged
unsatisfactory insulation at the architect’s direction.

1.8 ENVIRONMENTAL REQUIREMENTS

A. Install insulation only when ambient temperature and humidity conditions are within range
recommended by manufacturer.

B. Maintain temperature during and after installation for minimum period of 24 hours.
1.9 FIELD MEASUREMENTS
A. Verify field measurements prior to fabrication.

1.10 WARRANTY
A. Furnish five year manufacturer warranty for man made fiber.

1.11 COORDINATION
A. Coordinate sizes and locations of supports, hangers, and insulation shields specified in Division 15 Section: “Hangers and Supports for Plumbing Piping and Equipment.”
B. Coordinate clearance requirements with piping Installer for piping insulation application, and equipment Installer for equipment insulation application. Before preparing piping Shop Drawings, establish and maintain clearance requirements for installation of insulation and field-applied jackets and finishes and for space required for maintenance.

1.12 DEFINITIONS
A. ASJ: Al-service jacket.
B. FSK: Foil, scrim, Kraft paper.
C. FSP: Foil, Scrim, polyethylene.
D. PVDC: Polyvinylidene chloride.
E. SSL: Self-sealing lap.
F. ASJ+: All service jacket composed of aluminum foil reinforced with glass scrim bonded to a Kraft paper interweaving with an outer film layer leaving no paper exposed.
G. PSK: Poly Scrim Kraft.

PART 2 PRODUCTS

2.1 MANUFACTURERS
A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection.
   1. Products: Subject to compliance with requirements, provide one of the products specified.
   2. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 INSULATION MATERIALS
A. Refer to Part 3 execution: schedule for requirements regarding where insulating materials shall be applied.
B. Products shall not contain asbestos, lead, mercury, or mercury compounds.

C. When product to be in contact with austenitic stainless steel is tested according to ASTM C795 (which includes ASTM C692 and ASTM C871), the PH of the leach water from the specific material supplied shall be greater than 7.0 but not greater than 11.7 at 77°F (25°C). An acceptable proportion of sodium plus silicate ions to the chloride ions as found by leaching from the insulation is shown in the “plot point” of figure 6 in ASTM C795.

D. Insulation materials for use on austenitic stainless steel shall be qualified as acceptable according to ASTM C 795.

E. Insulation materials applied to carbon steel shall be Mass Load Corrosion Rate (MLCR) tested per ASTM 1617.

F. Glass Mineral Wool, Preformed Pipe Insulation:
   1. Products:
      a. Johns Manville; Micro-Lok HP Ultra
      b. Knauf Insulation; Earthwool 1000 Pipe insulation with Ecose® Technology.
      c. Knauf Insulation; Earthwool Redi-Klad 1000 Pipe insulation with Ecose® Technology. (for chilled water or outdoor applications)
      d. Owens Corning; Fiberglas Pipe Insulation SSLII with ASJ Max.
   2. Type I, 850 deg F or Type IV, 1000 deg F. Materials: Glass mineral wool bonded with a thermosetting resin. UL/ULC Classified per UL 723 or FHC 25/50 per ASTM E 84. Living Building Challenge – Declare Red List Free for Redi-Klad Pipe or unjacketed Earthwool Pipe only. Comply with ASTM C 585, ASTM C 411, ASTM C 795 and ASTM C 547. Type I and Type IV, with factory-applied ASJ+ - SSL+ or ASJ+ - SSL. Factory-applied jacket requirements are specified in Part 2 “Factory-Applied Jackets” Article.
   3. Type II, 1200 degree F Materials: Mineral or glass fibers bonded with thermosetting resin. Comply with ASTM C547, Type II, Grade A, with Factory-applied ASJ-SSL. Factory-applied jacket requirements are specified in Part 2 “Factory-Applied Jackets” Article.
   4. Maximum K-Factor: 0.23 at 75 deg. F mean temperature; 0.34 at 250 deg. F mean temperature.

2.3 INSULATING CEMENTS


B. Expanded or Exfoliated Vermiculite Insulating Cement: Comply with ASTM C 196.

C. Mineral-Fiber, Hydraulic-Setting Insulating and Finishing Cement: Comply with ASTM C 449/C 449M.

2.4 ADHESIVES

A. Materials shall be compatible with insulation materials, jackets, and substrates and for bonding insulation to itself and to surfaces to be insulated, unless otherwise indicated.

B. Mineral-Fiber Adhesive: Comply with MIL-A-3316C, Class 2, Grade A.
1. Products:


1. Products:

2.5 MASTICS

A. Materials shall be compatible with insulation materials, jackets, and substrates; comply with MIL-C-19565C, Type II.

B. Vapor-Barrier Mastic: Water based; suitable for indoor and outdoor use on below ambient services.

1. Products:
   b. Eagle Bridges - Marathon Industries, Inc.; 590.
   d. Vimasco Corporation; 749.

2. Water-Vapor Permeance: ASTM E 96, Procedure B, 0.013 perm at 43-mil dry film thickness.

3. Service Temperature Range: Minus 20 to plus 180 deg F.


C. Breather Mastic: Water based; suitable for indoor and outdoor use on above ambient services.

1. Products:
   a. Foster Products Corporation, H. B. Fuller Company; 35-00.
   d. Vimasco Corporation; WC-1/WC-5.

2. Water-Vapor Permeance: ASTM F 1249, 3 perms at 0.0625-inch dry film thickness.

3. Service Temperature Range: Minus 20 to plus 200 deg F.

4. Solids Content: 63 percent by volume and 73 percent by weight.


2.6 LAGGING ADHESIVES

A. Description: Comply with MIL-A-3316C Class I, Grade A and shall be compatible with insulation materials, jackets, and substrates.

1. Products:
   a. Foster Products Corporation, H. B. Fuller Company; 81-42W.
   b. Eagle Bridges - Marathon Industries, Inc.; 130.
   c. Vimasco Corporation; 713/714.
2. Fire-resistant, water-based lagging adhesive and coating for use indoors to adhere fire-resistant lagging cloths over duct, equipment, and pipe insulation.
3. Service Temperature Range: Minus 50 to plus 180 deg F.

2.7 SEALANTS

A. Joint Sealants:

1. Joint Sealants for Cellular-Glass and Polyisocyanurate Products:
   c. Mon-Eco Industries, Inc.; 44-05.
   d. Pittsburgh Coming Corporation; Pittseal 444.
2. Materials shall be compatible with insulation materials, jackets, and substrates.
3. Permanently flexible, elastomeric sealant.
4. Service Temperature Range: Minus 100 to plus 300 deg F.
5. Color: White or gray.

B. FSK and Metal Jacket Flashing Sealants:

1. Products:
   a. Foster Products Corporation, H. B. Fuller Company; 95-44.
   c. Mon-Eco Industries, Inc.; 44-05.
2. Materials shall be compatible with insulation materials, jackets, and substrates.
3. Fire- and water-resistant, flexible, elastomeric sealant.
4. Service Temperature Range: Minus 40 to plus 250 deg F.
5. Color: Aluminum.

C. ASJ Flashing Sealants, and Vinyl, PVDC, and PVC Jacket Flashing Sealants:

1. Materials shall be compatible with insulation materials, jackets, and substrates.
2. Fire- and water-resistant, flexible, elastomeric sealant.
3. Service Temperature Range: Minus 40 to plus 250 deg F.

2.8 FACTORY-APPLIED JACKETS

A. Insulation system schedules indicate factory-applied jackets on various applications.
When factory-applied jackets are indicated, comply with the following:

1. ASJ: White, Kraft-paper, fiberglass-reinforced scrim with aluminum-foil backing; complying with ASTM C 1136, Type I.
2. ASJ-SSL: ASJ with self-sealing, pressure-sensitive, acrylic-based adhesive covered by a removable protective strip; complying with ASTM C 1136, Type I.
3. ASJ+ SSL: All service jacket composed of aluminum foil reinforced with glass scrim bonded to a kraft paper interweaving with an outer film layer leaving no paper exposed.
4. Redi-Klad Jacket: Factory applied venture clad 5-ply weather and abuse resistant with self-sealing lap. Zero permeability per ASTM E 96-05; puncture resistance 35.4 kg (189.3 N) per ASTM D 1000; tear strength 4.3lb (19.4 N) per
ASTM D 624, thickness 14.5 mils (0.0145”); tensil strength 68 lb/inch width [306 N (32K9)/25mm.]

5. FSK Jacket: Aluminum-foil, fiberglass-reinforced scrim with Kraft-paper backing; complying with ASTM C 1136, Type II.

6. FSP Jacket: Aluminum-foil, fiberglass-reinforced scrim with polyethylene backing; complying with ASTM C 1136, Type II.

7. PVDC Jacket for Outdoor Applications: 6-mil- thick, white PVDC biaxially oriented barrier film with a permeance at 0.01 perms when tested according to ASTM E 96 and with a flame-spread index of 5 and a smoke-developed index of 25 when tested according to ASTM E 84.

   a. Products:
      1) Dow Chemical Company (The); Saran 540 Vapor Retarder Film and Saran 560 Vapor Retarder Film.
      2) HiCube Coating; HC1000 Vapor Barrier

9. Vinyl Jacket: UL-rated white vinyl with a permeance of 1.3 perms when tested according to ASTM E 96, Procedure A, and complying with NFPA 90A and NFPA 90B.

10. ASJ: Owens Corning Evolution™ paper-free ASJ pipe insulation.

11. PSK Jacket, Polypropylene scrim with Kraft.

2.9 FIELD-APPLIED FABRIC-REINFORCING MESH

A. Woven Glass-Fiber Fabric for Pipe Insulation: Approximately 2 oz./sq. yd. with a thread count of 10 strands by 10 strands/sq. inch for covering pipe and pipe fittings.
   1. Products:
      a. Vimasco Corporation; Elastafab 894.


C. Woven Polyester Fabric: Approximately 1 oz./sq. yd. with a thread count of 10 strands by 10 strands/sq. inch, in a Leno weave, for duct, equipment, and pipe.
   1. Products:
      b. Vimasco Corporation; Elastafab 894.

2.10 FIELD-APPLIED JACKETS

A. Field-applied jackets shall comply with ASTM C 921, Type I, unless otherwise indicated.


C. PVC Jacket: High-impact-resistant, UV-resistant PVC complying with ASTM D 1784, Class 16354-C; 20 mil thickness; roll stock Ready for shop or field cutting and forming.
   1. Products:
      a. Johns Manville; Zeston.
      c. Proto PVC Corporation; LoSmoke.
d. Speedline Corporation; SmokeSafe.
2. Adhesive: As recommended by jacket material manufacturer.
4. Factory-fabricated fitting covers to match jacket if available; otherwise, field fabricate.
   a. Shapes: 45- and 90-degree, short- and long-radius elbows, tees, valves, flanges, unions, reducers, end caps, soil-pipe hubs, traps and mechanical joints minimum 20 mil thickness.
5. Factory-fabricated tank heads and tank side panels.

D. Metal Jacket:

1. Products:
   a. Childers Products, Division of ITW; Metal Jacketing Systems.
   b. PABCO Metals Corporation; Surefit.
   c. RPR Products, Inc.; Insul-Mate.
   a. Sheet and roll stock ready for shop or field sizing.
   b. Thickness:
      1) Up to 24 inch diameter, width, or height: 0.016 inch minimum.
      2) 25 inch to 59 inch diameter, width, or height: 0.024 inch minimum.
      3) 60 inch and larger diameter, width, or height: 0.032 inch minimum.
   c. Finish: Smooth finish.
   d. Color: White
   e. Moisture Retarder: 3-mil- thick Polysurlyn (co-extrusion of polyethylene and Dupont Surlyn®, heat laminated to the metal jacketing).
   f. Factory-Fabricated Fitting Covers:
      1) Same material, finish, and thickness as jacket.
      2) Preformed 2-piece or gore, 45- and 90-degree, short- and long-radius elbows.
      3) Tee covers.
      4) Flange and union covers.
      5) End caps.
      6) Beveled collars.
      7) Valve covers.
      8) Field fabricate fitting covers only if factory-fabricated fitting covers are not available.

E. Pipe Sound Lagging: Loaded vinyl with fibrous glass scrim reinforced aluminum foil facing over 2-inch thick quilted fiberglass decoupler. Loaded vinyl shall be 2 psf minimum surface weight. Glass fiber pipe wrap shall be semi-rigid, preformed type, 2-inch minimum thickness, 1-1/2 pcf density.

