

Project Manual

(Formal Contract for Construction)

PROJECT NO. SU-081512

PROJECT TITLE: Residence Halls LTHW Piping
Replacement C&D wing

DATE: August 15, 2012

Purchase College
State University of New York

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SUNY PROJECT NO. SU-081512

PROJECT TITLE: Residence Halls LTHW Piping
Replacement C&D Wing

AGENCY NUMBER: 28260

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http://www.suny.edu/sunypp/documents.cfm?doc_id=283

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State University of New York Sub-Contracting Information

Form AC 2947, NY State Labor Law, Section 220-a, Prime Contractor's Certification

Form AC 2948, NY State Labor Law, Section 220-a, Subcontractor's Certification

Form AC 2958, NY State Labor Law, Section 220-a, Sub-subcontractor's Certification

<http://www.suny.edu/sunypp/docs/516.doc>

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STATE UNIVERSITY OF NEW YORK

NOTICE TO BIDDERS

NOTICE TO BIDDERS

Purchase College, State University of New York will receive sealed Proposals for **Project SU-081512**, Titled **"Residence Halls LTHW Piping Replacement C&D Wing"** until **1:00 P.M.** Local Time on **September 06, 2012**, at the Purchasing & Accounts Payable Office, Administration Building, Purchase College, State University of New York, 735 Anderson Hill Road, Purchase, New York 10577-1402, when they will be opened publicly and read. Proposals may be hand delivered or mailed to the above location and must be received by such time.

A non-mandatory Pre-Bid Conference and site walk-through for prospective Bidders will be held at the Facilities Management Conference Room, Purchase College, State University of New York, 735 Anderson Hill Road, Purchase, New York 10577-1402 at 10:00AM on August 29th, 2012. Please note: This will be the only guided walk-through of the subject project facilities. (914-251-6920).

For directions to Purchase College, see <http://www.purchase.edu/AboutPurchase/VisitorsGuide/Directions/>
For a campus map, see <http://www.purchase.edu/sharedmedia/admissions/campus%20map.pdf>

Purchase College is dedicated to environmentally sustainable development. In an effort to conserve resources and reduce waste, the Bidding and Contract Documents will only be available electronically in PDF format for viewing and downloading at the following website: <http://www.purchase.edu/purchasemeansbusiness>

There will be an Open Question and Answer Period from August 20th, 2012 through August 28th, 2012. During this time any questions must be submitted in writing (no telephone calls) to the following email address, LTHWPIPING@purchase.edu. The email should reference the project in the subject line and include the prospective bidder's contact information and email address. A response to all questions submitted within the Open Question and Answer Period and any required Addendum will be posted no later than August 29th, 2012 at the following website: www.purchase.edu/purchasemeansbusiness

Bids must be submitted in duplicate in accordance with the instructions contained in the Information for Bidders.

A Bid Security will be required for each bid in an amount not less than five (5) percent of the Total Bid.

It is the policy of the State of New York and the State University of New York to encourage minority and women-owned business enterprise participation in its projects by contractors, subcontractors and suppliers, and all bidders are expected to cooperate in implementing this policy. The minority (MBE) and women (WBE) owned business contractor/subcontractor participation goals for this construction procurement are 20% for MBEs and 10% for WBEs.

The rates of wages and supplements determined by the Industrial Commissioner of the State of New York as prevailing in the locality of the site at which the work will be performed can be found at <http://wpp.labor.state.ny.us/wpp/viewOriginalWageSchedule.do?projectId=781760>. The Prevailing Rate Case (PRC) Number assigned to this project is 2012007170.

The State University of New York reserves the right to reject any or all bids.

Pursuant to State Finance Law §§139-j and 139-k, this solicitation includes and imposes certain restrictions on communications between Purchase College and an Offerer/Bidder during the procurement process. An Offerer/Bidder is restricted from making contacts from the earliest notice of intent to solicit proposals through final award and approval of the Procurement Contract by Purchase College/State University of New York and, if applicable, the Office of the State Comptroller ("restricted period") to other than designated staff unless it is a contact that is included among certain statutory exceptions set forth in State Finance Law §139-j(3)(a). Pursuant to the statute, Purchase College employees are also required to obtain certain information when contacted during the restricted period and maintain a record of the communication, and make a determination of a knowing and willful contact. Contact made to other than designated staff regarding this procurement may disqualify the vendor from the current award and affect future procurements with government entities in the State of New York.

Designated Contacts:

For Procurement Policy and Procedural Questions, contact:

Nikolaus D. Lentner

Director of Purchasing & Accounts Payable

Purchase College

State University of New York

735 Anderson Hill Road

Purchase, NY 10577-1402

Tel: (914) 251-6070

Fax: (914) 251-6075

Email: LTHWPIPING@purchase.edu

For Technical Questions, contact:

Steve Dorso

Associate Director of Facilities Management

Purchase College

State University of New York

735 Anderson Hill Road

Purchase, NY 10577-1402

Tel: (914) 251-6918

Fax: (914) 251-6930

Email: LTHWPIPING@purchase.edu

STATE UNIVERSITY OF NEW YORK

INFORMATION FOR BIDDERS

Section 1 Definitions

All definitions set forth in the Agreement are applicable to the Notice to Bidders, Information for Bidders and the Proposal, all of which documents are hereinafter referred to as the Bidding Documents.

Section 2 Issuance of Bidding and Contract Documents

Purchase College is dedicated to environmentally sustainable development. In an effort to conserve resources and reduce waste, the Bidding and Contract Documents will only be available electronically in PDF format for viewing and downloading at the following website: <http://www.purchase.edu/purchasemeansbusiness>

Section 3 Proposals

- (1) Sealed Proposals must be submitted in duplicate on the forms provided by the University. Facsimile copies of the Proposal will not be accepted by the University. They shall be addressed to the University in a sealed envelope, marked with the name and address of the bidder, the title of the Project and the Project number to:

Nikolaus D. Lentner
Director of Purchasing & Accounts Payable
Purchase College
State University of New York
735 Anderson Hill Road
Purchase, NY 10577-1402

Proposals must be received in the Purchasing & Accounts Payable Office by the due date and time. Bidders mailing their Proposals must allow sufficient time to ensure receipt of their Proposals by the date and time specified. Bidders are cautioned that, although using a trackable mailing/courier/messenger service, bids must be received in the Purchasing Office by the due date and time. Although bids may be signed for by Purchase College Mail Operations personnel prior to bid opening time on the day of the bid, this does not guarantee that the Purchasing & Accounts Payable Office will receive the bid by bid opening time. No bid will be considered that is not physically received in the Purchase College Purchasing & Accounts Payable Office by the bid opening time.

The bidder must submit with its bid proposal a separate sealed list that names each subcontractor that the bidder will use to perform work on the contract and the agreed-upon amount to be paid for the different trades.

- (2) All blank spaces in the Proposal must be filled in and, except as otherwise expressly provided in the Bidding Documents; no change is to be made in the phraseology of the Proposal or in the items mentioned therein.
- (3) Proposals that are illegible or that contain omissions, alterations, additions or items not called for in the Bidding Documents may be rejected as informal. In the event any bidder modifies limits or restricts all or any part of its Proposal in a manner other than that expressly provided for in the Bidding Documents, its Proposal may be informal.
- (4) Any Proposal may be considered informal which does not contain prices in words and figures in all of the spaces provided or which is not accompanied by a bid security in proper form. In case any price shown in words and its equivalent shown in figures do not agree, the written words shall be binding upon the bidder. In case of a discrepancy in the prices contained in the Proposal forms submitted in duplicate by the bidder, the Proposal form which contains the lower bid shall be deemed the bid of the bidder; provided, however, the University at its election may consider the Proposal of such bidder informal.
- (5) If the Proposal is made by a corporation, the names and places of residence of the president, secretary and treasurer shall be given. If by a partnership, the names and places of residence of the partners shall be given. If by a joint venture, the names and addresses of the members of the joint venture shall be given. If by an individual, the name and place of residence shall be given.
- (6) No Proposal will be considered which has not been deposited with the University at the location designated in and prior to the time of opening designated in the Notice to Bidders or as extended by Addendum.
- (7) Bids may be modified, withdrawn or canceled only by written, facsimile or telegraphic notice received by the University prior to the time of opening of bids designated in the Bidding and Contract Documents. A written,

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facsimile or telegraphic notice of modification, withdrawal or cancellation shall be marked by the bidder with the name and address of the bidder, the title of the Project and the Project number, and, upon receipt by the University, shall be sealed in an envelope by a duly authorized employee of the University, who shall sign and note thereon the date and time of receipt and shall thereupon attach said written, facsimile or telegraphic notice of modification, withdrawal or cancellation to the envelope submitted by the bidder pursuant to subdivision (1) of this section.

- (8) Permission will not be given to modify, explain, withdraw or cancel any Proposal or part thereof after the time designated in the Bidding and Contract Documents for the opening of bids, unless such modification, explanation, withdrawal or cancellation is permitted by law and the University is of the opinion that it is in the public interest to permit the same.

Section 4 Examination of Bidding and Contract Documents

- (1) Prospective bidders shall examine the Bidding and Contract Documents carefully and, before bidding, shall make written request to the University for an interpretation or correction of any ambiguity, inconsistency or error therein which should be discovered by a reasonably prudent bidder. Such interpretation or correction as well as any additional Contract provision the University shall decide to include will be issued in writing by the University as an Addendum, which will be posted to the University's website (listed below). Such Addendum will become a part of the Bidding and Contract Documents and will be binding on all bidders whether or not the bidder receives or acknowledges the actual notice of it. The requirements contained in all Bidding and Contract Documents shall apply to all Addenda.
- (2) Only the written interpretation or correction so given by Addendum shall be binding. Prospective bidders are warned that no trustee, officer, agent or employee of the University or the Consultant is authorized to explain or interpret the Bidding and Contract Documents by any other method, and any such explanation or interpretation, if given, must not be relied upon.
- (3) Requests for interpretations or clarifications shall be forwarded via e-mail to LTHWPIPING@purchase.edu on or before August 28, 2012. Answers to questions and any Addenda will be issued no later than August 29, 2012, and can be accessed at <http://www.purchase.edu/purchasemeansbusiness>

Section 5 Computation of Bid

- (1) In computing their bids, bidders are not to include the sales and compensating use taxes of the State of New York or any city and county in the State of New York for any supplies or materials which are incorporated into the completed Project as the University is exempt from such taxes.
- (2) Any unit prices listed in the Proposal by the University are based upon the Consultant's appraisal of a fair cost for the work involved. Such listed prices will be binding upon both the bidder and the University unless the bidder wishes to change any of such unit prices by crossing out the listed unit price and inserting a revised unit price. Such revised unit price shall not be binding upon the University unless it accepts the same, in writing, before it issues a Contract. In the event the Proposal contains blank spaces for unit prices or the Contractor revises any stated unit price, the amount of such unit prices for additions shall not vary by more than 15 percent from the prices inserted by the bidder for deductions, and, if the variance of such prices exceeds 15 percent, the University may adjust the deduction price inserted by the bidder so that it is only 15 percent lower than the addition price inserted by the bidder. In addition, the University may adjust any unit price filled in by a bidder to an amount agreeable to both the bidder and the University or it may reject any unit prices.
- (3) Alternatives, if any, listed in the Proposal and described in Section A of the Technical Specifications shall be accepted in the order indicated and will be used in combination with the Total Bid to determine the low bidder. Unit prices will not be used to determine the low bidder.

Section 6 Payment of Security

- (1) Each Proposal must be accompanied by the required amount of the bid security in the form of a bank draft or certified check, payable at sight to the University and drawn on a bank authorized to do business in the United States, or by a Bid Bond, on the form provided, duly executed by the bidder as principal and having as surety thereon a surety company or companies, approved by the University, authorized to do business in the State of New York as a

STATE UNIVERSITY OF NEW YORK INFORMATION FOR BIDDERS

surety. Attorneys-in-fact who execute a Bid Bond on behalf of a surety must affix thereto a certified and effectively dated copy of their power of appointment.

- (2) The University will return, without interest, bid securities in accordance with the following procedure:
 - a. Bid securities in the form of bank drafts or certified checks, to all bidders except the apparent three (3) lowest bidders within two (2) working days after the opening of bids.
 - b. To any bidder submitting a Bid Bond, meeting the requirements of paragraph (1) hereof, after the opening of bids, as a substitute for a bank draft or certified check within two (2) working days after the University's approval of such Bid Bond.
 - c. To the apparent three (3) lowest bidders, unless their bid security was previously returned, within two (2) working days after delivery to the University by the successful bidder of the executed Agreement and required Bonds, or within two (2) working days of the University's rejection of all bids or within two (2) working days after the expiration of forty-five (45) calendar days after the bid opening, whichever event shall occur first.
 - d. Bid Bonds, due to their nature, will not be returned.
- (3) The University reserves the right to deposit bid security drafts or checks pending final disposal of them.

Section 7 Qualifications of Bidders

- (1) All prospective bidders are hereby notified that, on request of the University, they must be able to prove to the satisfaction of the University that they have the skill and experience, as well as the necessary facilities, ample financial resources, organization and general reliability to do the work to be performed under the provisions of the Contract in a satisfactory manner and within the time specified.
- (2) Each bidder must be prepared to show to the satisfaction of the University that it has working capital available for the Project upon which it is bidding in an amount equal to 15 percent of the first \$100,000 of the amount of its Total Bid plus 10 percent of the next \$900,000 plus 5 percent of the remainder of its Total Bid. Working capital is defined as the excess of current assets over current liabilities. The University defines current assets as assets which can be reasonably expected to be converted into cash within a year, and current liabilities as debts which will have to be paid within a year.
- (3) A bidder must also be prepared to prove, to the satisfaction of the University, that it has successfully completed a contract of similar work in an amount of not less than 50 percent of the amount of its Total Bid.

Section 8 Submission of Post-Bid Information

- (1) Within forty-eight (48) hours after the opening of bids, each of the apparent three lowest bidders, unless otherwise directed by the University or otherwise provided in the Bidding and Contract Documents, shall submit to both the University and the Consultant:
 - a. A New York State Uniform Contracting Questionnaire with all requested information furnished.
 - b. A breakdown of the amount of the bidder's Proposal. Such breakdown shall be prepared in accordance with industry standards. No bidder shall be barred from revising, in the Contract breakdown required under the provisions of Section 4.08 of the Agreement, the various amounts listed in the bid breakdown required under the provisions of this Section. The amount set forth in said bid breakdown will not be considered as fixing the basis for additions to or deductions from the Contract consideration.
- (2) Notwithstanding the foregoing, any bidder or any of the proposed subcontractors referred to in paragraph (1) b, who, within the past year immediately preceding the bidding date, had submitted to the State or the University a Contracting Questionnaire, need not complete a new Questionnaire; provided, however, that they execute an Affidavit of No Change, and deliver the same together with the Questionnaire previously submitted.
- (3) Within 10 calendar days after the bid opening date each of the apparent three lowest bidders must complete the

STATE UNIVERSITY OF NEW YORK INFORMATION FOR BIDDERS

CONTRACTOR'S EEO POLICY STATEMENT and SUBCONTRACTING INFORMATION forms contained in the Project Manual and forward copies of the same to the University and the Consultant. This requirement applies only to Contracts in excess of \$100,000, and contracts which contain subcontracts that are in excess of \$25,000, regardless of their total value.

Contractor compliance with the Non-Discrimination Requirements indicated on Exhibit A of the Agreement and the University's Affirmative Action Policy as indicated on Exhibit A-1, of the Agreement is a precondition to entering into a valid and binding Contract with the University.

Successful contractors with contracts meeting the above criteria will be required to submit to the University a work force utilization report, in a form and manner required by the University. The form, contained in Project Manual, will indicate the work force actually utilized on the Contract, broken down by specified ethnic background, gender and Federal occupational categories or other appropriate categories specified by the University.

- (4) The above information and such other information as the University or the Consultant may request or obtain will be used by the University in determining the reliability and responsibility of the bidder. Each bidder must comply promptly with all requests by the University and the Consultant for information and must actively cooperate with the University and the Consultant in their efforts to determine the qualifications of the bidder. All information required to be furnished to the University under this Section shall be sent to the State University of New York campus where the work is to be performed.

Section 9 Award of Contract

- (1) The award of the Contract shall be made to the bidder submitting the lowest bid who, in the opinion of the University, is qualified to perform the work involved and is responsible and reliable. The University shall determine the lowest bid by adding to or deducting from the Total Bid of the bidders the additive or deductive alternates, if any, the University elects to accept after the opening of the Proposals. Alternatives will be accepted in the order they are set forth in the Proposal. The unit prices set forth in the Proposal for additions to or deductions from the work shall not be considered in determining the lowest bid.
- (2) Subject to the rights hereinafter reserved, the work will be awarded within forty-five (45) calendar days after the opening of bids to a single responsible bidder or any combination of bidders whose Proposal conforms to the requirements of the Bidding Documents.
- (3) The right is reserved, if, in the University's judgment, the public interest will be promoted thereby, to reject any or all Proposals, to waive any informality in any Proposal received or to afford any bidder an opportunity to remedy any deficiency resulting from a minor informality or irregularity. Without limiting the generality of the foregoing:
 - a. A Proposal may be rejected if the bidder fails to furnish the required bid security or to submit the data required with or after its Proposal.
 - b. A Proposal may be rejected if the bidder cannot show to the satisfaction of the University: (i) that it has the necessary capital, skill and experience; or (ii) that it owns, controls or can procure the necessary plant and equipment to commence the work at the time prescribed in the Contract and thereafter to prosecute and complete the work at the rate, or within the time specified; or (iii) that it is not already obligated by the performance of so much other work as is likely to delay the commencement, prosecution or completion of the work contemplated by the Contract.
 - c. A Proposal will be rejected if it does not provide for the completion of the work by the date of completion specified in the Proposal.
- (4) The University also expressly reserves the right to reject any Proposal if, in its opinion, considering the work to be performed, the facts, as to the bidder's business or technical organization, plant, financial and other sources of business experience compared with the work bid upon, justify rejection.
- (5) The award of the Contract shall not be construed as a guarantee by the University that the plant, equipment and the general scheme of operations and other data submitted by the bidder with or after its Proposal is either adequate or suitable for the satisfactory performance of the work.

STATE UNIVERSITY OF NEW YORK INFORMATION FOR BIDDERS

Section 10 Required Bonds

- (1) Within ten (10) calendar days after the receipt of Notice of Award, the Contractor shall procure, execute and deliver to the Consultant and maintain, at its own cost and expense, a Performance Bond and a Labor and Material Bond, both of which Bonds shall be on the form prescribed by the University and in an amount not less than 100 percent of the total amount of the Contract awarded to the Contractor by the University. Said Bonds must be issued by a surety company approved by the University and authorized to do business in the State of New York as a surety.
- (2) Attorneys-in-fact who execute said Bonds on behalf of a surety must affix thereto a certified and effectively dated copy of their power of appointment.