1. Manufacturers:
   a. Kinetics.
   b. Sound Seal.

2.11 TAPES

A. ASJ Tape: White vapor-retarder tape matching factory-applied jacket with acrylic adhesive, complying with ASTM C 1136 and UL listed.
1. 1. Products:
   a. Avery Dennison Corporation, Specialty Tapes Division; Fasson 0835.
   b. Compac Corp.; 104 and 105.
   c. Ideal Tape Co., Inc., an American Biltrite Company; 428 AWF ASJ.
   d. Venture Tape; 1540 CW Plus, 1542 CW Plus, and 1542 CW Plus/SQ.
   e. HiCube Coating: HC108
2. Width: 3 inches.
3. Thickness: 11.5 mils.
5. Elongation: 2 percent.
6. Tensile Strength: 40 lbf/inch in width.
7. ASJ Tape Disks and Squares: Precut disks or squares of ASJ tape.

B. FSK Tape: Foil-face, vapor-retarder tape matching factory-applied jacket with acrylic adhesive; complying with ASTM C 1136 and UL listed.

1. Products:
   a. Avery Dennison Corporation, Specialty Tapes Division; Fasson 0827.
   b. Compac Corp.; 110 and 111.
   c. Ideal Tape Co., Inc., an American Biltrite Company; 491 AWF FSK.
   d. Venture Tape; 1525 CW, 1528 CW, and 1528 CW/SQ.
   e. HiCube Coating: HC106
2. Width: 3 inches.
3. Thickness: 6.5 mils.
5. Elongation: 2 percent.
6. Tensile Strength: 40 lbf/inch in width.
7. FSK Tape Disks and Squares: Precut disks or squares of FSK tape.

C. PVC Tape: White vapor-retarder tape matching field-applied PVC jacket with acrylic adhesive. Suitable for indoor and outdoor applications.

1. Products:
   a. Avery Dennison Corporation, Specialty Tapes Division; Fasson 0555.
   b. Compac Corp.; 130.
   c. Ideal Tape Co., Inc., an American Biltrite Company; 370 White PVC tape.
   d. Venture Tape; 1506 CW NS.
   e. HiCube Coating: HC404
2. Width: 2 inches.
3. Thickness: 6 mils.
5. Elongation: 500 percent.
6. Tensile Strength: 18 lbf/inch in width.

D. Aluminum-Foil Tape: Vapor-retarder tape with acrylic adhesive and UL listed.

1. Products:
   a. Avery Dennison Corporation, Specialty Tapes Division; Fasson 0800.
   b. Compac Corp.; 120.
   c. Ideal Tape Co., Inc., an American Biltrite Company; 488 AWF.
   d. Venture Tape; 3520 CW.
   e. HiCube Coating: HC100
2. Width: 2 inches.
3. Thickness: 3.7 mils.
5. Elongation: 5 percent.
6. Tensile Strength: 34 lbf/inch in width.

2.12 SECUERMENTS

A. Bands:
1. Products:
   a. Childers Products; Bands.
   b. PABCO Metals Corporation; Bands.
   c. RPR Products, Inc.; Bands.
2. Stainless Steel: ASTM A 167 or ASTM A 240/A 240M, Type 316; 0.015 inch thick, 3/4 inch wide with wing or closed seal.
3. Aluminum: ASTM B 209, Alloy 3003, 3005, 3105, or 5005; Temper H-14, 0.020 inch thick, 3/4 inch wide with wing or closed seal.

B. Insulation Pins and Hangers:
1. Capacitor-Discharge-Weld Pins: Copper- or zinc-coated steel pin, fully annealed for capacitor-discharge welding, 0.135-inch- diameter shank, length to suit depth of insulation indicated.
   a. Products:
      1) AGM Industries, Inc.; CWP-1.
      2) GEMCO; CD.
      3) Midwest Fasteners, Inc.; CD.
      4) Nelson Stud Welding; TPA, TPC, and TPS.
2. Cupped-Head, Capacitor-Discharge-Weld Pins: Copper- or zinc-coated steel pin, fully annealed for capacitor-discharge welding, 0.135-inch- diameter shank, length to suit depth of insulation indicated with integral 1-1/2-inch galvanized carbon-steel washer.
   a. Products:
      1) AGM Industries, Inc.; CWP-1.
      2) GEMCO; Cupped Head Weld Pin.
      3) Midwest Fasteners, Inc.; Cupped Head.
      4) Nelson Stud Welding; CHP.
3. Metal, Adhesively Attached, Perforated-Base Insulation Hangers: Baseplate welded to projecting spindle that is capable of holding insulation, of thickness indicated, securely in position indicated when self-locking washer is in place. Comply with the following requirements:
   a. Products:
      1) AGM Industries, Inc.; Tactoo Insul-Hangers, Series T.
      2) GEMCO; Perforated Base.
      3) Midwest Fasteners, Inc.; Spindle.
   b. Baseplate: Perforated, galvanized carbon-steel sheet, 0.030 inch thick by 2 inches square.
   c. Spindle: Copper- or zinc-coated, low carbon steel, fully annealed, 0.106-inch- diameter shank, length to suit depth of insulation indicated.

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d. Adhesive: Recommended by hanger manufacturer. Product with demonstrated capability to bond insulation hanger securely to substrates indicated without damaging insulation, hangers, and substrates.

4. Nonmetal, Adhesively Attached, Perforated-Base Insulation Hangers: Baseplate fastened to projecting spindle that is capable of holding insulation, of thickness indicated, securely in position indicated when self-locking washer is in place. Comply with the following requirements:
   a. Products:
      1) GEMCO; Nylon Hangers.
      2) Midwest Fasteners, Inc.; Nylon Insulation Hangers.
   b. Baseplate: Perforated, nylon sheet, 0.030 inch thick by 1-1/2 inches in diameter.
   c. Spindle: Nylon, 0.106-inch-diameter shank, length to suit depth of insulation indicated, up to 2-1/2 inches.
   d. Adhesive: Recommended by hanger manufacturer. Product with demonstrated capability to bond insulation hanger securely to substrates indicated without damaging insulation, hangers, and substrates.

5. Insulation-Retaining Washers: Self-locking washers formed from 0.016-inch-thick, galvanized-steel sheet, with beveled edge sized as required to hold insulation securely in place but not less than 1-1/2 inches in diameter.
   a. Products:
      1) AGM Industries, Inc.; RC-150.
      2) GEMCO; R-150.
      3) Midwest Fasteners, Inc.; WA-150.
      4) Nelson Stud Welding; Speed Clips.
   b. Protect ends with capped self-locking washers incorporating a spring steel insert to ensure permanent retention of cap in exposed locations.

6. Nonmetal Insulation-Retaining Washers: Self-locking washers formed from 0.016-inch-thick nylon sheet, with beveled edge sized as required to hold insulation securely in place but not less than 1-1/2 inches in diameter.
   a. Manufacturers:
      1) GEMCO.
      2) Midwest Fasteners, Inc.

C. Staples: Outward-clinching insulation staples, nominal 3/4-inch-wide, stainless steel or Monel.

D. Wire: 0.062-inch soft-annealed, stainless steel.

1. Manufacturers:
   a. ACS Industries, Inc.
   b. C & F Wire.
   c. Childers Products.
   d. PABCO Metals Corporation.
   e. RPR Products, Inc.

2.13 CORNER ANGLES

A. Aluminum Corner Angles: 0.040 inch thick, minimum 1 by 1 inch, aluminum according to ASTM B 209, Alloy 3003, 3005, 3105 or 5005; Temper H-14.
B. Stainless-Steel Corner Angles: 0.024 inch thick, minimum 1 by 1 inch, stainless steel according to ASTM A 167 or ASTM A 240/A 240M, Type 304 or 316.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify piping and equipment to be insulated has been tested before applying insulation materials.

B. Verify surfaces to be insulated are clean and dry, with foreign material removed.

3.2 PREPARATION

A. Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application.

B. Coordinate insulation installation with the trade installing heat tracing. Comply with requirements for heat tracing that apply to insulation.

C. Mix insulating cements with clean potable water; if insulating cements are to be in contact with stainless-steel surfaces, use demineralized water.

3.3 COMMON INSTALLATION REQUIREMENTS

A. Install insulation materials, accessories, and finishes with smooth, straight, and even surfaces; free of voids throughout the length of equipment, and fittings, and piping including fittings, valves, and specialties.

B. Install insulation materials, forms, vapor barriers or retarders, jackets, and thicknesses required for each item of equipment, and pipe system as specified in insulation system schedules.

C. Install accessories compatible with insulation materials and suitable for the service. Install accessories that do not corrode, soften, or otherwise attack insulation or jacket in either wet or dry state.

D. Install insulation with longitudinal seams at top and bottom of horizontal runs.

E. Install multiple layers of insulation with longitudinal and end seams staggered.

F. Do not weld brackets, clips, or other attachment devices to piping, fittings, and specialties.

G. Keep insulation materials dry during application and finishing.

H. Install insulation with tight longitudinal seams and end joints. Bond seams and joints with adhesive recommended by insulation material manufacturer.

I. Install insulation with least number of joints practical.
J. Install insulation continuously through hangers and around anchor attachments.

K. Where vapor barrier is indicated, seal joints, seams, and penetrations in insulation at anchors and other projections with vapor-barrier mastic.
   1. Install insulation continuously through hangers and around anchor attachments.
   2. For insulation application where vapor barriers are indicated, extend insulation on anchor legs from point of attachment to supported item to point of attachment to structure. Taper and seal ends at attachment to structure with vapor-barrier mastic.
   3. Install insert materials and install insulation to tightly join the insert. Seal insulation to insulation inserts with adhesive or sealing compound recommended by insulation material manufacturer.
   4. Cover inserts with jacket material matching adjacent pipe insulation. Install shields over jacket, arranged to protect jacket from tear or puncture by hanger, support, and shield.

L. Apply adhesives, mastics, and sealants at manufacturer’s recommended coverage rate and wet and dry film thicknesses.

M. Install insulation with factory-applied jackets as follows:
   1. Draw jacket tight and smooth.
   2. Cover circumferential joints with 3-inch-wide strips, of same material as insulation jacket. Secure strips with adhesive and outward clinching staples along both edges of strip, spaced 4 inches o.c.
   3. Overlap jacket longitudinal seams at least 1-1/2 inches. Install insulation with longitudinal seams at bottom of pipe. Clean and dry surface to receive self-sealing lap. Staple laps with outward clinching staples along edge at 2 inches o.c.
      a. For below ambient services, apply vapor-barrier mastic over staples.
   4. Cover joints and seams with tape as recommended by insulation material manufacturer to maintain vapor seal.
   5. Where vapor barriers are indicated, apply vapor-barrier mastic on seams and joints and at ends adjacent to pipe flanges and fittings.

N. Cut and install insulation in a manner to avoid compressing insulation more than 25 percent of its original nominal thickness.

O. Finish installation with systems at operating conditions. Repair joint separations and cracking due to thermal movement.

P. Repair damaged insulation facings by applying same facing material over damaged areas. Extend patches at least 4 inches beyond damaged areas. Adhere, staple, and seal patches similar to butt joints.

Q. Replace insulation on new and existing piping where insulation is damaged during construction or removed for testing and balancing work.

R. For above ambient services, do not install insulation to the following:
   1. Vibration-control devices.
   2. Testing agency labels and stamps.
   3. Nameplates and data plates.

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5. Handholes.
6. Cleanouts.
7. Unions.
8. Flanges.

3.4 PENETRATIONS

A. Insulation Installation at Roof Penetrations: Install insulation continuously through roof penetrations.
   1. Seal penetrations with flashing sealant.
   2. For applications requiring only indoor insulation, terminate insulation above roof surface and seal with joint sealant. For applications requiring indoor and outdoor insulation, install insulation for outdoor applications tightly joined to indoor insulation ends. Seal joint with joint sealant.
   3. Extend jacket of outdoor insulation outside roof flashing at least 2 inches below top of roof flashing.
   4. Seal jacket to roof flashing with flashing sealant.

B. Insulation Installation at Below-Grade Exterior Wall Penetrations: Terminate insulation flush with sleeve seal. Seal terminations with flashing sealant.

C. Insulation Installation at Aboveground Exterior Wall Penetrations: Install insulation continuously through wall penetrations.
   1. Seal penetrations with flashing sealant.
   2. For applications requiring only indoor insulation, terminate insulation inside wall surface and seal with joint sealant. For applications requiring indoor and outdoor insulation, install insulation for outdoor applications tightly joined to indoor insulation ends. Seal joint with joint sealant.
   3. Extend jacket of outdoor insulation outside wall flashing and overlap wall flashing at least 2 inches.
   4. Seal jacket to wall flashing with flashing sealant.

D. Insulation Installation at Interior Wall and Partition Penetrations (That Are Not Fire Rated): Install insulation continuously through walls and partitions.

E. Insulation Installation at Fire-Rated Wall and Partition Penetrations: Install insulation continuously through penetrations of fire-rated walls and partitions.

F. Insulation Installation at Floor Penetrations:
   1. Install insulation continuously through floor penetrations.

3.5 GENERAL PIPE INSULATION INSTALLATION

A. Requirements in this Article generally apply to all insulation materials except where more specific requirements are specified in various pipe insulation material installation articles.

B. Insulation Installation on Fittings, Valves, Strainers, Flanges, and Unions:

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1. Install insulation over fittings, valves, strainers, flanges, unions, and other specialties with continuous thermal and vapor-retarder integrity, unless otherwise indicated.

2. Fittings shall be insulated to same thickness as the adjoining insulation. Apply fittings per fitting manufacturer’s instructions. When required by specification, a hard insert of sufficient length shall be utilized to avoid compression of the insulation.

3. Insulate tee fittings with preformed fitting insulation or sectional pipe insulation of same material and thickness as used for adjacent pipe. Cut sectional pipe wire. Bond pieces with adhesive.

4. Insulate valves using preformed fitting insulation or sectional pipe insulation of same material, density, and thickness as used for adjacent pipe. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker. For valves, insulate up to and including the bonnets, valve stuffing-box studs, bolts, and nuts. Fill joints, seams, and irregular surfaces with insulating cement.

5. Insulate strainers using preformed fitting insulation or sectional pipe insulation of same material, density, and thickness as used for adjacent pipe. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker. Fill joints, seams, and irregular surfaces with insulating cement. Insulate strainers so strainer basket flange or plug can be easily removed and replaced without damaging the insulation and jacket. Provide a removable reusable insulation cover. For below ambient services, provide a design that maintains vapor barrier.

6. Insulate flanges and unions using a section of oversized preformed pipe insulation. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker.

7. Cover segmented insulated surfaces with a layer of finishing cement and coat with a mastic. Install vapor-barrier mastic for below ambient services and a breather mastic for above ambient services. Reinforce the mastic with fabric reinforcing mesh. Trowel the mastic to a smooth and well-shaped contour.

8. For services not specified to receive a field-applied jacket except for flexible elastomeric and polyolefin, install fitted PVC cover over elbows, tees, strainers, valves, flanges, and unions. Terminate ends with PVC end caps. Tape PVC covers to adjoining insulation facing using PVC tape.

9. Stencil or label the outside insulation jacket of each union with the word UNION.” Match size and color of pipe labels.

C. Insulate instrument connections for thermometers, pressure gages, pressure temperature taps, test connections, flow meters, sensors, switches, and transmitters on insulated pipes, vessels, and equipment. Shape insulation at these connections by tapering it to and around the connection with insulating cement and finish with finishing cement, mastic, and flashing sealant.

D. Install removable insulation covers at locations indicated. Installation shall conform to the following:

1. Make removable flange and union insulation from sectional pipe insulation of same thickness as that on adjoining pipe. Install same insulation jacket as adjoining pipe insulation.

2. When flange and union covers are made from sectional pipe insulation, extend insulation from flanges or union long at least two times the insulation thickness over adjacent pipe insulation on each side of flange or union. Secure flange
cover in place with stainless-steel or aluminum bands. Select band material compatible with insulation and jacket.

3. Construct removable valve insulation covers in same manner as for flanges except divide the two-part section on the vertical center line of valve body.

4. When covers are made from block insulation, make two halves, each consisting of mitered blocks wired to stainless-steel fabric. Secure this wire frame, with its attached insulation, to flanges with tie wire. Extend insulation at least 2 inches over adjacent pipe insulation on each side of valve. Fill space between flange or union cover and pipe insulation with insulating cement. Finish cover assembly with insulating cement applied in two coats. After first coat is dry, apply and trowel second coat to a smooth finish.

5. Unless a PVC jacket is indicated in field-applied jacket schedules, finish exposed surfaces with a metal jacket.

3.6 MINERAL-FIBER INSULATION INSTALLATION

A. Insulation Installation on Straight Pipes and Tubes:
   1. Secure each layer of preformed pipe insulation to pipe with wire or bands and tighten bands without deforming insulation materials, unless jacketing with self-sealing laps are used.
   2. Where vapor barriers are indicated, seal longitudinal seams, end joints, and protrusions with vapor-barrier mastic and joint sealant.
   3. For insulation with factory-applied jackets on above ambient surfaces, secure laps with outward clinched staples at 6 inches o.c.
   4. For insulation with factory-applied jackets on below ambient surfaces, do not staple longitudinal tabs but secure tabs with additional adhesive as recommended by insulation material manufacturer and seal with vapor-barrier mastic and flashing sealant.

B. Insulation Installation on Pipe Flanges:
   1. Install preformed pipe insulation to outer diameter of pipe flange.
   2. Make width of insulation section same as overall width of flange and bolts, plus twice the thickness of pipe insulation.
   3. Fill voids between inner circumference of flange insulation and outer circumference of adjacent straight pipe segments with mineral-fiber blanket insulation.
   4. Install jacket material with manufacturer’s recommended adhesive, overlap seams at least 1 inch, and seal joints with flashing sealant.

C. Insulation Installation on Pipe Fittings and Elbows:
   1. Install preformed sections of same material as straight segments of pipe insulation when available.
   2. When preformed insulation elbows and fittings are not available, install mitered sections of pipe insulation, to a thickness equal to adjoining pipe insulation. Secure insulation materials with wire or bands.

D. Insulation Installation on Valves and Pipe Specialties:
   1. Install preformed sections of same material as straight segments of pipe insulation when available.
2. When preformed sections are not available, install mitered sections of pipe insulation to valve body.

3. Arrange insulation to permit access to packing and to allow valve operation without disturbing insulation.

4. Install insulation to flanges as specified for flange insulation application.

3.7 FIELD-APPLIED JACKET INSTALLATION

A. Where glass-cloth jackets are indicated, install directly over bare insulation or insulation with factory-applied jackets.

1. Draw jacket smooth and tight to surface with 2-inch overlap at seams and joints.
2. Embed glass cloth between two 0.062-inch- thick coats of lagging adhesive.
3. Completely encapsulate insulation with coating, leaving no exposed insulation.

B. Where FSK jackets are indicated, install as follows:

1. Draw jacket material smooth and tight.
2. Install lap or joint strips with same material as jacket.
3. Secure jacket to insulation with manufacturer’s recommended adhesive.
4. Install jacket with 1-1/2-inch laps at longitudinal seams and 3-inch- wide joint strips at end joints.
5. Seal openings, punctures, and breaks in vapor-retarder jackets and exposed insulation with vapor-barrier mastic.

C. Where PVC jackets are indicated, install with 1-inch overlap at longitudinal seams and end joints; for horizontal applications, install with longitudinal seams along top and bottom of tanks and vessels. Seal with manufacturer’s recommended adhesive.

1. Apply two continuous beads of adhesive to seams and joints, one bead under lap and the finish bead along seam and joint edge.

D. Where metal jackets are indicated, install with 2-inch overlap at longitudinal seams and end joints. Overlap longitudinal seams arranged to shed water. Seal end joints with weatherproof sealant recommended by insulation manufacturer. Secure jacket with stainless-steel bands 12 inches o.c. and at end joints.

1. Where rubber membrane jackets are indicated, install the membrane using the manufacturer’s recommended adhesive. Before use thoroughly stir the adhesive. Replace the container lid when work is interrupted. If required thin the adhesive as recommended by the manufacturer.
2. Using a sheepskin or similar roller apply a primer coat of adhesive to the roof surface, priming only the area of roof where the membrane will be laid the same day. Allow adhesive to dry.
3. Unroll the membrane and fold back approximately half its length.
4. Apply adhesive with a sheepskin or similar roller to the underside of the membrane ensuring the weld area is kept free of adhesive and allow to touch dry.
5. Carefully roll out the membrane over the previously primed surface and roll with water filled roller.
6. Fold back other half of the roll of membrane and repeat the procedure.
7. Unroll the next roll of membrane, ensuring the end laps are staggered and the side overlaps the previously installed sheet by 2 inches.
8. Repeat the adhering process.
9. Fully hot air weld the 2-inch side lap, allow to cool completely.
10. Mechanically check the integrity of the cooled weld by running a 3/16-inch wide screwdriver (with rounded edges) along the seam applying pressure into the seam.
11. Install Peel Stop and PVC Welding Cord at all perimeters, penetrations and changes of roof direction.

E. Pipe Sound Lagging:
1. Seal and fasten in accordance with manufacturer’s written instructions to maintain specified STC rating.
2. Cover entire pipe with glass fiber wrap. Fill all voids with clean glass fiber scrap. Apply over this wrap an airtight cover of loaded vinyl. Do not connect the cover rigidly to pipe or hangers. Overlap longitudinal seams in loaded vinyl 2-inch minimum and tape with cloth-backed tape. Overlap edge seams 1-inch minimum and tape with cloth-backed tape or with acoustical sealant. Extend ends of cover within 1/2-inch of penetration through wall, ceiling, and/or floor. Seal annular gap between pipe lagging and penetration airtight with acoustic sealant.

3.8 FINISHES

A. Finish Equipment, and Pipe Insulation with ASJ, Glass-Cloth, or Other Paintable Jacket Material: Refer to Division 09 painting Sections.
B. Flexible Elastomeric Thermal Insulation: After adhesive has fully cured, apply two coats of insulation manufacturer’s recommended protective coating.
C. Color: Final color as selected by Architect. Vary first and second coats to allow visual inspection of the completed Work.
D. Do not field paint aluminum or stainless-steel jackets.
E. Clad-type weather-resistant jacket such as Venture clad may be used to finish plumbing equipment exposed to weather.
F. Piping exposed to weather Knauf Earthwool Redi-Klad 1000 Pipe Insulation with Ecost® Technology may be utilized as long as it is installed per the manufacturer’s installation procedures.

3.9 INSULATION APPLICATION SCHEDULE

A. Acceptable insulation materials, thickness and vapor retarder requirements are identified for each application and size range. If more than one material is listed for an application and size range, selection from the materials listed is Contractor’s option.
B. Items Not Insulated: Unless otherwise indicated, do not install insulation on the following:

1. Fire-suppression piping.
2. Drainage piping located in crawl spaces.
4. Chrome-plated pipes and fittings unless there is a potential for personnel injury.
5. Vibration-control devices.
6. Factory-insulated access panels and doors.

3.10 PLUMBING PIPING INSULATION APPLICATION SCHEDULE:

<table>
<thead>
<tr>
<th>SERVICE</th>
<th>INSULATION MATERIAL</th>
<th>VAPOR RETARDER REQUIRED</th>
<th>PIPE SIZE</th>
<th>INSULATION THICKNESS REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic cold water, potable and non-potable (Indoor)</td>
<td>Glass Mineral Wool</td>
<td>Yes</td>
<td>&lt;1”</td>
<td>0.5”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1” to &lt;8”</td>
<td>1”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>≥ 8”</td>
<td>1.5”</td>
</tr>
</tbody>
</table>

Notes:
1. Unconditioned spaces include locations where summer temperature and humidity conditions are similar to outdoor conditions (such as mechanical rooms ventilated with unconditioned outdoor air, parking garages, pedestrian tunnels, etc.)
2. Where rigid pipe insulation (cellular glass, etc.) is scheduled, provide mineral fiber through and 6 inches beyond pipe sleeves, to allow for pipe expansion.
### 3.11 FIELD APPLIED JACKET APPLICATION SCHEDULE

<table>
<thead>
<tr>
<th>SERVICE</th>
<th>FIELD APPLIED JACKET TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indoor, exposed insulated piping within 12 feet of floor, for service temperatures 200 degrees F and below.</td>
<td>PVC or Earthwool</td>
</tr>
<tr>
<td></td>
<td>Redi-klad</td>
</tr>
<tr>
<td>Indoor, exposed insulated piping greater than 12 feet above floor, generally.</td>
<td>None</td>
</tr>
<tr>
<td>Indoor, cold service piping (domestic cold water) greater than 12 feet above the floor, within spaces subject to outdoor temperature and humidity conditions (such as mechanical and electrical rooms ventilated with unconditioned outdoor air, parking garages, pedestrian tunnels, etc.)</td>
<td>PVC or Earthwool</td>
</tr>
<tr>
<td></td>
<td>Redi-Klad</td>
</tr>
<tr>
<td>Indoor concealed piping</td>
<td>None</td>
</tr>
<tr>
<td>Indoor, All Locations, Fittings and valves in piping systems at service temperatures 200 degrees F and below.</td>
<td>Factory Fabricated PVC covers</td>
</tr>
</tbody>
</table>

Jacket Application Schedule Notes:

1. Refer to Part 3 specification section titled “Equipment, Tank, and Vessel Insulation Installation” for requirements for removable, re-usable metal boxes lined with insulation at pumps.
2. Including factory insulated equipment without factory applied jacket.
3. If ductwork or piping indicated to have sound lagging also requires an additional field jacket, install sound lagging between insulation and additional field jacket.