Section 11 New York State Business Enterprises

- (1) It is the policy of New York State and the University to maximize opportunities for the participation of New York State Business Enterprises, including Minority and Women's Business Enterprises as bidders, subcontractors and suppliers on its procurement contracts.
- (2) Information on the availability of New York State subcontractors and suppliers is available from: Empire State Development Corporation at <http://www.empire.state.ny.us/>
- (3) A directory of Minority and Women's Business Enterprises is available from: Empire State Development Corporation, Minority and Women's Business Development Division at <http://www.empire.state.ny.us/>
- (4) The minimum MWBE goals for this project will be:
MBE = 20%
WBE = 9%

Section 12 Examination of Site

- (1) A non-mandatory pre-bid conference and project walk-through will be held on August 29th, 2012, with all contractors assembled at the **Facilities Management Conference Room, Purchase College, State University of New York, 735 Anderson Hill Road, Purchase, New York 10577-1402.**

For directions to Purchase College, see <http://www.purchase.edu/AboutPurchase/VisitorsGuide/Directions/>

For a campus map, see <http://www.purchase.edu/sharedmedia/admissions/campus%20map.pdf>

No individual or additional walk-throughs will be performed under the pre-bid time period. Failure to attend a walk-through shall not be the cause for extra payment.

NAME OF BIDDER

ADDRESS OF BIDDER

**PROPOSAL
FOR**

SUNY PROJECT NO.: SU-081512

PROJECT TITLE: Residence Halls LTHW Piping
Replacement C&D Wing

SUNY CAMPUS: Purchase College

TO THE STATE UNIVERSITY OF NEW YORK:

1. The Work Proposed Herein Will Be Completed Within 365 Calendar Days, Starting 10 Calendar Days After The Contract Approval Date. In the event the bidder fails to complete such work by said date or dates, or within the time to which such completion may have been extended in accordance with the Contract Documents, the bidder agrees to pay the University liquidated damages in an amount equal to the values indicate in the Liquidated Damages Schedule below for each calendar day of delay in completing the work.

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LIQUIDATED DAMAGES SCHEDULE

<u>Contract Amount</u>	<u>Liquidated Damages</u>
Under \$100,000	\$100/day
\$100,000-\$499,999	\$200/day
\$500,000-\$999,999	\$300/day
\$1MM-\$1,999,999	\$400/day
\$2MM-\$3,499,999	\$500/day
\$3.5MM-\$5MM	\$700/day
Over \$5MM (to be determined by the University in each instance)	\$____/day

=====

2. The bidder hereby declares that it has carefully examined all Bidding and Contract Documents and that it has personally inspected the actual location of the work, together with the local sources of supply, has satisfied itself as to all the quantities and conditions, and understands that in signing this Proposal, it waives all right to plead any misunderstanding regarding the same.
3. The bidder further understands and agrees that it is to do, perform and complete all work in accordance with the Contract Documents and to accept in full compensation therefore the amount of the Total Bid.
4. The bidder further agrees to accept the unit prices, if any, set forth in paragraph (5) hereof, except as the same may be modified pursuant to the provisions of Section 5 of the Information to Bidders, as full payment for the amount of the credit to the University for any deletions, additions, modifications or changes to the portion or portions of work covered by said unit prices.

5. a. TOTAL BID \$ _____
(in numbers)

(in words)

b. **ALTERNATIVES:** Reference Section B of the General Requirements. The bidder proposes the following additions to or deductions from the Total Bid for the alternatives listed below:

Alternate Number	Add/Deduct	Amount in Words	Amount in Figures
N/A			

c. **UNIT PRICES:** Reference Section 5, paragraph (2) of the Information to Bidders, and Schedule I, page A-29 of the Agreement.

Work or Materials Description	Amount in Words	Amount in Figures

6. **ALLOWANCES:** Reference page A-29 of the Agreement. The bidder further agrees that its Total Bid includes the following allowances:

Work or Materials Description	Amount in Words	Amount in Figures

7. By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief: (a) the prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor; (b) unless otherwise required by law, the prices have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and (c) no attempt has been made or will be made by the bidder to include any person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

A bid shall not be considered for award nor shall any award be made where (a), (b) and (c) above have not been complied with; provided, however, that if in any case the bidder cannot make the foregoing certification the bidder shall so state and shall furnish with the bid a signed statement which sets forth in detail the reasons therefore. Where (a), (b), and (c) above shall have not been complied with, the bid shall not be considered for award nor shall any award be made unless the Campus President, or designee, or Assistant Vice Chancellor for Capital Facilities, or designee, determines that such disclosure was not made for purposes of restricting competition.

The fact that a bidder (a) has published price lists, rates, or tariffs covering items being procured, (b) has informed prospective customers of proposed or pending publication of new or revised price lists for such items, or (c) has sold the same items to other customers at the same prices being bid, does not constitute, without more, a disclosure within the meaning of this Section.

8. The bidder agrees that if awarded the Contract, it will commence work within (10) calendar days after date of receipt of a fully executed Agreement and that it will fully complete the work by the date stated herein.

9. The bidder acknowledges the receipt of the following addenda, but agrees that it is bound by all addenda whether or not listed herein.

Addendum Number	Date	Addendum Number	Date
_____	____/____/____	_____	____/____/____
_____	____/____/____	_____	____/____/____
_____	____/____/____	_____	____/____/____

10. The bidder submits herewith bid security in an amount not less than five (5) percent of the Total Bid. In the event that (a) the bidder's Total Bid is the lowest one submitted and the bidder does not timely provide the Post-Bid Information required by the Information for Bidders or (b) this Proposal is accepted by the University and the bidder shall refuse or neglect, within ten (10) calendar days after date of receipt of Agreement, to execute and deliver said Agreement in the form provided herein, or to execute and deliver a Performance Bond and a Labor and Material Bond in the amounts required and in the form prescribed, the bidder shall be liable to the University, as liquidated damages, for the amount of the bid security or the difference between the Total Bid of the bidder and the Total Bid of the bidder submitting the next lowest bid, whichever sum shall be higher, otherwise the total amount of the bid security will be returned to the bidder in accordance with the provisions set forth in the Information for Bidders. The University may apply the bid security in full or partial payments, as the case may be, of said liquidated damages and in the event the bid security is less than the amount of liquidated damages to which the University is entitled, the bidder shall pay the difference, upon demand, to the University.

11. The bidder certifies that all wood products that are to be used in the performance of this Contract shall be in accordance with the Specifications and provisions of Section 167 b. of the State Finance Law which Section prohibits the purchase and use of tropical hardwoods.

Dated ____/____/____

(If corporation, affix
corporate seal)

Firm's Federal ID Number or
Social Security Number as applicable _____

Legal name of person, partnership, joint venture or corporation:

By _____
(signature)

Title _____

Email _____

ACKNOWLEDGMENT FOR THE PROPOSAL

THE LEGAL ADDRESS OF THE BIDDER

Telephone No. _____ Facsimile No. _____

If a Corporation

Name _____ Address _____

_____ PRESIDENT _____

_____ SECRETARY _____

_____ TREASURER _____

If a Partnership

Name of Partners _____ Address _____

If a Joint Venture

Name of Members _____ Address _____

If an Individual

Name of Individual _____ Address _____



STATE UNIVERSITY OF NEW YORK BID BOND

BOND NO. _____

KNOW ALL PERSONS BY THESE PRESENTS, that _____

having an office at _____

(hereinafter called the "Principal") and the _____

a corporation created and existing under the laws of the State of _____

having its principal office at _____

(hereinafter called the "Surety") are held and firmly bound unto the State University of New York (hereinafter called the "University") in the full and just sum of

_____ dollars (\$ _____)
(in words) (in figures)

good and lawful money of the United States of America, or in the full and just sum of the difference between the Total Bid of the Principal and the Total Bid of the bidder submitting the next lowest bid, whichever sum shall be higher, for the payment of which said sum of money, well and truly to be made and done, the Principal binds itself, its heirs, executors, administrators, successors and assigns and the Surety binds itself, its successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted to the "University" a Proposal for Project No. _____

Titled _____

which Proposal is incorporated herein by reference and made a part hereof as fully and to the same extent as if set forth at length herein;

NOW, THEREFORE, the condition of this obligation is such that in the event (1) the Principal's Total Bid is the lowest one submitted and the Principal timely provides the Post-Bid Information required under Section 8 of the Information for Bidders or (2) the "University" shall accept the Proposal of the Principal and the Principal shall enter into a Contract with the "University" in accordance with the terms of such Proposal and/or enter into certain prescribed subcontracts in accordance with the terms of such Proposal and give such Bond or Bonds as may be specified in the Bidding or Contract Documents, then this obligation shall be null and void, otherwise to remain in full force and effect.

The Surety, for value received, hereby stipulates and agrees that the obligation of said Surety and its Bond shall be in no way impaired or affected by any extension of the time within which the "University" may accept the Proposal of the Principal and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal has hereunto set its hand and seal and the Surety has caused this instrument to be signed by its _____ and its corporate seal to be hereunto affixed this

_____ day of _____, 19_____

Principal

By

If Corporation,
affix Corporate
Seal

Surety

By

If Corporation,
affix Corporate
Seal

ACKNOWLEDGMENTS FOR BID BOND

(Acknowledgment by Principal, unless it be a Corporation)

STATE OF NEW YORK)
) ss.:
COUNTY OF)

On this _____ day of _____, 19 _____, before me personally came _____

_____, to me known and known to me to be the person(s) described in and who executed the foregoing instrument and acknowledged that he / she executed the same.

Notary Public

(Acknowledgment by Principal, if a Corporation)

STATE OF NEW YORK)
) ss.:
COUNTY OF)

On this _____ day of _____, 19 _____, before me personally came _____

_____, to me known, who, being by me duly sworn, did

depose and say that he / she resides in _____;

that he / she is the _____

of the _____,
the corporation described in and which executed the foregoing instrument; that he / she knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation and that he / she signed their name thereto by like order.

Notary Public

(Acknowledgment by Surety Company)

STATE OF)
) ss.:
COUNTY OF)

On this _____ day of _____, 19 _____, before me personally came _____

_____, to me known, who, being by me duly sworn, did depose

and say that he / she resides in _____;

that he / she is the _____

of the _____,
the corporation described in and which executed the foregoing instrument; that he / she knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by the order of the Board of Directors of said corporation, and that he / she signed their name thereto by like order; and that the liabilities of said company do not exceed its assets as ascertained in the manner provided by the laws of the State of New York.

Notary Public

State University of New York **AGREEMENT**

Contract No. _____

This Agreement made as of the _____ day of _____, 20____, for Contract Number _____ by and between STATE UNIVERSITY OF NEW YORK, a corporation organized and existing under the laws of the State of New York, with its principal office located at State University Plaza, Albany, New York 12246, on behalf of Purchase College, State University of New York located at 735 Anderson Hill Road, Purchase, New York 10577-1402 hereinafter referred to as "University" and _____ having its principal office located at _____, hereinafter referred to as "Contractor".

Federal ID or
Social Security No. _____

The University and the Contractor agree as follows:

1. The Contractor shall perform all work and duties required for the construction of Project Number **SU-081512**, titled **Residence Halls LTHW Piping Replacement C&D Wing**, as contained in the Contract Documents. Subject to authorized adjustments the work and duties contained in the same shall be completed within 365 calendar days starting 10 calendar days after the approval date. The Contractor agrees to pay the University liquidated damages in accordance with paragraph 1 of the Proposal for each calendar day of delay in completing the work.
2. The University shall pay and the Contractor shall accept for the performance of work of the above referenced Project, the total contract compensation of \$ _____, (in figures),
_____ (in word)s.

ARTICLE I

General Provisions

Section 1.01 Definitions

Where the following words and expressions are used in the Contract Documents it is understood that they have the meaning set forth as follows:

CONSULTANT	The Architect, Engineer, Landscape Architect, or Surveyor named in the Notice to Bidders or such other person or firm designated by the University to provide general administration of the Contract and inspection of the work.
BIDDING DOCUMENTS	The Notice to Bidders, Information for Bidders and Proposals
BONDS	Performance Bond and Labor and Material Bond
CONTRACT OR CONTRACT DOCUMENTS	The Agreement, Project Manual, Proposal, Bonds, Specifications, Contract Drawings, Addenda issued prior to the opening of bids and Change Orders issued after the award of the Contract.
UNIVERSITY	State University of New York
NOTICE OF AWARD	Letter of Intent
PROJECT	The facility or facilities to be constructed including all usual, appropriate and necessary attendant work shown on, described in or mentioned in the Contract.
SITE	The area within the Contract limit lines, as shown on the Drawings, and all other areas upon which the Contractor is to perform work.
WORK	The using, performing, installing, furnishing and supplying of all materials, equipment, labor and incidentals necessary or proper for or incidental to the successful completion of the Project and

the carrying out of all duties and obligations imposed upon the Contractor by the Contract.

NOT IN CONTRACT, "N.I.C."

Indicates equipment furnished by the Owner and installed under another construction contract or by another contractor, or operations at the site not included as part of this Contract.

PROVIDE, PROVIDED

Mean that the Contractor shall furnish and install all materials and labor for the item so specified.

Section 1.02 Captions

The titles or captions of Articles and Sections of the Contract are intended for convenience and reference purposes only and in no way define, limit or describe the scope or intent thereof or of the Contract or in any way affect the Contract.

Section 1.03 Nomenclature

Materials, equipment or other work described in words which have a well-known, technical or trade meaning shall be interpreted as having such meaning in connection with the Contract.

Section 1.04 Contract Documents

- (1) This agreement
- (2) Exhibit A and A-1
- (3) Here the list of the remaining contract exhibits and appendix should be cited.

The Contract, together with all exhibits thereto, constitutes the entire agreement between the parties hereto and no statement, promise, condition, understanding, inducement or representation, oral or written, expressed or implied, which is not contained herein shall be binding or valid and the Contract shall not be changed, modified, or altered in any manner except by an instrument in writing executed by the parties hereto.

Section 1.05 Successors and Assigns

To the extent allowed by the terms of "Exhibit A", the Contract shall bind the successors, assigns and representatives of the parties hereto. The University reserves the right to have the State University Construction Fund (Fund) act on its behalf at any time or duration of this Agreement. Such designation of the Fund to act on the behalf of the University shall be in writing and addressed to the Contractor and signed by the University.

Section 1.06 Accuracy and Completeness of Contract Documents

- (1) The Contract Documents are complementary and what is called for by any one shall be as binding as if called for by all. The intention of the Documents is to include all materials, plant, equipment, tools, skill and labor of every kind necessary for the proper execution of the work and also those things which may be reasonably inferable from the Contract Documents as being necessary to produce the intended results.
- (2) The Contract Documents contemplate a finished piece of work of such character and quality as is reasonably inferable from them. The Contractor acknowledges that the contract consideration includes sufficient money allowance to make its work complete and operational and in compliance with good practice and it agrees that inadvertent minor discrepancies or omissions or the failure to show details or to repeat on any part of the Contract Documents the figures or notes given on another shall not be the cause for additional charges or claims. In case of a conflict between any part or parts of the Contract Documents with any other part or parts thereof, as contrasted with an omission or failure to show details or to repeat on any part of the Contract Documents the figures or notes given on another part thereof, the following shall be given preference, in the order hereinafter set forth, to determine what work the Contractor is required to perform: (a) Addenda (later dates to take preference over earlier dates); (b) Amendments to Agreement; (c) Agreement; (d) Specifications; (e) Schedules; (f) Large scale detail Drawings (detail drawings having a scale of 3/4" and over); (g) Large scale plan and section Drawings (plan and section drawings having a scale equal to or larger than that used for the basic floor or site plan, as the case may be); (h) Small scale detail Drawings (detail drawings having a scale of less than 3/4"); and (i) Small scale plan and section Drawings (plan and section drawings having a scale less than that used for the basic floor or site plan, as the case may be). In the event of such a conflict between or among parts of the Contract Documents that are entitled to equal preference, the more expensive way of doing the work, the better quality or greater quantity of material shall govern unless the University otherwise directs.

Section 1.07 Organization of Contract Documents

The Specifications and Drawings are generally divided into trade sections for the purpose of ready references, but such division is arbitrary and such sections shall not be construed as the prescription by the Consultant or the University of the limits of the work of any subcontractor or as a determination of the class of labor or trade necessary for the fabrication, erection, installation or finishing of the work required. The Contractor will be permitted to allot the work of subcontractors at its own discretion regardless of the grouping of the Specifications and Drawings. It shall be the Contractor's responsibility to settle definitively with each subcontractor the portions of the work which the latter will be required to do. The University and the Consultant assume no responsibility whatever for any jurisdiction claimed by any of the trades involved in the work.

Section 1.08 Furnishing of Contract Documents

The Contractor shall be furnished, free of charge, with as many copies of the Specifications and Drawings as it may reasonably request, in the judgment of the University, within fifteen (15) working days after the Notice of Award. Any other copies of the Specifications and Drawings which the Contractor may desire can be obtained by it from the Consultant at the latter's cost of duplication thereof.

Section 1.09 Examination of Contract Documents and Site

By executing the Contract, the Contractor agrees: that it has carefully examined the Contract Documents together with the site of the proposed work as well as its surrounding territory; that it is fully informed regarding all the conditions affecting the work to be done and the labor and materials to be furnished for the completion of the Contract; and that its information has been acquired by personal investigation and research and not in the estimates and records of the University.

Section 1.10 Invalid Provisions

If any term or provision of the Contract Documents or the application thereof to any person, firm or corporation or circumstance shall, to any extent, be invalid or unenforceable, the remainder of the Contract Documents, or the application of such terms or provisions to persons, firms or corporations or circumstances other than those to which it is held invalid or unenforceable, shall not be affected thereby and each term or provision of the Contract Documents shall be valid and be enforced to the fullest extent permitted by law.

Section 1.11 No Collusion or Fraud

Reference "Exhibit A" which is attached to and made a part of this Agreement.

Section 1.12 Notices

Any notice to either party hereunder must be in writing signed by the party giving it and shall be served either personally, by facsimile or registered mail of the United State Post Office and individuals indicated below:

TO THE UNIVERSITY: Director of Purchasing
Purchase College, State University of New York
735 Anderson Hill Road
Purchase, New York 10577-1402

and a copy to: Vice Chancellor for Capital Facilities
State University of New York
State University Plaza
Albany, New York 12246

TO THE CONTRACTOR: At the address indicated on page 1 of this Agreement
Or to such other addressee as may be hereafter designated by notice. All notices become effective only when received by the addressee.

Section 1.13 Singular-Plural; Male-Female

As used in the Contract Documents, the singular of any word or designation, whenever necessary or appropriate, shall include the plural and vice versa, and the masculine gender shall include the female and neuter genders and vice versa.