END OF SECTION
SECTION 15105

PIPES AND TUBES FOR PLUMBING PIPING AND EQUIPMENT

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, and all sections of Division 15.

1.2 SUMMARY

A. Section includes:
   1. Domestic water piping, within 5 feet of building.
   2. Unions and flanges
   3. Piping Specialties and Accessories.
   4. Limited Pipe Fittings.

B. Related Sections: The following Sections contain requirements that relate to this Section:
   1. Division 15 Section: “Common Work Results for Plumbing.”
   2. Division 15 Section: “Hangers and Supports for Plumbing Piping and Equipment”: Product requirements for hangers and supports for placement by this section.
   3. Division 15 Section: “Identification for Plumbing Piping and Equipment.”
   4. Division 15 Section: “Plumbing Insulation”: Product requirements for piping insulation for placement by this section.
   5. Division 15 Section: “Plumbing Piping System Cleaning and Treatment.”

1.3 DEFINITIONS

A. Point of Delivery is the outlet of the service meter assembly, or the outlet of the service regular (service shutoff valve when no meter is provided).

B. Domestic Water Systems: A system conveying domestic potable or non-potable water, such as Cold Water, Hot Water, Hot Water circulating, etc.

C. Gravity Drainage Systems: A system of gravity fed effluent conveying storm water, sanitary, etc.

D. Lead Free:
   1. The pipes, pipe fittings, plumbing fittings or fixtures in plumbing systems that are intended to dispense potable water for human consumption, including drinking and cooking, shall be "lead free", containing not more than a weighted average of 0.25% lead with respect to the wetted surfaces.
   2. Solder and flux for soldered joints in potable water piping shall be "lead free", containing not more than 0.2% lead free.

1.4 REFERENCES

(Unless otherwise noted, references apply to “latest editions.”)
A. ANSI (American National Standards Institute)

17. ANSI / NSF Standard 61 Drinking Water System Components – Health effects.

B. ASME (American Society of Mechanical Engineers)


C. ASSE (American Society of Sanitary Engineers)


D. ASTM (American Society for Testing and Materials)

19. ASTM A780, "Standard Practice for Repair of Damaged and Un-coated Areas of
WILLIAMSPORT HIGH SCHOOL – WATER LINE REPLACEMENT


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55. ASTM D2765, "Test methods for determination of Gel Content and Swell Ration of Cross-Linked Ethylene Plastics."
56. ASTM D6394, "Specification for Sulfone Plastics (SP)."

E. AWS (American Welding Society)

F. AWWA (American Water Works Association)
10. AWWA C904, "Standard for Cross-Linked Polyethylene (PEX) pressure pipe, ½ inch through 3 inch for water service.

G. CISPI (Cast Iron Soil Pipe Institute)
2. CISPI 310-11, "Specification for Couplings for use in connection with Cast Iron Soil Pipe for sanitary and storm drain, waste and vent piping applications."

H. CS (Commercial Standard)
I. CSA (Canadian Standards Association)
1. CSA B137.11 Polypropylene (PP-R) Pipe and Fittings for Pressure Applications

J. IEEE (Institute of Electrical and Electronics Engineers)

K. IMC (International Mechanical Code)

L. IPC (International Plumbing Code)

M. MOSHA (Maryland Occupational Safety and Health Administration)

N. NEC (National Electrical Code)

O. NEMA (National Electrical Manufacturers Association)

P. NFPA (National Fire Protection Association)

Q. OSHA (Occupational Safety and Health Administration)

R. UL (Underwriters’ Laboratories)

1.5 SUBMITTALS

A. Division 1 Section: “Submitts”: Submittal Procedures.

B. Shop Drawings: Indicate layout of piping systems, including equipment, critical dimensions, and sizes.

C. Maintenance data to be included in the operation and maintenance manual specified in Division 01. Include detailed manufacturer's instructions on adjusting, servicing, disassembling, and repairing. Include data for the following:
   1. Pipe Materials
   2. Flow Measuring Systems
   3. Plumbing Specialties

D. Project Record Documents: Record actual locations of piping mains with invert elevations, valves, manholes, and leak detection and location system.

E. Welder certificates signed by Contractor certifying that welders comply with requirements specified under the “Quality Assurance” Article.

F. Polypropylene (PP-R) welding certificates signed by the manufacturer certifying that installers comply with all the requirements specified by the piping manufacturer and have been thoroughly trained in the installation and welding of Polypropylene (PP-R) piping.

G. Certification of compliance with ASTM, ASME and ANSI manufacturing requirements for pipe, fittings, and specialties.

H. Submit flange gasket bolt tightening sequence and torque requirements for review as part of gasket submittals.

I. Product Data: Submit data on each type of pipe material and fittings. Submit
manufacturer’s catalogue information.


1.6 QUALITY ASSURANCE

A. Perform Work in accordance with ASME B31.9 code for installation of piping systems and ASME Section IX for welding materials and procedures.

B. Furnish shutoff valves complying with ASME B16.33 or ANSI Z21.15

C. Perform work in accordance with Authority Having Jurisdiction requirements

D. ASME (American Society of Mechanical Engineers) Compliance; comply with:
   1. ASME B31.9, Building Services Piping, latest edition.

E. Qualify welding processes and welding operators according to AWS D1.1, Structural Welding Code—Steel, "latest edition".
   1. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

F. Evaluate leak detection and location system by independent third party according to Third Party Procedures developed according to US EPS's "Standard Test Procedure for Evaluating Leak Detection Methods: Liquid-Phase Out-of-Tank Product Detectors." Evaluation results to verify system manufacturer's claim regarding sensitivity, range and other performance data.

G. All grooved joint couplings, fittings, valves, and specialties shall be the products of a single manufacturer. Grooving tools shall be of the same manufacturer as the grooved components.
   1. All castings used for coupling housings, fittings, valve bodies, etc...shall be date stamped for quality assurance and traceability.

H. Regulatory Requirements: Comply with the requirements of the following additional codes:
   1. NFPA 54, National Fuel Gas Code for gas piping materials and components, gas piping installations, and inspection, testing, and purging of gas piping systems.
   2. International Mechanical Code (IMC).
   5. NFPA 31, Standard for the Installation of Oil Burning Equipment for oil piping materials and components, oil piping installation, and inspection, and testing of fuel oil piping systems.

I. Cast Iron Pipe; No Hub: All pipe and fittings shall bear the Collective Trademark of the Cast Iron Soil Pipe Institute and be listed by NSF International.

1.7 QUALIFICATIONS
A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum five years experience.

B. Installer: Company specializing in performing work of this section with minimum 5 years experience.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Comply with Division 1 Section: “Transportation and Handling” and Division 1 Section: “Storage and Protection”.

B. Furnish temporary end caps and closures on piping and fittings. Maintain in place until installation.

C. Protect piping from entry of foreign materials by temporary covers, completing sections of the Work, and isolating parts of completed system.

D. Handling Flammable Liquids: Remove and legally dispose of liquid from drips in existing gas piping and handle cautiously to avoid spillage or ignition. Notify the gas supplier. Handle flammable liquids used by the installer with proper precautions, and do not leave on the premises from the end of one working day to the beginning of the next.

1.9 FIELD MEASUREMENTS

A. Verify field measurements prior to fabrication.

1.10 SEQUENCING AND SCHEDULING

A. Notification of Interruption of Service: Provide notification for all utility outages.

B. Work Interruptions: When interruptions in work occur while repairs or alterations are being made to an existing piping system, leave the system in safe condition.

C. Coordinate the installation of pipe sleeves for foundation wall penetrations.

D. Coordinate the size and location of concrete pads. Cast anchor bolt inserts into pad.

E. Coordinate the installation of roof piping support, and roof penetrations.

1.11 ENVIRONMENTAL REQUIREMENTS

A. Division 1 Section: “Product Options and Substitutions”: Environmental conditions affecting products on site.

B. Do not install underground piping when bedding is wet or frozen.

1.12 WARRANTY

A. Division 1 Section: “Contract Closeout Procedures”: Product warranties and product bonds.

B. Furnish five year manufacturer warranty for valves excluding packing.

C. Furnish five year manufacturer warranty for leak detection and location system.
1.13 COORDINATION

A. Division 1 Sections: “Requirements for coordination Notification of Interruption of Service: Provide notification for all utility outages.

B. Work Interruptions: When interruptions in work occur while repairs or alterations are being made to an existing piping system, leave the system in safe condition.

C. Coordinate installation of buried piping with trenching.

D. Coordinate the installation of pipe sleeves for foundation wall penetrations.

E. Coordinate the size and location of concrete pads. Cast anchor bolt inserts into pad.

F. Coordinate the installation of roof piping support, and roof penetrations.

PART 2 PRODUCTS

2.1 PIPE AND TUBE MATERIALS AND APPLICATION SCHEDULE

<table>
<thead>
<tr>
<th>System</th>
<th>Pipe Material</th>
<th>Fitting Material</th>
<th>Joint Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic Cold Water (Below Grade)</td>
<td>4” and larger: Ductile Iron: AWWA C151 or with AWWA C104 cement mortar lining.</td>
<td>4” and Larger: Ductile Iron: AWWA C 110 or AWWA C153, with AWWA C104 cement mortar lining.</td>
<td>AWWA C111 rubber gasket with rods</td>
</tr>
<tr>
<td>Domestic Cold Water (Above ground within building)</td>
<td>Copper Tube: ASTM B88, Type L, Seamless, Water Tube, hard-drawn temper.</td>
<td>Copper Tube: ASME B16.22, wrought copper, or copper alloy, solder joint, 150 lb.</td>
<td>For Pipe Sizes of 4” or less: ASTM B32, alloy Sb5 (95 percent tin and 5 percent antimony), with 0.2 percent maximum lead content. Note 1. For Pipe Sizes over 4”: Joints shall be silver soldered.</td>
</tr>
</tbody>
</table>

Note 1: For copper piping 4” and smaller above floor level, the Viega ProPress System of mechanical joint copper tubing assembly will be acceptable, Nibco Press System, or approved equivalent. The ProPress System shall consist of an electrohydraulic pressure crimping tool, with sets of interchangeable crimping jaws, and ProPress special copper fittings. The fittings shall include an O-sealing ring, and shall require no torches, solders, flux, or special pipe burnishing or preparation. A permanent, watertight seal is made by crimping the fittings. Rated at 200 psi; tested to 600 psi. The systems shall be installed in accordance with manufacturer’s installation instructions and governing code requirements. Pipe supports shall be installed so that interior horizontal piping is in uniform alignment.

2.2 PIPING SPECIALTIES

A. Pipe Flange Gasket Materials: Suitable for the chemical and thermal conditions of the
piping system contents:

1. ASME B16.21, nonmetallic, flat, asbestos-free, 1/8" (3mm) maximum thickness, except where thickness or specific material is indicated.
   a. Full-Face Type: For flat-face, Class 125 cast-iron and cast bronze flanges.
   b. Narrow-Face Type: For raised-face, Class 250 cast-iron and steel flanges.
2. ASME B16.20, for grooved, ring joint, steel flanges.
3. AWWA C110, rubber, flat face, 1/8 inch (3 mm) thick, except where other thickness is indicated; and full-face or ring type, except where type is indicated.