ARTICLE II

Contract Administration and Conduct

Section 2.01 Consultant's Status

- (1) The Consultant, as the University's representative, shall provide general administration of the Contract and inspection of the work. The Consultant will not be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the work, and it will not be responsible for the Contractor's failure to carry out the work in accordance with the Contract Documents. The Consultant's duties, services and work shall in no way supersede or dilute the Contractor's obligation to perform the work in conformance with all Contract requirements, but it is empowered by the University to act on its behalf with respect to the proper execution of the work and to give instructions when necessary to require such corrective measures as may be necessary, in its professional opinion, to insure the proper execution of the Contract or to otherwise protect the University's interest.
- (2) The Consultant shall have the authority to stop the work or to require the prompt execution thereof whenever such action may be necessary, in its professional opinion, to insure the proper execution of the Contract or to otherwise protect the interests of the

University.

- (3) Except as otherwise provided in the Contract, the Consultant shall determine the amount, quality, acceptability, fitness and progress of the work covered by the Contract and shall decide all questions of fact which may arise in relation to the interpretation of the plans and Specifications, the performance of the work and the fulfillment by the Contractor of the provisions of the Contract. The Consultant shall in the first instance be the interpreter of the provisions of the Contract and the judge of its performance and it shall use its power under the Contract to enforce its faithful performance.

Section 2.02 Finality of Decisions

- (1) Any decision or determination of the Consultant under the provisions of the Contract shall be final, conclusive and binding on the Contractor unless the Contractor shall, within ten (10) working days after such decision, make and deliver to the University a verified written statement of its contention that the decision of the Consultant is contrary to a provision of the Contract. The University shall thereupon determine the validity of the Contractor's contention. Pending decision by the University, the Contractor shall proceed in accordance with the Consultant's decision.
- (2) Wherever it is provided in the Contract Documents that an application must be made to the University and/or determination made by the University, the University's decision on such application and/or its determination under the Contract Documents shall be final, conclusive and binding upon the Contractor unless the same shall be determined by a court of competent jurisdiction to have been fraudulent, capricious, arbitrary or so grossly erroneous as necessarily to imply bad faith and unless the Contractor, within ten (10) working days after receiving notice of the University's decision or determination, files a written statement with the University and the Consultant that it reserves its rights in connection with the matters covered by said decision or determination.

Section 2.03 Claims and Disputes

- (1) If the Contractor claims (i) that any work it has been ordered to do is extra work or (ii) that it has performed or is going to perform extra work or (iii) that any action or omission of the University or the Consultant is contrary to the terms and provisions of the Contract, it shall:
 - a. Promptly comply with such order;
 - b. File with the University and the Consultant, within five (5) working days after being ordered to perform the work claimed by it to be extra work or within five (5) working days after commencing performance of the extra work, whichever date shall be the earlier, or within five (5) working days after the said action or omission on the part of the University or the Consultant occurred, a written notice of the basis of its claim and request a determination thereof;
 - c. File with the University and the Consultant, within thirty (30) calendar days after said alleged extra work was required to be performed or said alleged extra work was commenced, whichever date shall be the earlier, or said alleged action or omission by the University or the Consultant occurred, a verified detailed statement, with documentary evidence, of the items and basis of its claim;
 - d. Produce for the University's examination, upon notice from the University, all its books of account, bills, invoices, payrolls, subcontracts, time books, progress records, daily reports, bank deposit books, bank statements, checkbooks and canceled checks, showing all of its actions and transactions in connection with or relating to or arising by reason of its claim, and submit persons in its employment and in its subcontractors' employment for examination under oath by any person designated by the University to investigate any claims made against the University under the Contract, such examination to be made at the offices of the Contractor; and
 - e. Proceed diligently, pending and subsequent to the determination of the University with respect to any such disputed matter, with the performance of the Contract and in accordance with all instructions of the University and the Consultant.
- (2) The Contractor's failure to comply with any or all parts of subdivision b of paragraph (1) of this Section shall be deemed to be (i) a conclusive and binding determination on its part that said order, work, action or omission does not involve extra work and is not contrary to the terms and provisions of the Contract; and (ii) a waiver by the Contractor of all claims for additional compensation or damages as a result of said order, work, action or omission. The provisions of subdivision b of paragraph (1) of this Section are for the purpose of enabling the University to avoid waste of public funds by affording it promptly the opportunity to cancel or revise any order, change its plans, mitigate or remedy the effects of circumstances giving rise to a claim or take such other action as may seem desirable and to verify any claimed expenses or circumstances as they occur. Compliance with such provisions is essential whether or not the University is aware of the circumstances of any order or other circumstances which might constitute a basis for a claim and whether or not the University has indicated it will consider a claim in connection therewith.
- (3) No person has power to waive or modify any of the foregoing provisions and, in any action against the University to recover any sum in excess of the sum certified by the University to be due under or by reason of the Contract, the Contractor must allege in its complaint and prove at the trial compliance with the provisions of this Section.
- (4) Nothing in this Section shall in any way affect the University's right to obtain an examination before trial or a discovery and inspection in any action that might be instituted by or against the University or the Contractor.

Section 2.04 Omitted Work

The University reserves the right at any time during the progress of the work to delete, modify or change the work covered by the Contract, by a Change Order thereto providing for either a reduction or omission of any portion of the work, without constituting grounds for any claim by the Contractor for allowances for damages or for loss of anticipated profits and in such event a deduction shall be made from the Contract consideration, the amount of which is to be determined in accordance with the provisions of Section 4.02 of the Agreement.

Section 2.05 Extra Work

- (1) The University reserves the right at any time during the progress of the work to add, modify or change the work covered by the Contract by a Change Order thereto providing for extra work of either a qualitative or quantitative nature and in such event the Contract consideration shall be increased by an amount to be determined in accordance with the provisions of Section 4.02 of the Agreement and the completion date for all or any part of the work shall be extended for such period of time as may be determined by the University as necessary, because of the extra work, to complete the work or any part thereof.
- (2) Nothing in the Contract Documents shall excuse the Contractor from proceeding with the extra work as directed and, except as otherwise specifically provided for in a Change Order, the terms and conditions of the Contract Documents shall be fully applicable to all extra work.
- (3) The Contractor shall have no claim for extra work if the performance of such work, in the judgment of the Consultant, is made necessary or desirable because of any act or omission of the Contractor which is not in accordance with the Contract.
- (4) Notwithstanding the provisions of Section 2.02 of the Agreement and any other provisions of the Contract Documents to the contrary, the University, after conferring with the Consultant, shall have the right to overrule a determination or decision of the Consultant, that relates to whether certain work is included in the Contract Documents or is extra work, which he or she believes is incorrect; in the event an officer exercises such right, his or her determination or decision shall be final, conclusive and binding upon the Contractor and the University unless the same shall be determined by a court of competent jurisdiction to have been fraudulent, capricious, arbitrary or so grossly erroneous as necessarily to imply bad faith.

Section 2.06 Contractor to Give Personal Attention

- (1) The Contractor shall give its constant personal attention to all the work while it is in progress and shall place the working charge of a competent and reliable full-time superintendent acceptable to the Consultant and the University who shall have authority to act for the Contractor and who shall be accountable to the Consultant to the extent provided in the Contract. Unless the superintendent proves to be unsatisfactory to the Contractor and ceases to be in its employ, such superintendent shall not be changed without the written permission of the Consultant and the University.
- (2) When the Contractor and its superintendent are temporarily absent from the site of the work, the Contractor or its superintendent shall designate a responsible supervisory employee to receive such orders as the Consultant or its representative may give. At no time shall any work be conducted on the site in the absence of an individual present who has been so designated by the Contractor or its superintendent as having authority to receive and execute instructions given by the Consultant or its representative.

Section 2.07 Employment of Workers

The Contractor shall at all times employ competent and suitable workers and equipment which shall be sufficient to prosecute all the work to full completion in the manner and time specified. All workers engaged in specially or skilled work shall have had sufficient experience in such work to properly and satisfactorily perform the same. Should the Consultant deem any employee of the Contractor or any subcontractor incompetent, careless, insubordinate or otherwise objectionable or whose continued employment on the work is deemed by the Consultant to be contrary to the public interest, it shall so advise the Contractor and the latter shall dismiss or shall cause the subcontractor, if such employee is employed by the latter, to dismiss such employee and such employee shall not again be employed on the work to be performed under the Contract without obtaining the prior written approval of the Consultant.

Section 2.08 Detailed Drawings and Instructions

Upon timely notice by the Contractor that supplementary information is required, the Consultant shall furnish additional instructions, by means of Drawings or otherwise, necessary for the proper execution of the work. All such Drawings and instructions shall be consistent with the Contract Documents, true developments thereof and reasonably inferable there from. The work shall be executed in conformity therewith and the Contractor shall do no work without proper Drawings and/or instructions.

Section 2.09 Contract Documents to Be Kept at Site

The Contractor shall keep at the site of the work a copy of the Drawings and Specifications and shall at all times give the Consultant and the University access thereto.

Section 2.10 Permits and Building Codes

The Contractor shall obtain from the proper authorities all permits legally required to carry on its work, pay any and all taxes and fees legally

required and shall be responsible for conducting its operations in accordance with the provisions of such permits. Except as otherwise expressly provided in the Contract Documents, all of the work covered by this Contract which is to be performed on property owned by the State University of New York is not subject to the building code of any city, county or other political subdivision of the State of New York. It is, however, subject to the provisions of the New York State Uniform Fire Prevention and Building Code and the applicable Federal and State health and labor laws and regulations. The building permit for the work shall be issued by the Campus Code Compliance Officer.

Section 2.11 Surveys

- (1) From the data shown on the Drawings and identified at the site by the Consultant, a licensed surveyor, to be designated and paid for by the University, shall establish one (1) fixed bench mark and one (1) fixed base line at the site. The Contractor shall work from the bench marks and base lines shown on the Drawings, identified at the site by the Consultant and established at the site by the aforesaid surveyor and shall establish such supplementary bench marks and base lines that are required in order for it to lay out the work. The Contractor shall be responsible for all measurements that may be required for execution of the work to the exact position and elevation as prescribed in the Specifications, shown on the Drawings, or as the same may be modified at the direction of the Consultant to meet changed conditions or as a result of modifications to the work covered by the Contract.
- (2) The Contractor shall furnish at its own expense such stakes and other required equipment, tools and materials, and all labor as may be required in laying out any part of the work. If, for any reason, monuments are disturbed, it shall be the responsibility of the Contractor to reestablish them, without cost to the University, as directed by the Consultant. The Consultant may require that construction work be suspended at any time when location and limit marks established by the Contractor are not reasonably adequate to permit checking completed work or the work in progress.
- (3) In all multiple-story construction, the Contractor shall establish and maintain line marks at each floor level and grade marks four (4) feet above the finished floor at each floor level.

Section 2.12 Site Conditions

- (1) The Contractor acknowledges that it has assumed the risk and that the Contract consideration includes such provision as it deems proper for all physical conditions and subsurface conditions as it could reasonably anticipate encountering from the provisions of the Contract Documents, borings, rock cores, topographical maps and such other information as the University or the Consultant made available to it prior to the University's receipt of bids or from its own inspection and examination of the site prior to the University's receipt of bids.
- (2) In the event that the Contractor encounters subsurface physical conditions or other latent physical conditions at the site differing substantially from those shown on or described or indicated in the Contract Documents and which could not have been reasonably anticipated from the aforesaid information made available by the University or the Consultant or from the Contractor's aforesaid inspection and examination of the site, it shall give immediate notice to the Consultant of such conditions before they are disturbed. The Consultant will thereupon promptly investigate the conditions and, if it finds that they do substantially differ from that which should have been reasonably anticipated by the Contractor, it shall make such changes in the Drawings and Specifications as may be necessary and a Change Order shall be issued, the amount of which shall be determined in accordance with the provisions of Section 4.02, to reflect any increase or decrease in the cost of, or the time required for, performance of the Contract as a result of any of the aforesaid changes made by the Consultant and/or as a result of such unanticipated subsurface conditions.

Section 2.13 Right to Change Location

When additional information regarding the subsurface conditions becomes available to the University as a result of the excavation work, further testing or otherwise, it may be found desirable to change the location, alignment, dimensions or grades to conform to such conditions. The University reserves the right to make such reasonable changes in the work as, in its opinion, may be considered necessary or desirable, such changes and any adjustments in the Contract consideration as a result thereof are to be made in accordance with the provisions of Sections 2.04, 2.05 and 4.02 of the Agreement.

Section 2.14 Unforeseen Difficulties

Except as otherwise expressly provided in Section 2.12 of the Agreement and in other Sections of the Contract Documents, the Contractor acknowledges that it has assumed the risk and that the Contract consideration includes such provisions as it deems proper for any unforeseen obstacles or difficulties which it may encounter in the performance of the work.

Section 2.15 Moving Materials and Equipment

Should it become necessary, in the judgment of the Consultant, at any time during the course of the work to move materials which are stored on the site and equipment which has been temporarily placed thereon, the Contractor upon request of the Consultant shall move them or cause them to be moved at its sole cost and expense; provided, however, if materials and equipment have been stored or placed by the Contractor at a location on the site expressly approved, in writing, by the consultant and the same are moved or caused to be moved by the Contractor at the Consultant's request, such removal shall be deemed extra work and the Contractor shall be compensated therefore in accordance with the provisions of Section 4.02 of the Agreement.

Section 2.16 Other Contracts

- (1) Prior to and during the progress of the work hereunder the University reserves the right to let other contracts relating to the Project or in connection with work on sites within the Contract limit lines or adjoining or adjacent to that on which the work covered by this Contract is to be performed. In the event such other contracts are let, or have previously been let, the Contractor and such other contractors shall coordinate their work with each other, arrange the sequence of their work to conform with the progressive operation of all the work covered by such contracts and afford each other reasonable opportunities for the introduction and storage of their materials, supplies and equipment and the execution of their work. If the Contractor or such other contractors contend that their work or the progress thereof is being interfered with by the acts or omissions of the other or others or that there is a failure to coordinate or properly arrange the sequence of the work on the part of the Contractor or such other contractors, they shall, within five (5) working days of the commencement of such interference or failure of coordination or failure to perform work in proper sequence, give written notification to the University and the Consultant of such contention. Upon receipt of such notification or on its own initiative, the Consultant shall investigate the situation and issue such instructions to the Contractor or such other contractors with respect thereto as it may deem proper. The Consultant shall determine the rights of the Contractor and of such other contractors and the sequence of work necessary to expedite the completion of all work covered by this Contract in relation to the work covered by said other contracts.
- (2) The Contractor agrees that it has and will make no claim for damages against the University by reason of any act or omission to act by any other contractor or party or in connection with the Consultant's or University's acts or omissions to act in connection with such other contractor, but the Contractor shall have a right to recover such damages from the other contractors under a provision similar to the following provision which has been or will be inserted in the Contract with such other contractors.
- (3) Should any other contractor, having or who shall hereafter have a contract with the University relating to the Project or in connection with the work on sites adjoining or adjacent to that on which the work covered by this Contract is to be performed, sustain any damage, during the progress of the work hereunder, through any act or omission of the Contractor, the Contractor agrees to reimburse such other contractor for all such damages and it further agrees to indemnify and save harmless the University and the State of New York from all claims for such damages.
- (4) If the proper and accurate performance of the work covered by the Contract depends upon the proper performance and execution of work not included herein or depends upon the work of any other contractor, the Contractor shall inspect and promptly report to the Consultant any defects in such work that render it unsuitable for proper execution and results. Its failure to so inspect and report shall constitute an acceptance of the other contractor's work as fit and proper for the execution of the work covered by the Contract, except as to latent defects which may be discovered thereafter.

Section 2.17 Inspection and Testing

- (1) All materials and workmanship shall be subject to inspection, examination and testing by the Consultant and the University at all times during the performance of the work and at all places where the work is carried on. Except as otherwise herein specified, the University shall pay for the cost of inspection, examination and testing by the Consultant or the University. If, however, the tests and any attendant re-inspection or re-examination prove that the materials and/or work tested do not meet the requirements of the Contract, then the entire cost of such tests is to be borne by the Contractor. The Consultant will have the right to reject defective material and workmanship furnished by the Contractor or require its correction. The Contractor, without charge therefore, shall satisfactorily and promptly correct all rejected work and replace all rejected material with proper material.
- (2) The Contractor shall promptly segregate and remove from the site of the work all rejected material and work. If the Contractor shall fail to proceed at once with the replacing of rejected material and/or correction of defective workmanship, the University may, by contract or otherwise, replace such material and/or correct such workmanship, and charge the costs thereof to the Contractor and/or it may cancel the Contract and terminate the Contractor's employment as provided in the Agreement.
- (3) The Contractor, without additional charge therefore, shall promptly furnish all reasonable facilities, labor and materials necessary for the safe and convenient inspection and testing that may be required by the Consultant or the University.
- (4) If the Contract Documents or the Consultant's instructions or the applicable laws, ordinances or regulations of any governmental authority require any part of the work covered by the Contract to be specially tested or inspected, the Contractor shall give the Consultant timely notice of its readiness for such testing or inspection or, if the same is to be performed by a governmental authority, of the date fixed therefore. If any such work, without the written permission of the Consultant, should be covered up prior to such testing or inspection, the Contractor, at its sole cost and expense, must, if directed by the Consultant, uncover the same for testing or inspection and reconstruct the same after the tests or inspection are conducted. All certificates of inspection or testing, involving the Contractor's work, required to be obtained from governmental authorities are to be secured by the Contractor at its sole cost and expense.
- (5) Should it be considered necessary or advisable by the Consultant at any time before final acceptance of the entire work to make an examination of work already completed by removing or tearing out same, the Contractor, upon request, shall furnish all necessary facilities, labor and material to perform such examination. If the work subject to such examination is found to be defective or nonconforming in any manner due to the fault of the Contractor or any of its subcontractors, such uncovering or destruction and necessary reconstruction, even though such includes work not covered in the Contract, shall be at the expense of the Contractor. If, however, such work after testing and examination is found to be satisfactory, the University will pay the Contractor the cost of such uncovering or destruction and reconstruction, such cost to be determined as in the case of extra work as provided in Section 4.02.

- (6) Inspection of material and furnished articles to be incorporated in the work may be made at the place of production, manufacture or shipment unless otherwise stated herein. The inspection of material and workmanship for final acceptance as a whole or in part will be made at the site of the work.