B. Flange Bolts and Nuts:

1. ASME B18.2.1, carbon steel, except where other material is indicated.

C. Plastic Pipe Flange Bolts, Washers and Nuts: Type and material recommended by piping system manufacturer, except where other type or material is indicated. Flat washers must be used under nuts and bolts. Gaskets to be full face, 1/8th inch thick, 70 durometer and of a material recommended for the application by the manufacturer.

D. Unions: Lead Free, ANSI B16.39, Class 150, malleable iron; female pattern; brass to iron seat; ground joint. Threads shall conform to ANSI/ASME B1.20.1. Unions in copper piping shall be sweat fittings with bronze seats designed for 200 psig working pressure.

E. Dielectric Unions: Lead Free, provide dielectric unions with appropriate end connections for the pipe materials in which installed (screwed, soldered, or flanged), which effectively isolate dissimilar metals, prevent galvanic action, and stop corrosion.

F. Dielectric Fittings: Lead Free, provide dielectric fittings with appropriate end connections and piping materials. Dielectric fittings shall be as manufactured by Victaulic Style 47, Legend Valve Company Model T-575 or acceptable comparable product.

G. Strainers – “Y” Type:

1. Strainers shall be lead free and of the basket or “Y” design, as manufactured by Watts, Nibco, Victaulic, Wilkens (A Zurn company), Grinnell or an comparable acceptable product. Bodies shall have arrows clearly cast on the sides to show flow direction. Strainers shall be equipped with easily removable covers and standard stainless steel screens. Total area of perforations shall be not less than four times the cross section of the entering pipe.
2. Provide valved blow off connections for all strainers full size of blow off tapping, with capped ends.

H. Welding Materials: Comply, with Section II, Part C. ASME Boiler and Pressure Vessel Code for welding materials appropriate for the wall thickness and chemical analysis of the pipe being welded.

I. Drainage System Specialties

1. Cleanouts: ASME A112.36.2M, cast-iron body with straight threads and gasket seal or taper threads for plug flashing flange and clamping ring, and a brass closure plug. Cleanouts for installation in floors not having membrane waterproofing may be furnished without clamping ring.
Cleanouts in Piping: Zurn Model No. Z-1440-BP, or Watts Model C0-380 epoxy coated cast iron body with bronze plug, comparable products as manufactured by Josam or J.R. Smith may be submitted for review.

J. Dielectric Fittings: Lead free assembly or fitting having insulating material isolating joined dissimilar metals to prevent galvanic action and stop corrosion.

1. Description: Combination of copper alloy and ferrous; threaded, solder, plain, and weld neck end types and matching piping system materials.

2. Insulating Material: Suitable for system fluid, pressure, and temperature.

3. Dielectric Unions: Factory-fabricated, union assembly for 250-psig minimum working pressure at a 180°F temperature.

4. Dielectric Flanges: Factory-fabricated, companion-flange assembly for 150- or 300-psig minimum pressure to suit system pressures.

5. Dielectric-Flange Insulation Kits: Materials for flange isolation kits on pipes containing drinking/potable water (up to 280°F) shall consist of the following components:

a. Isolating and Sealing Gasket:
   1) The full faced, NSF 61 certified, isolating and sealing gasket shall be LineBacker® 61™ Sealing Gasket (LB61) – Type “E”, 1/8” thick, G-10 retainer containing a precision tapered groove to accommodate the controlled compression of a EPDM quad-ring sealing element. Sealing element placement shall accommodate either flat, raised face or RTJ flanges.

   2) The quad-ring seal shall be pressure energized. The G-10 retainer shall have a 550 volts/mil dielectric strength and a minimum 50,000 psi compressive strength.

   3) The full faced flange isolating gasket (weld-neck) shall be equal to or slightly smaller than the bore of the flange; (slip-on) shall be equal to or smaller than the I.D. of mating pipe.

b. Full Length Bolt Isolating Sleeves:
   1) One full length G-10 Sleeve (extending half way into both steel washers) for each flange bolt. The G-10 shall be a 1/32 inch thick tube with a 400 volts/mil dielectric strength and water absorption of 0.10% or less.

c. Washers:
   1) Two, 1/8 inch thick, G-10 isolating washers for each bolt. Their compressive strength shall be 50,000 psi, dielectric strength 550 volts/mil and water absorption 0.10% or less.

   2) Two, 1/8 inch thick zinc plated, hot rolled steel washers for each bolt. The I.D. of all washers shall fit over the isolating sleeve and both the steel and isolating washers shall have a same I.D. and O.D.

d. Quality:
   1) Flange isolating kits shall be manufactured at a facility that has a registered ISO 9001:2008 Quality Management System.
Submittals shall include copy of valid ISO registration and NSF 61 certification.

e. Basis of Design:
   1) Flange gasket kits shall be manufactured by PSI-Pipeline Seal and Insulator, Inc., Houston, Texas. Comparable products shall be submitted as required under Section Product Requirements for comparable product review. Products should be submitted to engineer 10 days prior to bid due date.

6. Dielectric Couplings: Lead free galvanized-steel coupling, having inert and noncorrosive, thermoplastic lining, with threaded ends and 300-psig (2070kPa) minimum working pressure at 225°F (107°C) temperature.

7. Dielectric Nipples: Lead free electroplated steel or ductile nipple, having inert and noncorrosive thermoplastic lining, with combination of plain, threaded, or grooved end types and 300-psig (2070kPa) working pressure at 230 °F (110°C) temperature. Victaulic Style 47 or Grinnell Style 407.

K. Vacuum Breakers:

1. Pipe Applied, Atmospheric Vacuum Breaker shall conform to ASSE 1001, with floating disc and atmospheric vent.

2. Hose connection vacuum breakers shall conform to ASSE Standard 1011, with finish to match hose connection.

3. Laboratory Faucet Vacuum Breakers: ASSE 1035, chrome plated; consisting of primary and secondary checks, intermediate vacuum breaker, threaded ends, 1/4" or 3/8" size as required, for continuous pressure application.

4. Vacuum breakers shall be lead free.

L. Pipe Anchors:

1. Steel Shapes and Plates: ASTM A 36/A 36M.

2. Bolts and Nuts: ASME B18.10 or ASTM A 183, steel, hex head.


5. Chemical Fasteners: Insert-type-stud bonding system anchor for use with hardened Portland cement concrete, and tension and shear capacities appropriate for application.
   a. Bonding Material: ASTM C 881, Type IV, Grade 3, 2-component epoxy resin suitable for surface temperature of hardened concrete where fastener is to be installed.

6. Concrete: Portland cement mix, 3000 psi minimum. Refer to Division 03 Section: "Cast-in-Place Concrete" for formwork, reinforcement, and concrete. Grout: Refer to Division 22 Section: "Common Work Results for Plumbing."

7. For Polypropylene (PP-R) piping: Raywal BISMAT 5000 single screw pipe
clamp/guide.

2.3 SLEEVE PENETRATION SYSTEMS

A. General: Provide protective sheathing or wrapping between metal pipes and sleeves to prevent pipes from corroding.

B. Sleeves shall be provided around all pipes through walls, floors, ceilings, partitions, structure members or other building parts. Sleeves through walls and floors shall be standard weight galvanized iron pipe two sizes larger than the pipe or insulation so that pipe or insulation shall pass through freely with space for movement for all piping which passes through masonry or concrete walls or floors. Provide 20 gauge galvanized steel sheet or galvanized pipe sleeves for all piping passing through frame walls.

C. Sleeves through floors shall be flush with the floor except for sleeves passing through Mechanical Rooms which shall extend ¾” above the floor. Space between the pipe and sleeve shall be caulked. Escutcheon plates shall be constructed to conceal the ends of sleeves.

D. Sleeves through walls and floors shall be sealed.

E. Penetrations through fire rated walls and floors.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify excavations and trenches are ready to receive piping.

B. Examine piping system for compliance with requirements for installation tolerances and other conditions affecting performance of installed devices. Do not proceed with installation until unsatisfactory conditions have been corrected.

C. Examine mating flange faces for conditions that might cause leakage. Check bolting for proper size, length, and material. Check gasket material for proper size, material composition suitable for service, and freedom from defects and damage.

D. Examine substrates and conditions under which pipe expansion joints, pipe alignment guides, and pipe anchors are to be installed. Do not proceed until unsatisfactory conditions have been corrected.

E. Do not enclose, cover, or put into operation any piping system until it has been inspected by the authority having jurisdiction and tested as specified herein.

F. Examine grooved ends for form and cleanliness. Ends shall be clean and free from indentations, projections, and roll marks in the area from valve, fitting, or pipe end to (and including) the groove.

3.2 PREPARATION

A. Ream pipe and tube ends. Remove burrs. Bevel or groove plain end ferrous pipe.

B. Remove scale and dirt on inside and outside before assembly.
C. Prepare piping connections to equipment with flanges or unions.

D. Unions and flanges for servicing and disconnect are not required in installations using grooved mechanical joint couplings. (The couplings shall serve as disconnect points if required.)

E. Keep open ends of pipe free from scale and dirt. Protect open ends with temporary plugs or caps.

F. Preparation For Testing: Prepare water piping and condensate piping in accordance with ASME B31.9, and as follows:

1. Test for leaks and defects in new piping systems and parts of existing systems that have been altered, extended, or repaired. If testing is performed in segments, submit separate report for each test, complete with diagram of portion of system tested.

2. Leave joints including welds un-insulated and exposed for examination during the test.

3. Provide temporary restraints for expansion joints, which cannot sustain the reactions due to test pressure. If temporary restraints are not practical, isolate expansion joints from testing.

4. Flush system with clean water. Clean strainers.
   a. Provide temporary circulator for steam systems.
   b. Open a drain at the low point of the system while replacing the water through the make-up at the same rate.
   c. Continue flushing until clean water shows at the drain, but for not less than 24 hours.
   d. After flushing, remove strainers and clean and replace them.
   e. System shall be drained and flushed before final filling.
   f. Flushing pumps are to have fine mesh construction strainers installed and shall be pulled and cleaned after flush.
   g. Coordinate with Division 15 Section: “HVAC Piping Systems Cleaning and Treatment”.

5. Isolate equipment that is not to be subjected to the test pressure from the piping. If a valve is used to isolate the equipment, its closure shall be capable of sealing against the test pressure without damage to the valve. Flanged joints at which blinds are inserted to isolate equipment need not be tested.

6. Install relief valve set at a pressure no more than one-third higher than the test pressure, to protect against damage by expansion of liquid or other source of overpressure during the test.

7. For Polypropylene (PP-R) piping: While still accessible all piping shall be pressure/leak tested to the manufacturer’s standards. Tests shall be carried out using water, compressed air or a mixture of the two. The test pressure shall be 1.5 times the operating pressure or 150 psi, whichever is greater. Any leaks detected shall be repaired at the contractor’s expense by removing the leaking part and replacing with new parts welded per the pipe manufacturer’s guidelines. Tests shall be carried out following pipe manufacturer’s instructions.

3.3 INSTALLATION OF PIPING, GENERAL

A. Piping

1. Locations and Arrangements: Drawings (plans, schematics, and diagrams) indicate the general location and arrangement of piping systems. Locations and arrangements of piping take into consideration pipe sizing and friction loss,
expansion, pump sizing, and other design considerations. So far as practical, install piping as indicated.

2. Install concentric reducers where pipe is reduced in size in the direction of flow, with bottoms of both pipes and reducer flush.

3. Connect branch piping to mains from top of main, unless specific otherwise for specific systems.

4. Install supports in accordance with Specification Section 15060 - Hangers and Supports for Plumbing Piping and Equipment.

5. Make changes in directions and branch connections using fitting, pull tees shall not be permitted.

6. Install flanges, flange kits, and unions in pipes 2 inch and smaller, adjacent to each valve, at final connections each piece of equipment, and elsewhere as indicated. Unions are not required on flanged devices.

7. Install dielectric unions where piping of dissimilar metals are joined.

8. Install flanges on valves, apparatus, and equipment having 2 1/2" inch and larger connections.

9. Install flexible connectors at inlet and discharge connections to pumps and other vibration producing equipment.

10. Install strainers on the supply side of each control valve, pressure regulating valve, and elsewhere as indicated. Install ¾" inch NPS nipple and ball valve in blow down connection of strainers. Use same size nipple and valve as blow-off connection of strainer.

11. Anchor piping to ensure proper direction of expansion and contraction. Anchors shall attach to the building structure to prevent pipe movement. Anchors shall be installed in such a manner to prevent damage to the building structure. Anchors shall be securely welded to the piping being anchored. Install expansion loops and joints as indicated on the Drawings.