Section 2.18 Subcontractors

- (1) Except for subcontractors designated by the University, or required to be named at any earlier date, pursuant to the provisions of the Information for Bidders, within thirty (30) calendar days after Notice of Award, the Contractor must submit a written statement to the Consultant giving the name and address of all proposed subcontractors. Said statement must contain a description of the portion of the work and materials which the proposed subcontractors are to perform and furnish and any other information tending to prove that the proposed subcontractors have the necessary facilities, skill, integrity, past experience and financial resources to perform the work in accordance with the terms and provisions of the Contract Documents.
- (2) If the Consultant finds that the proposed subcontractors are qualified, it will so notify the Contractor within ten (10) working days after receipt of the aforesaid information. If the determination is to the contrary, however, the Consultant within such period will notify the Contractor of such determination and the latter, unless it decides to do such work itself and is qualified, in the Consultant's opinion, to do such work, must, within ten (10) working days thereafter, submit similar information with respect to other proposed subcontractors.
- (3) The Consultant's approval of a subcontractor and/or the University's designation of a subcontractor pursuant to the provisions of the Contract Documents shall not relieve the Contractor of any of its responsibilities, duties and liabilities hereunder. The Contractor shall be solely responsible to the University for the acts or defaults of such subcontractors and of such subcontractors' officers, agents and employees, each of whom shall, for this purpose, be deemed to be the agent or employee of the Contractor to the extent of its subcontract.
- (4) The Contractor shall be fully responsible for the administration, integration, coordination, direction and supervision of all of its subcontractors and of all work and it shall check all space requirements of the work and coordinate and adjust the same so that conflicts in space do not occur in the work being performed by it with its own employees and with the work being performed by its subcontractors and so that all equipment, piping, wiring, etc., can be installed, where possible, in the spaces allowed for the same.
- (5) No subcontractor shall be permitted to work at the site until (a) it has furnished satisfactory evidence to the Consultant of the insurance required by law; (b) in the case of a Project involving a federal grant, it has furnished satisfactory evidence to the Consultant of the same type and amount of liability insurance as that required of the Contractor by Section 5.06 of the Agreement; and (c) except for subcontractors designated by the University pursuant to the provisions of the Information for bidders, it has been approved by the Consultant.
- (6) Within seven (7) working days after the Contractor receives payment from the University on account of a progress payment application for the percentage of the work done, it shall pay each of its subcontractors the sum contained in said payment for the percentage of said subcontractor's work, less the same amount retained therefrom by the University under the terms of the Contract Documents or in consequence of any legal proceedings or statutory liens, and less any amounts due the Contractor under the subcontract for work not performed or not properly or timely performed by the subcontractor. In the event any subcontractor is not paid by the Contractor, the former should immediately notify the University of such fact. Notwithstanding the foregoing, no retention or withholding of payment by the university shall affect the Contractor's obligation to pay all subcontractors, agents, employees or other parties for goods or services provided in connection with the work.
- (7) The Contractor shall execute with each of its subcontractors and shall require all subcontractors to execute with their sub-subcontractors a written agreement which shall bind the latter to the terms and provisions of this Contract insofar as such terms and provisions are applicable to the work to be performed by such subcontractors. The Contractor shall require all subcontractors and sub-subcontractors to promptly, upon request, file with the Consultant and the University a copy of such agreements, from which the price and terms of payment may be deleted.
- (8) If for sufficient reason, at any time during the progress of the work to be performed hereunder, the Consultant determines that any subcontractor or sub-subcontractor is incompetent, careless or uncooperative, the Consultant will notify the Contractor accordingly and immediate steps will be taken by the Contractor for cancellation of such subcontract or sub-subcontract. Such termination, however, shall not give rise to any claim by the Contractor or by such subcontractor or sub-subcontractor for loss of prospective profits on work unperformed and/or work unfurnished and a provision to that effect shall be contained in all subcontracts and sub-subcontracts.
- (9) No provisions of this Contract shall create or be construed as creating any contractual relation between the University and any subcontractor or sub-subcontractor or with any person, firm or corporation employed by, contracted with or whose services are utilized by the Contractor.

Section 2.19 Shop Drawings and Samples

- (1) The Contractor, in accordance with the approved Shop Drawing and Sample schedule and with such promptness and in such sequence as to cause no delay in the work, shall submit for the Consultant's approval all Shop Drawings and Samples called for under the Contract or requested by the Consultant.

- (2) Shop Drawings shall establish the actual detail of the work, indicate proper relation to adjoining work, amplify design details of mechanical and electrical equipment in proper relation to physical spaces in the structure, and incorporate minor changes of design or construction to suit actual conditions.
- (3) All Shop Drawings and Samples shall be thoroughly checked by the Contractor for compliance with the Contract Documents before submitting them to the Consultant for approval and all Shop Drawings shall bear the Contractor's recommendation for approval certifying that they have been so checked. Any Shop Drawings submitted without this stamp of approval and certification, and Shop Drawings which, in the Consultant's opinion, are incomplete, contain numerous errors or have not been checked or only checked superficially, will be returned unchecked by the Consultant for resubmission by the Contractor. In checking Shop Drawings, the Contractor shall verify all dimensions and field conditions and shall check and coordinate the Shop Drawings of any section or trade with the requirements of all other sections or trades whose work is related thereto, as required for proper and complete installation of the work.
- (4) Samples must be of sufficient size or number to show the quality, type, range of color, finish and texture of the material. Each Sample shall be properly labeled to show the nature of the material, trade name of manufacturer, name and location of the work where the material represented by the Sample is to be used and the name of the Contractor submitting the Sample. Transportation charges to the Consultant must be prepaid on Samples forwarded to it.
- (5) Shop Drawings and Samples, submitted by the Contractor in accordance with the approved Shop Drawing and Sample schedule, will be reviewed by the Consultant within fifteen (15) working days and if satisfactory will be approved. A Shop Drawing, when approved, will be returned to the Contractor. If not satisfactory, the Drawings and Samples will be appropriately marked and returned to the Contractor for correction thereof, in which event the Contractor shall resubmit to the Consultant a corrected copy of the Shop Drawing or a new Sample, as the case may be. The Contractor shall make any correction required by the Consultant and shall appropriately note any changes or revisions on the Shop Drawing, dated to correspond with the date of the Consultant's request for the change. Upon approval of the Shop Drawing by the Consultant, the Contractor shall promptly furnish to the Consultant as many copies thereof as the Consultant may reasonably request.
- (6) At the time of submission of a Shop Drawing or Sample, the Contractor shall inform the Consultant and the University in writing of any deviation in the Shop Drawing or Sample from the requirements of the Contract Documents. Unless such deviation is specifically noted by the Contractor with a notation that such deviation will result in extra work for which the Contractor requests payment or requires additional time, the Contractor shall be deemed to have waived any claim for extra work, additional compensation or payment or an extension of time with respect to all work shown on, described in or related to the Shop Drawing or Sample.
- (7) The Consultant's approval of Shop Drawings or Samples is for design only and is not a complete check on the method of assembly, erection or construction. Approval shall in no way be construed as: (a) permitting any departure whatsoever from the Contract Documents, except where the Contractor, in accordance with the provisions of paragraph 6 of this Section, has previously notified the University and the Consultant of such departure; (b) relieving the Contractor of full responsibility for any error in quality of materials, details, dimensions, omissions or otherwise that may exist; (c) relieving the Contractor of full responsibility for adequate field connections, erection techniques, bracing or deficiencies in strength; (d) relieving the Contractor of full responsibility for satisfactory performance of all work and coordination with the work of all subcontractors and other contractors; or (e) permitting departure from additional details or instructions previously furnished by the Consultant.
- (8) No work requiring a Shop Drawing or Sample shall be commenced until a Shop Drawing or Sample is approved in writing by the Consultant and all such work shall be: (a) in accordance with the approved Shop Drawing, provided the latter conforms in all respects to the Contract Documents or to such deviations therefrom as have been previously noted by the Contractor in accordance with the provisions of paragraph 6 of this Section; and (b) in conformance in all respects to the sample furnished to and approved by the Consultant and, unless otherwise specified, as new and of good quality.

Section 2.20 Equivalents - Approved Equal

A. EQUIVALENTS OR APPROVALS - GENERAL

- (1) The words "similar and equal to", "or equal", "equivalent", and such other words of similar content and meaning shall, for the purposes of this Contract, be deemed to mean similar and equivalent to one of the named products. For the purposes of subdivisions A and B of this Section and for purposes of the Bidding Documents, the word "products" shall be deemed to include the words "articles", "materials", "items", "equipment" and "methods". Whenever in the Contract Documents one or more products are specified, the words "similar and equal to" shall be deemed inserted.
- (2) Whenever any product is specified in the Contract Documents by a reference to the name, trade name, make or catalog number of any manufacturer or supplier, the intent is not to limit competition, but to establish a standard of quality which the Consultant has determined is necessary for the Project. A Contractor may at its option use any product other than that specified in the Contract Documents provided the same is approved by the Consultant in accordance with the procedures set forth in subdivision B of this Section. In all cases the Consultant shall be the sole judge as to whether a proposed product is to be approved and the Contractor shall have the burden of proving, at its own cost and expense, to the satisfaction of the Consultant, that the proposed product is similar and equal to the named product. In making such determination the Consultant may establish such objective and appearance criteria as it may deem proper that the proposed product must meet in order for it to be approved.

- (3) Nothing in the Contract Document shall be construed as representing, expressly or implicitly, that the named product is available or that there is or there is not a product similar and equal to any of the named products and the Contractor shall have and make no claim by reason of the availability or lack of availability of the named product or of a product similar and equal to any named product.
- (4) The Contractor shall have and make no claim for an extension of time or for damages by reason of the time taken by the Consultant in considering a product proposed by the Contractor or by reason of the failure of the Consultant to approve a product proposed by the Contractor.
- (5) Requests for approval of proposed equivalents will be received by the Consultant only from the Contractor.