12. Install pipe sleeves at all wall and floor penetrations. Provide protective sheathing or wrapping between metal pipes and sleeves to prevent pipes from corroding.

13. Seal pipe penetrations of fire separations specified in Division 7 Section – "Penetration Firestopping."

14. Hanger, supports, and anchors are specified in Specification Division 15 Section: "Hangers and Supports for Plumbing Piping and Equipment."

15. Install drains at low points in mains, risers, and branch lines consisting of a tee fitting, ¾" ball valve, and short ¾" threaded nipple and cap.

16. Exterior Wall Penetrations: Seal pipe penetrations through exterior walls using sleeves and mechanical sleeve seals. Pipe sleeves smaller than 6 inch shall be steel; pipe sleeves 6 inch and larger shall be sheet metal.

17. Install escutcheons at each wall, floor, and ceiling penetration in exposed finished locations and within cabinets and millwork. Use deep pattern escutcheons where required to conceal protruding pipe fittings.

18. In concealed locations where piping, other than cast iron or galvanized steel, is installed through holes or notches in studs, joists, rafters or similar members less than 1 ½" from the nearest edge of the member, the pipe shall be protected by steel shield plates. The plates shall be made of gage 16 and shall cover the area of the pipe where the member is notched or bored, and shall extend a minimum of 2" above sole plates and below tip plates.

B. INSTALLATION - ABOVE GROUND PIPING

1. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.

2. Install piping to maintain headroom without interfering with use of space or taking more space than necessary.

3. Group piping whenever practical at common elevations.
4. Sleeve pipe passing through partitions, walls and floors.
5. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
6. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings. Provide access where valves and fittings are not accessible.
7. Install non-conducting dielectric connections wherever jointing dissimilar metals.
8. Establish invert elevations, slopes for drainage to \( \frac{\frac{1}{4}}{\text{inch per foot}} \) 2 percent minimum. Maintain gradients.
9. Slope piping and arrange systems to drain at low points.
10. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the Work, and isolating parts of completed system.
11. Install piping penetrating roofed areas to maintain integrity of roof assembly.

C. Joint Construction

   a. Cut threads full and clean using sharp dies.
   b. Ream threaded ends to remove burrs and restore full inside diameter.
   c. Apply pipe joint lubricant or sealant, suitable for the service for which the pipe is intended, on the male threads at each joint.
   d. Tighten joint to leave not more than 3 threads exposed.
   e. Note the internal length of threads in fittings or valve ends, and proximity of internal seat or wall, to determine how far pipe should be threaded into joint.
   f. Align threads at point of assembly.
   g. Apply appropriate tape or thread compound to the external pipe threads.
   h. Assemble joint to appropriate thread depth. When using a wrench on valves place the wrench on the valve end into which the pipe is being threaded.
   i. Damaged Threads: Do not use pipe with threads which are corroded or damaged.
   j. Damaged Threads: Do not use pipe with threads which are corroded or damaged. If a weld opens during cutting or threading operations, that portion of pipe shall not be used.
2. Welded Joints: Weld pipe joints in accordance with ASME B31.9 and ASME B31.1, where required by COMAR.
   a. Remove stems, seats, and packing of valves and accessible internal parts of valves before brazing.
   b. Braze joints in accordance with ASME B31.1.
   c. Fill the tubing and fittings during brazing with nitrogen under a continuous purge to prevent formation of scale.
   d. Thoroughly clean tube surface and inside surface of the cup of the fittings, using very fine emery cloth, prior to making brazed joints. Wipe tube and fittings clean and apply flux. Flux shall not be used as the sole means for cleaning tube and fitting surfaces.
   e. Heat joints to proper and uniform temperature.
   f. WARNING: Some filler metals contain compounds which produce highly toxic fumes when heated. Provide adequate ventilation and avoid breathing fumes.
4. Flanged Joints: Align flanges surfaces parallel. Assemble joints by sequencing
3.4 INSTALLATION OF THREADED CONNECTIONS

A. Align threads at point of assembly.
B. Apply appropriate tape or thread compound to the external pipe threads, except where dry seal threading is specified.
C. Assemble joint, wrench tight.

3.5 INSTALLATION OF FLANGED CONNECTIONS

A. Align flange surfaces parallel.
B. Assemble joints by sequencing bolt tightening to make initial contact of flanges and gaskets as flat and parallel as possible. Use suitable lubricants on bolt threads. Tighten bolts gradually and uniformly with a torque wrench.
C. For dead-end service, butterfly valves require flanges both upstream and downstream for proper shutoff and retention.

3.6 INSTALLATION OF METERS, GAGES, THERMOMETERS, ETC.

A. Meters/Gages
   1. General: Where indicated, install meters and gages of types, sizes, capacities, and with features indicated.
   2. Install meters, gages, and accessories according to manufacturers' written instructions for applications where used.
   3. Install thermometers and adjust vertical and tilted positions.
   4. Remote-Reading Dial Thermometers: Install in control panels with tubing connecting panel and thermometer bulb supported to prevent kinks. Use minimum tubing length.
   5. Thermometer Wells: Install in vertical position in piping tees where thermometers are indicated.
      a. Install wells with stem extending minimum of 2 inches into fluid.
      b. Install wells with stem extending to center of pipe.
      c. Fill wells with oil or graphite and secure caps.

B. Pressure Gages
   1. Install pressure gages in piping tee with pressure gage face located on pipe at most readable position.
   2. Install in the following locations and elsewhere as indicated:
      a. At suction and discharge of each pump.
      b. At building water service entrance.
      c. On expansion tanks.

C. Installation - Test Plug
   1. Install test plugs in piping tees where indicated, located on pipe at most readable
position. Secure cap.

D. Installation - Flow-measuring System, Flow Element And Meter

1. General: Install flow meters for piping systems located in accessible locations at most readable position.
2. Locations: Install flow measuring elements and meters at discharge of each pump and elsewhere as indicated.
3. Differential-Pressure-Type Flow Elements: Install minimum straight lengths of pipe upstream and downstream from element as prescribed by the manufacturer’s installation instructions.
4. Install connection fittings for attachment to portable flow meters in readily accessible locations.
5. Permanently Mounted Meters for Flow Elements: Install meters on walls or brackets in accessible locations.
6. Install connections, tubing, and accessories between flow elements and meters as prescribed by manufacturer’s written instructions.

E. Connections - Meters

1. Install meters and gages adjacent to machines and equipment to allow servicing and maintenance.
2. Connect flow-measuring-system elements to meters.
3. Connect flow-meter transmitters to meters.
4. Make electrical connections to power supply and electrically operated meters and devices.

F. Adjusting and Cleaning - Meters

1. Calibrate meters according to manufacturer's written instructions, after installation.
2. Adjusting: Adjust faces of meters and gages to proper angle for best visibility.
3. Cleaning: Clean windows of meters and gages and factory-finished surfaces. Replace cracked and broken windows and repair scratched and marred surfaces with manufacturer's touchup paint.

G. Portable Meters

1. Turn-over portable meters to the Owner upon completion of the project.

3.7 FIELD QUALITY CONTROL

A. Testing shall be performed by Installer of system being tested in presence of the Owner’s representative. Provide seven (7) day advance notice prior to testing of systems.

B. Inspection of Piping Systems:

1. Do not enclose, cover, or put into operation any piping system until it has been inspected and approved by Owner’s Representative.
2. During progress of installation, notify the authority having jurisdiction seven (7) days prior to time such inspection must be made. Perform tests specified in presence of Owner’s Representative.
   a. Roughing-In Inspection: Arrange for inspection of piping system after system roughing-in, before concealing, and prior to setting fixtures.
   b. Final Inspection: Arrange for final inspection by Owner’s Representative.
to observe tests specified below and to ensure compliance with requirements of Owner’s Representative.

3. Re-inspections: Make required corrections and arrange for reinspection by Owner’s Representative when piping system fails to pass test or inspection.

4. Reports: Prepare and submit inspection reports for approval by Owner’s Representative.

C. Test domestic water piping systems in accordance with all applicable codes and the local authority having jurisdiction.

D. Leak Testing

E. Water Systems

1. Perform tests prior to installation of piping insulation.

2. Use ambient temperature water as the testing medium, except where there is a risk of damage due to freezing. Another liquid may be used if it is safe for workmen and compatible with the piping system components.

3. Examine system to see that equipment and parts that cannot withstand test pressures are properly isolated. Examine test equipment to ensure that it is tight and that low pressure filling lines are disconnected.

4. Subject piping system to a hydrostatic test pressure which at every point in the system is not less than 1.5 times the design pressure. The test pressure shall not exceed the maximum pressure for any vessel, pump, valve, or other component in the system under test. Make a check to verify that the stress due to pressure at the bottom of vertical runs does not exceed either 90 percent of specified minimum yield strength, or 1.7 times the ASE value in Appendix A of ASME B31.9, “Code For Pressure Piping, Building Services Piping.”

5. After the hydrostatic test pressure has been applied for at least 10 minutes, examine piping, joints, and connections for leakage. Eliminate leaks by tightening, repairing, or replacing components as appropriate, and repeat hydrostatic test until there are no leaks.

6. Test backflow preventors in accordance with the local plumbing code and requirements of the authority having jurisdiction.

3.8 CLEANING (Refer to Specification Section 15145 - “Plumbing Piping System Cleaning and Treatment.”)

3.9 PAINTING

A. Mechanical Room Piping: All piping including insulated systems located in Mechanical Rooms and equipment spaces shall be completely painted. Refer to Division 9 Section: “Painting”.

B. Touching Up: Clean field welds and abraded areas of paint. Use same materials as used for shop painting. Comply with SSPC-PA 1, “Shop, Field, and Maintenance Painting,” requirements for touching up field painted surfaces.

1. Apply by brush or spray to provide a minimum dry film thickness of 2.0 mils.

C. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A780.

D. Plastic Pipe shall be painted with Exterior Grade Latex Paint. DO NOT USE EPOXY OR OIL BASE PAINTS ON PLASTIC PIPE.

PIPES AND TUBES FOR PLUMBING PIPING AND EQUIPMENT
15105-19
END OF SECTION
SECTION 15110

GENERAL DUTY VALVES FOR PLUMBING PIPING

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, and all sections of Division 15.

1.2 SUMMARY

A. Section includes:
   1. Globe valves
   2. Check valves.
   3. Ball valves.
   5. Gate valves.
   6. Drain valves.
   7. Lubricated plug valves.
   8. Valving specialties.
   9. Trap priming systems.
   10. Multi-purpose valves.

B. Related Sections: The following Sections contain requirements that relate to this Section:
   1. Division 15 Section: “Common Work Results for Plumbing.”
   2. Division 15 Section: “Hangers and Supports for Plumbing and Equipment”:
      Product and installation requirements for pipe hangers and supports.
   3. Division 15 Section: “Identification for Plumbing Piping and Equipment”:
      Product and installation requirements for labeling and identification.
   4. Division 15 Section: “Plumbing Insulation”:
      Product and installation requirements for insulation for valves.
   5. Division 15 Section: “Pipes and Tubes for Plumbing and Equipment”:
      Product and installation requirements for piping materials applying to various system types.
   6. Division 15 Section: “Plumbing Piping System Cleaning and Treatment.”

1.3 REFERENCES
(Unless otherwise noted, references apply to “latest editions.”)

A. References listed in this section:
   1. ANSI (American National Standards Institute)
   2. API (American Petroleum Institute)
e. API 608, "Metal Ball Valves- Flanged and But-Welding Ends," August, 2002.

3. ASME (American Society of Mechanical Engineers)


5. ASTM (American Society for Testing and Materials)
c. MSSP SP-55, "Quality Standard for Steel Castings for Valves, Flanges and Fittings and Other Piping Components".
d. MSSP SP-61, "Pressure Testing of Steel Valves".
g. MSSP SP-70, "Cast Iron Gate Valves Flanged and Threaded Ends," 2006.
i. MSSP SP-72, "Ball Valves with Flanged Fitting," 1999.
j. MSSP SP 78 - Cast Iron Plug Valves, Flanged and Threaded Ends, 2005.
1.4 DEFINITIONS

A. Lead Free:

1. The pipes, pipe fittings, plumbing fittings or fixtures in plumbing systems that are intended to dispense potable water for human consumption, including drinking and cooking, shall be “lead free”, containing not more than a weighted average of 0.25% lead with respect to the wetted surfaces.

2. Solder and flux for soldered joints in potable water piping shall be “lead free”, containing not more than 0.2% lead.

1.5 SUBMITTALS

A. General: Submit each item in this Section according to the Conditions of the Contract and Division 1 Section: “Submittals”.

B. Product Data: Submit manufacturers catalog information with valve data and ratings for each service.

C. Manufacturer’s Installation Instructions: Submit hanging, support methods, and joining procedures.

D. Manufacturer’s Certificate: Certify products meet or exceed specified requirements.

1.6 CLOSEOUT SUBMITTALS

A. Project Record Documents: Record actual locations of valves.

B. Maintenance data to be included in the operation and maintenance manual specified in Division 1.

1.7 QUALITY ASSURANCE

A. Valves shall be provided by the same manufacturer when applicable.

B. MSS Compliance: Comply with the various MSS Standard Practice documents referenced.

C. Material shall be certified by NSF International as complying with NSF 14, NSF 61, and ASTM F 2389 or CSA B137.11.

D. Material shall comply with manufacturers specifications.

E. Material and installation shall be in accordance with NFPA 99, and as specified.

F. Testing shall be conducted by a party technically competent and experienced in the field of medical gas system testing. Testing and systems verification shall be performed by
personnel meeting the qualifications of ANSI/ASSE Standard 6030. Such testing shall be performed by a party other than the installing contractor.

1. Provide names of three projects where testing of medical or laboratory gases systems has been performed by the testing agency. Include the name of the project, names of such persons at that project who supervised the work for the project owner, or who accepted the report for the project owner, and a written statement that the projects listed required work of similar scope to that set forth in this specification.

2. Submit the testing agency's detailed procedure which will be followed in the testing of this project. Include details of the testing sequence, procedures for cross connection tests, outlet function tests, alarm tests, purity tests, etc., as required by this specification. For purity test procedures, include data on test methods, types of equipment to be used, calibration sources and method references.

3. Certification: Provide documentation prior to submitting request for final inspection to include all test results, the names of individuals performing work for the testing agency on this project, detailed procedures followed for all tests, and a certification that all results of tests were within limits allowed by this specification.

G. Lead Free:

1. Valves in plumbing systems that are intended to dispense potable water for human consumption, including drinking and cooling, shall be “lead free” containing not more than a weighted average of 0.25% lead with respect to the wetted surfaces.

2. Solder and flux for soldered joints in potable water piping shall be “lead free”, containing not more than 0.2% lead.

1.8 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum five years experience.

B. Installer: Company specializing in performing work of this section with minimum 5 years experience.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Comply with Division 1 Section: “Transportation and Handling” and Division 1 Section: “Storage and Protection”.

B. Accept valves on site in shipping containers with labeling in place. Inspect for damage.

C. Provide temporary protective coating on cast iron and steel valves.

D. Prepare for shipping as follows:

   1. Protect internal parts against rust and corrosion.
   2. Set globe and gate valves closed to prevent rattling.
   3. Set ball and plug valves open to minimize exposure of functional surfaces.
   4. Set butterfly valves closed or slightly open.
   5. Block check valves in either closed or open position.

E. Use the following precautions during storage:
1. Store indoors and maintain temperature higher than ambient dew-point temperature. If outdoor storage is necessary, store off the ground in watertight enclosures.

F. Use a sling to handle large valves. Rig to avoid damage to exposed parts. Do not use handwheels and stems as lifting or rigging points.

1.10 ENVIRONMENTAL REQUIREMENTS
A. Do not install valves underground when bedding is wet or frozen.

1.11 SEQUENCING AND SCHEDULING
A. Notification of Interruption of Service: Provide notification for all utility outages.

1.12 DEFINITIONS
A. Lead Free:
   1. The pipes, pipe fittings, plumbing fittings or fixtures in plumbing systems that are intended to dispense potable water for human consumption, including drinking and cooking, shall be "lead free", containing not more than a weighted average of 0.25% lead with respect to the wetted surfaces.
   2. Solder and flux for soldered joints in potable water piping shall be "lead free", containing not more than 0.2% lead.

1.13 WARRANTY
A. Division 1 Section: "Contract Closeout Procedures." Requirements for warranties.
B. Burnish five year manufacturer warranty for valves excluding packing.

1.14 EXTRA MATERIALS:
A. Division 1 Section: "Contract Closeout Procedures": Requirements for extra materials.
B. Furnish two packing kits for each valve size.

PART 2 PRODUCTS
2.1 VALVES - BASIC, COMMON FEATURES
A. Pressure and Temperature Ratings: As indicated in the “Application Schedule” of Part 3 of this Section and as required to suit system pressures and temperatures.
B. Sizes: Same size as upstream pipe, unless otherwise indicated.
C. Operators: Use specified operators and handwheels, except provide the following special operator features:
   1. Chain-Wheel Operators: For valves 3 inches and larger, installed 120 inches or higher above finished floor elevation.
   2. Gear-Drive Operators: For valves 8 inches and larger. Operator shall be factory
installed prior to delivery of job-site.
3. Lever Operators: Ball and butterfly valves 10" and less.

D. Extended Stems: Where insulation is indicated or specified, provide extended stems arranged to receive insulation.


G. Hexagonal Threaded Packing Adjustment: All ball valves.

H. Bypass and Drain Connections: Comply with MSS SP-45.

I. Memory Stops: Provide memory stops for all “Balancing” valves.

2.2 VALVE APPLICATION SCHEDULE:

A. Domestic Water:

1. Globe Valves:
   a. 1/8" through 2":

   1) Globe valves shall be class 250# WOG, rising stem, threaded bonnet, body with integral seat. The body, bonnet, union nut, disc holder & stem shall be ASTM B584 C89833, cast bronze (1/4" through 3/4" disc holder ASTM B16.) Bronze Disc. Hand wheel shall be Malleable iron. MSS SP-80, Type 2. Basis of Design:

   Milwaukee Model: UP502 (Threaded)
   Milwaukee Model: UP1502 (Sweat)
   Conbraco Industries: Apollo Model: 120 TF (Threaded)
   Conbraco Industries: Apollo Model: 120 SLF (Sweat)
   Other manufacturers: Hammond, Lunkenhimer

   2) Design valves in accordance with requirements of ANSI NSF-372, Senate Law S.3874.

   b. 2 ½" through 10":

   1) Globe valves shall be class 125# SWP, 200# WOG, rising stem, bolted bonnet. Body, bonnet, & Handwheel shall be ASTM A126, Class B cast iron. Stem & Packing Gland shall be ASTM B16, Brass. Seat Ring, Disc through 3" or disc ring for 4" through 10," yoke bushing, & swivel nut shall be cast ASTM B62, Bronze. 125 Lb. flanged ends. Packing will be Aramid Fiber & Graphite with a Neoprene binder for service up to 550°F, MSS SP-85. Basis of Design:

   Conbraco Industries: Apollo Model: 711F-LF
   Other manufacturers :Hammond, Lunkenhimer

   2) Design valves in accordance with requirements of ANSI NSF-
2. Check Valves:
   a. Horizontal Swing \( \frac{3}{4} \)" through 2":
      1) Check valves shall be class, 200# WOG, horizontal swing check, body with 5° integral seat. Body, cap, & Disc shall be of ASTM, B584 C89833 cast bronze. (Disc on \( \frac{3}{4} \)" through \( \frac{3}{8} \)" ASTM B16) Lever, retaining ring, and Hinge Pin shall be stainless steel. Plug shall be ASTM B16, Lever, MSS SP-80, Type 3. Basis of Design:
         Milwaukee Model: UP509 (Threaded)
         Milwaukee Model: UP1509 (Sweat)
         NIBCO Model: T413-Y-LF (Threaded)
         NIBCO Model: S413-Y-LF (Sweat)
         Conbraco Industries: Apollo Model: 163T-LF Threaded)
         Conbraco Industries: Apollo Model: 1635-LF (Sweat)
      2) Design valves in accordance with requirements of ANSI NSF-372, Senate Law S.3874.
   b. Horizontal Swing- 2 \( \frac{1}{2} \)" through 12":
      1) Check valves shall be class 125# SWP, 200# WOG, horizontal swing Check. Body, bonnet, Hanger & disc shall be of ASTM A536, Class B cast iron. Hanger Pin, disc nut, & side plug shall be ASTM B16, Brass. Seat Ring & Disc or disc Face Ring of Cast ASTM B62, Bronze. 125 Lb. flanged ends. bolted bonnet. MSS SP-71, Type 1. Basis of Design:
         Milwaukee Model: F-2974 M26
         Conbraco Industries: Apollo Model: 910F-LF
   c. Spring Loaded “Silent” Lift- 3/8" through 2":
      1) Check valves shall be 250# WOG, ASTM B584 C89833, cast bronze body with integral seat, Tail Piece, & center guided disc holder. ASTM B104, bronze Spring. Buna or PTFE disc ring. Basis of Design:
         Milwaukee Valve Figure Number UP548B (Threaded)
         Milwaukee Valve Figure Number UP1548T (Sweat)
         NIBCO Model: T480-Y-LF (Threaded)
         Conbraco Industries: Apollo Model 61F-500 (Threaded)
         Conbraco Industries: Apollo Model 61F-600 (Sweat)
         NIBCO Model: S480-Y-LF (Sweat)
         Other manufacturers: Hammond, Lunkenhimer
      2) Design valves in accordance with requirements of ANSI NSF-372, Senate Law S.3874.
3. Ball Valves:
   a. ¼" through 2":
      1) Ball valves shall be 600 WOG, ASTM B584 C89833, cast bronze two piece adapter loaded single reduced bore with chrome plated solid ASTM B16, brass tunnel drilled ball, blow-out proof brass stem, RPTFE 15% glass filled seats & thrust washer, PTFE packing, hexagonal threaded packing nut of ASTM B16, brass, Lever handle of Zinc plated steel with vinyl handle grip, MSS SP-110. Fed. Spec. WW-V-35C II, BZ, 3. Basis of Design:
         Milwaukee Model: UPBA100 (Threaded)
         Milwaukee Model: UPBA150 (Sweat)
         NIBCO T/S 685-80-LF
         Conbraco Industries: Apollo Model – 70 LF 100 (Threaded)
         Conbraco Industries: Apollo Model – 70 LF 200 (Sweat)
         Other manufacturers: Worcester, Hill McCena
      2) Design valves in accordance with requirements of ANSI NSF-372, Senate Law S.3874
   b. 3 Piece- ¼" through 3":
      1) Ball valves shall be 600# WOG, ASTM B584 C899833, cast bronze three piece, exposed bolt design, full bore, chrome plated solid ASTM B16, brass tunnel drilled ball, blow-out proof brass stem, one piece RPTFE 15% glass filled seat and body seal, 25% glass filled RPTFE thrust washer, PTFE packing, hexagonal threaded packing nut of ASTM B16, brass, Grade 8 Zinc plated steel body bolts & nuts, Lever handle of Zinc plated steel with vinyl handle grip, MSS SP-110. Fed. Spec. WW-V-35C II, BZ, 1. Basis of Design:
         Milwaukee Model: UPBA-300-A (Threaded)
         Milwaukee Model: UPBA-350-A (Sweat)
         NIBCO Model: T595-Y-LF (Threaded)
         NIBCO Model: S595-Y-LF (Sweat)
         Conbraco Industries: Apollo Model – 82 LF 100 (Threaded)
         Conbraco Industries: Apollo Model – 82 LF 200 (Sweat)
         Other manufacturers: Worcester, Hill, McCena
      2) Design valves in accordance with requirements of ANSI NSF-372, Senate Law S.3874.

4. Butterfly Valves:
   a. 3" through 48":
      1) Materials & Construction:
         a) Butterfly valves shall be, Cast Iron ASTM A126, Class B Lug Style Body with through tapped lugs. Valves shall be suitable for “Dead End Service”. Elastomer seat will be
made of EPDM, ASTM D2000, suitable for continuous operation from 30°F through +250°F, ASTM B148, Alloy 954 Aluminum Bronze or Nyon-11 coated Disc with a Broached Stem to Disc Drive Connection. (14" & larger valves to have a plug & pin stem to disc connection)

Upper & Lower Blowout proof stems of ASTM A582, Type 416 Stainless Steel. Buna N “O” Ring stem and Dirt seals, 2"+ extended neck to accommodate insulation. Valves to be “Bubble Tight” up to the maximum rated working pressure in either direction. Valves to be factory tested for “Bubble Tight” shut off in accordance with ANSI Class 6. Zero leakage preferred.

2) Maximum Rated Working Pressure:
   a) For 3" through 12" valves is 200 PSIG
   b) For 14" through 48" valves is 150 PSIG

3) Actuator / Operator:
   a) For all valves 3" through 6" use a 10 position Lever handle with locking Trigger.
   b) For all valves 8" through 48" use an Enclosed Manual Self-Locking Worm Gear Operator with Handwheel and Position Indicator. Both types of operators are to be equipped with Travel Stops. Basis of Design:

Bray Series: 31 or 31H - 119
Conbraco Industries: Apollo Model – LD 141.
Milwaukee Model: ML-233-E 3" through 5"
Milwaukee Model: ML-333-E 6" through 24"
Milwaukee Model: ML-333-E 30 through 48"
NIBCO Model: LD20003 3" through 5"
NIBCO Model: LD20005 6" through 24"
NIBCO Model: LD10005 30" through 48"

b. 2-1/2" – 6, 300psi maximum pressure rating with copper tubing sized grooved ends. Cast brass body to UNSC87850. (Alloy code shall be cast or stamped into the valve body.) Aluminum bronze disc to UNS C95500, with pressure responsive elastomer seat. Stem shall be offset from the disc centerline to provide complete 360 – degree circumferential seating. Bubble tight, dead-end or bi-directional service, with memory stops for throttling, metering or balancing service. Valve may be automated with electric, pneumatic, or hydraulic operators. Certified to the low lead requirements of NSF-372 Victaulic Series 608N.

c. Design valves in accordance with requirements of ANSI NSF 372, Senate Law S. 3874.
5. Hose End Drain Valves ½" and ¾":
   a. Hose end drain valves shall be class 600# WOG, ASTM B584, cast bronze two piece adapter loaded single reduced bore with chrome plated solid ASTM B16, brass tunnel drilled ball, blow-out proof brass stem, RPTFE 15% glass filled seats & 25% glass filled thrust washer, PTFE packing, hexagonal threaded packing nut of ASTM B16, brass, Lever handle of Zinc plated steel with vinyl handle grip, ASTM B16, brass tail piece with standard hose end threads, brass bead chain and Zinc die cast cap, MSS SP-110, Fed. Spec. WW-V-35C II, BZ, 3. Basis of Design:

Conbraco Industries: Apollo Model – 70 HCLF
Milwaukee Model: UPBA-100-H (Threaded)
Milwaukee Model: UPBA-150-H (Sweat)
NIBCO Model: T585-70-HC (Threaded)
NIBCO Model: S585-70-HC (Sweat)

PART 3 EXECUTION

3.1 EXAMINATION
   A. Examine piping system for compliance with requirements for installation tolerances and other conditions affecting performance of valves. Do not proceed with installation until unsatisfactory conditions have been corrected.
   B. Examine valve interior for cleanliness, freedom from foreign matter, and corrosion. Remove special packing materials, such as blocks, used to prevent disc movement during shipping and handling.
   C. Operate valves from fully open to fully closed positions. Examine guides and seats made accessible by such operation.
   D. Examine threads on valve and mating pipe for form and cleanliness.
   E. Examine mating flange faces for conditions that might cause leakage. Check bolting for proper size, length, and material. Check gasket material for proper size, material composition suitable for service, and freedom from defects and damage.
   F. Do not attempt to repair defective valves; replace with new valves.

3.2 INSTALLATION OF VALVES
   A. Valves shall be placed in such manner as to be easily accessible for smooth and easy handwheel operation and packing maintenance.
   B. Install valves in piping where shown and where listed herein:

1. To balance flows in water piping systems.
2. To isolate all items of equipment.
3. To isolate branch lines and risers at mains.
4. To drain low points in piping systems.
5. To drain pipe risers.
6. To drain equipment.
C. Where piping or equipment may be subsequently removed, provide valves with bodies having integral flanges or full lugs drilled and tapped to hold valve in place so that downstream piping or equipment can be disconnected and replaced with blank-off plate while valve is still in service.

D. Valves for equipment and controls shall be installed full size of pipe before reducing size to make equipment connection.

E. Where there is not interference, gate and globe shut-off valves shall be installed with handwheel up on horizontal runs of pipe to prevent accumulation of foreign matter in working parts of valves. In no case shall the stem be installed below the pipe centerline.

F. Butterfly valves shall be installed with handle position in the horizontal position: i.e., butterfly pivot point parallel with the floor.

G. Install valves with unions or flanges at each piece of equipment arranged to allow servicing, maintenance, and equipment removal without system shutdown.

H. Install valves in a position to allow full handle movement.

I. Installation of Check Valves: Install for proper direction of flow as follows:
   1. Swing Check Valves: Horizontal position with hinge pin level.
   2. Lift Check Valve: With stem upright and plumb.
   3. Install check valves on each pump discharge and elsewhere as required to control flow direction.

J. Install drain valves at low points in mains, risers, branch lines, and everywhere else required to permit drainage of the entire system.

K. Provide access where valves and fittings are not accessible.

L. Install lug and butterfly valves adjacent to equipment when functioning to isolate equipment.

3.3 INSTALLATION OF THREADED CONNECTIONS

A. Note the internal length of threads in valve ends and proximity of valve internal seat or wall to determine how far pipe should be threaded into valve.

B. Align threads at point of assembly.

C. Apply appropriate tape or thread compound to the external pipe threads, except where dry seal threading is specified.

D. Assemble joint, wrench tight. Wrench on valve shall be on the valve end into which the pipe is being threaded.

3.4 INSTALLATION OF FLANGED CONNECTIONS

A. Align flange surfaces parallel.

B. Assemble joints by sequencing bolt tightening to make initial contact of flanges and gaskets as flat and parallel as possible. Use suitable lubricants on bolt threads. Tighten
bolts gradually and uniformly with a torque wrench.

C. For dead-end service, butterfly valves require flanges both upstream and downstream for proper shutoff and retention.

3.5 INSTALLATION OF VALVING SPECIALTIES SPECIFIC TO WATER SYSTEMS

A. Install pressure-regulating and reducing valves with inlet and outlet shutoff valves and balance valve bypass. Install pressure gage on valve outlet and install valved bypass where indicated. Install unions at inlet and outlet connections.

B. Adjusting

1. Adjust operation and correct deficiencies discovered during commissioning.

   a. Electrical Connections: Power wiring and disconnect switches are specified in Division 16.

   b. Grounding & Bonding for Electrical Systems: Connect unit components to ground according to the National Electrical Code and Specification Section “Grounding.”

3.6 ADJUSTING VALVES

A. VALVES: Adjust or replace packing after piping systems have been tested and put into service, but before final adjusting and balancing. Replace valves if leak persists.

END OF SECTION
SECTION 15145
PLUMBING PIPING SYSTEMS CLEANING AND TREATMENT

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. Section includes:
   1. Potable Water Systems
B. Related Sections: The following Sections contain requirements that relate to this Section:
   1. Division 15 Section: “Common Work Results for Plumbing.”
   2. Division 15 Section: “Plumbing Insulation”: Product requirements for piping insulation for placement by this section.

1.3 DEFINITIONS
A. Point of Delivery is the outlet of the service meter assembly, or the outlet of the service regular (service shutoff valve when no meter is provided).
B. Domestic Water Systems: A system conveying domestic potable or non-potable water, such as Cold Water, Hot Water, Hot Water circulating, etc.

1.4 SUBMITTALS
A. General: Submit each item in this Section according to the Conditions of the Contract and Division 1 Specification Section: “Submitals”.
B. Product data for each type of product specified. Include manufacturer's technical product data, rated capacities of selected equipment clearly indicated, water-pressure drops, weights (shipping, installed, and operating), furnished specialties, accessories, and installation and startup instructions. Provide a list of all chemicals and quantities, including material safety data sheets.
C. Shop drawings from manufacturer detailing equipment assemblies and indicating dimensions, weights, loadings, required clearances, method of field assembly, components, and location and size of each field connection.
D. System diagram showing all piping, valving, tubing, treatment equipment, etc.
E. Wiring diagrams detailing power and control wiring and differentiating clearly between manufacturer-installed wiring and field-installed wiring.
F. Field test reports indicating and interpreting test results relative to compliance with specified requirements.

PLUMBING PIPING SYSTEMS CLEANING AND TREATMENT
15145-1
G. Maintenance data for chemical water treatment to include in the operation and maintenance manual specified in Division 1. Include detailed manufacturer's instructions and parts list for each item of equipment, control, and accessory. Include troubleshooting maintenance guide.

1.5 QUALITY ASSURANCE

A. Qualifications: A recognized chemical water treatment supplier. The supplier shall employ an experienced consultant, available at reasonable times during the course of the Work to consult with Contractor, Architect, and Owner about water treatment.

1. Provide a list of at least five (5) projects of similar size and type, which have been in operation for at least 5 years.
2. Supplier shall provide 24-hour emergency service, and shall be capable of being on-site within 4 hours notice.

B. Chemical Standards: Meet state and local pollution-control regulations.


D. Listing and Labeling: Provide products specified in this Section that are listed and labeled.

1. The Terms "Listed" and "Labeled": As defined in the National Electrical Code, Article 100.
2. Listing and Labeling Agency Qualifications: A "Nationally Recognized Testing Laboratory" (NRTL) as defined in OSHA Regulation 1910.7.

E. Provide cleaning of the piping systems and submit a certificate of compliance with the specification.

1.6 MAINTENANCE

A. Extra Materials

1. Furnish the following extra materials, matching products installed, packaged with protective covering for storage and with identification labels clearly describing contents.

PART 2 PRODUCTS

2.1 MANUFACTURERS

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

1. Chemical Water Treatment Products:
   a. Arc Water Treatment Co.
   b. Aqua-Chem, Inc.
   c. Ecolab.
   d. Nalco Chemical Co.
PART 3 EXECUTION

3.1 INSTALLATION

A. Install treatment equipment level and plumb, according to manufacturer’s written instructions, rough-in drawings, the original design, and referenced standards.

B. Connections

1. Piping installation requirements are specified in other Division 15 Sections. The Drawings indicate the general arrangement of piping, fittings, and specialties. The following are specific connection requirements:
   a. Install piping adjacent to equipment to allow servicing and maintenance.
   b. Piping: Conform to applicable requirements of Division 15 Section: "Pipes and Tubes for Plumbing Piping and Equipment."

2. Electrical: Conform to applicable requirements of Division 16 Sections for connecting electrical equipment.
   a. Install electrical devices furnished with boiler but not specified to be factory mounted.

3.2 FIELD QUALITY CONTROL

A. Testing Agency: Provide the services of a qualified independent testing agency to perform field quality control testing.

3.3 STERILIZATION OF DOMESTIC WATER SYSTEMS

A. Sterilization:

1. After final testing for leaks, all new potable water lines shall be thoroughly flushed by plumbing contractor to remove foreign material. Before placing the systems in service, contractor shall engage a qualified service organization, to sterilize the new water lines in accordance with the following procedure:
   a. Through a ¾” hose connection in the main entering the building pump in sufficient sodium hypochlorite to produce a free available chlorine residual of not less than 200 ppm. Plumbing contractor shall provide plumbing connections and power for pumping chlorine into the system.

2. Proceed upstream from the point of chlorine application opening all faucets and taps until chlorine is detected. Close faucets and taps when chlorine is evident.

3. When chlorinated water has been brought to every faucet and tap with a minimum concentration of 200 ppm chlorine, retain this water in the system for three (3) hours. CAUTION: Over-concentration of chlorine and more than three (3) hours of retention may result in damage to piping system. It is not necessary to retain chlorine in any system for twenty-four hours to achieve sterilization. AWWA states that 200 ppm chlorine for three hours is sufficient.

4. At the end of the retention period, no less than 100 ppm of chlorine shall be present at the extreme end of the system.

5. Proceed to open all faucets and taps and thoroughly flush all new lines until the chlorine residual in the water is less than 1.0 ppm.

6. Obtain representative water sample from the system for analysis by a recognized bacteriological laboratory.

7. If the sample tested for coliform organism is negative, a letter and laboratory report shall be submitted by the service organization to the contractor, certifying successful completion of the sterilization.

8. If any samples tested indicate the presence of coliform organisms, the entire
sterilization procedure shall be repeated.

3.4 SIX MONTH FOLLOW-UP SERVICE

A. The contractor shall return to the project site under warranty phase in six months to flush / blow down all: Domestic Water strainers.

END OF SECTION