B. EQUIVALENTS OR APPROVALS AFTER BIDDING

- (1) Requests for approval of proposed equivalents will be considered by the Consultant after bidding only in the following cases: (a) the named product cannot be obtained by the Contractor because of strikes, lockouts, bankruptcies or discontinuance of manufacture and the Contractor makes a written request to the Consultant for consideration of the proposed equivalent within ten (10) calendar days of the date it ascertains it cannot obtain the named product; or (b) the proposed equivalent is superior, in the opinion of the Consultant, to the named product; or (c) the proposed equivalent, in the opinion of the Consultant, is equal to the named product and its use is to the advantage of the University, e.g., the University receives an equitable credit, acceptable to it, as a result of the estimated cost savings to the Contractor from the use of the proposed equivalent or the University determines that the Contractor has not failed to act diligently in placing the necessary purchase orders and a savings in the time required for the completion of the construction of the Project should result from the use of the proposed equivalent; or (d) the proposed equivalent, in the opinion of the Consultant, is equal to the named product and less than ninety (90) calendar days have elapsed since the Notice of Award of the Contract.
- (2) Where the Consultant pursuant to the provisions of the subdivision approves a product proposed by a Contractor and such proposed product requires a revision or redesign of any part of the work covered by this Contract, all such revision and redesign and all new Drawings and details required therefore shall be subject to the approval of the Consultant and shall be provided by the Contractor at its own cost and expense.
- (3) Where the Consultant pursuant to the provisions of this Section approves a product proposed by a Contractor and such proposed product requires a different quantity and/or arrangement of duct work, piping, wiring, conduit or any other part of the work from that specified, detailed or indicated in the Contract Documents, the Contractor shall provide the same at its own cost and expense.

Section 2.21 Patents, Trademarks and Copyrights

The Contractor acknowledges that the Contract consideration includes all royalties, license fees and costs arising from patents or trademarks in any way involved in the work, provided, however, that the Contract consideration shall not be deemed to have included therein any royalty, license fee or cost arising from a patent or trademark for a design prepared by the Consultant and neither the Contractor nor the University shall have any liability in connection therewith. Where the Contractor is required or desires to use any product, device, material or process covered by patent or trademark, the Contractor shall indemnify and save harmless the University and the State of New York from any and all claims, actions, causes of action or demands, for infringement by reason of the use of such patented product, device, material or process, and shall indemnify the University and the State of New York from any cost, liability, damage and expense, including reasonable attorneys' fees and court costs, which it may be obligated to incur or pay by reason of any claim or infringement at anytime both before or after the University's final acceptance of all the work to be performed under the Contract.

Section 2.22 Possession Prior to Completion

If before the final completion of all the work it shall be deemed advisable or necessary by the University to take over, use, occupy or operate any part of the completed or partly completed work or to place or install therein equipment and furnishings, the University, upon reasonable written notice to the Contractor, shall have the right to do so and the Contractor will not in any way interfere therewith or object to the same. Such action by the University shall in no way affect the obligations of the Contractor under the terms and provisions of the Contract Documents and the Contractor acknowledges that such action by the University does not in any way evidence the completion of the work or any part thereof or in any way signify the University's acceptance of the work or any part thereof, provided, however, that the period for the Contractor's warranties and guarantees under the Contract for the work so occupied or operated shall be deemed to commence on the date said work is occupied or operated. The Contractor agrees to continue the performance of all work covered by the Contract in a manner which will not unreasonably interfere with such takeover, use, occupancy, operation, placement or installation.

Section 2.23 Completion and Acceptance

A. PARTIAL COMPLETION AND ACCEPTANCE

If before the final completion of all the work any portion of the permanent construction has been satisfactorily completed and the same will be immediately useful to the University, the latter may, by written notice, advise the Contractor that it accepts such portion of the work. Such actions by the University shall in no way affect the obligations of the Contractor under the terms and provisions of the Contract with respect to any work not so completed and accepted.

B. SUBSTANTIAL COMPLETION

When all the work covered by the Contract is substantially completed, i.e., has reached such point of completion that the Project can be fully occupied and used for the purposes for which it was intended, the Contractor shall give written notice thereof to the University and the Consultant. The latter will then promptly make an inspection of the work and, if they shall determine that all the work is substantially completed, they shall so advise the Contractor. Such action shall in no way affect the obligations of the Contractor under the terms and provisions of the Contract with respect to any uncompleted (including untested or deferred work), unaccepted or corrective work or in any way affect, limit or preclude the issuance by the Consultant, from time to time thereafter, of "Punch Lists", i.e., lists of uncompleted or corrective work which the Contractor is to promptly complete and/or correct.

C. FULL COMPLETION AND ACCEPTANCE

After the completion of all the work the Contractor shall give written notice to the University and the Consultant that all the work is ready for inspection and final acceptance. The University and the Consultant shall promptly make such inspection and, if they shall determine that all the work has been satisfactorily completed, the University shall thereupon by written notice advise the Contractor that it accepts such work.

Section 2.24 Record Drawings

- (1) Prior to acceptance by the University of all work covered by the Contract, the Contractor shall furnish to the Consultant one (1) set of current Contract Drawings on which the Contractor has recorded, using colored pencil, in a neat and workmanlike manner, all instances where actual field construction differs from work as indicated on the Contract Drawings. These "Record" Drawings shall show the following information: (a) all significant changes in plans, sections, elevations and details, such as shifts in location of walls, doors, windows, stairs and the like made during construction; (b) all significant changes in foundations, columns, beams, openings, concrete reinforcing, lintels, concealed anchorage and "knock-out" panels made during construction; (c) final location of electric panels, final arrangement of electric circuits and any significant changes made in electrical design as a result of Change Orders or job conditions; (d) final location and arrangement of all mechanical equipment and major concealed plumbing, including, but not limited to, supply and circulating mains, vent stacks, sanitary and storm water drainage; and (e) final location and arrangement of all underground utilities, connections to building and/or rerouting of existing utilities, including, but not limited to, sanitary, storm, heating, electric, signal gas, water and telephone.
- (2) Shop Drawings shall not be acceptable as "Record" Drawings.
- (3) The Contractor agrees to provide Record Drawings on "electronic media" or "hard copy" at the discretion of the University at no extra cost.

Section 2.25 Guarantees

- (1) The Contractor, at the convenience of the University, shall remove, replace and/or repair at its own cost and expense any defects in workmanship, materials, ratings, capacities or characteristics occurring in or to the work covered by the Contract within one (1) year or within such longer period as may otherwise be provided in the Contract, the period of such guarantee to commence with the University's final acceptance of all work covered under the Contract or at such other date or dates as the University may specify prior to that time, and the Contractor, upon demand, shall pay for all damage to all other work resulting from such defects and all expenses necessary to remove, replace and/or repair such other work which may be damaged in removing, replacing or repairing the said defects. The obligations of the Contractor under the provisions of this paragraph or any other guarantee provisions of the Contract Documents are not limited to the monies retained by the University under the Contract.
- (2) Unless such removal, replacement and/or repair shall be performed by the Contractor within ten (10) working days after it receives written notice from the University specifying such defect, or if such defect is of such a nature that it cannot be completely removed, repaired and/or replaced within said ten (10) day period and the Contractor shall not have diligently commenced removing, repairing and/or replacing such defect within said ten (10) day period and shall not thereafter with reasonable diligence and in good faith proceed to do such work, the University may employ such other person, firm or corporation as it may choose to perform such removal, replacement and/or repair and the Contractor agrees, upon demand, to pay to the University all amounts which it expends for such work.

Section 2.26 Default of Contractor

- (1) In addition to those instances specifically referred to in other Sections hereof, the University shall have the right to declare the Contractor in default of the whole or any part of the work if:
 - a. The Contractor makes an assignment for the benefit of creditors pursuant to the statutes of the State of New York; or if
 - b. A voluntary or involuntary petition in bankruptcy is filed by or against the Contractor; or if
 - c. A receiver or receivers are appointed to take charge of the Contractor's property or affairs; or if
 - d. The Contractor shall sublet, assign, transfer, convey, or otherwise dispose of the Contract other than as herein specified; or if

- (2) Before the University shall exercise its right to declare the Contractor in default by reason of the conditions set forth in this subsection, it shall give the Contractor three (3) working days' notice of its intention to declare the Contractor in default and unless, within such three (3) day period, the Contractor shall make arrangements, satisfactory to the University, to correct and/or eliminate the conditions set forth in the University's aforesaid notice, the Contractor may be declared in default at the expiration of such three (3) day period or at the expiration of such longer period of time as the University may determine. In addition to those instances specifically referred to above, the University shall have the right to declare the Contractor in default of the whole or any part of the work if, in the sole opinion of the University:
- a. The Contractor becomes insolvent; or if
 - b. The Contractor fails to commence work when notified to do so by the Consultant; or if
 - c. The Contractor shall abandon the work; or if
 - d. The Contractor shall refuse to proceed with the work when and as directed by the Consultant; or if
 - e. The Contractor shall without just cause reduce its working force to a number which, if maintained, would be insufficient, in the opinion of the University, to complete the work in accordance with the approved time progress schedule, and shall fail or refuse to sufficiently increase such working force when ordered to do so by the Consultant; or if
 - f. The Contractor is or has been unnecessarily or unreasonably or willfully delaying the performance and completion of the work, or the award of necessary subcontracts, or the placing of necessary material and equipment orders; or if
 - g. The work cannot be completed within the time herein provided therefore or within the time to which such completion may have been extended; provided, however, that the impossibility of timely completion is, in the University's opinion, attributable to conditions within the Contractor's control; or if
 - h. The work is not completed within the time herein provided therefore or within the time to which the Contractor may be entitled to have such completed extended; or if
 - i. The Contractor is or has been willfully or in bad faith violating any of the provisions of this Contract; or if
 - j. The Contractor is not or has not been executing the Contract in good faith and in accordance with its terms.
- (3) The right to declare in default for any of the grounds specified or referred to shall be exercised by the University sending the Contractor a written notice setting forth the ground or grounds upon which such default is declared. Upon receipt of notice that it has been declared in default, the Contractor shall immediately discontinue all further operations under the Contract and shall immediately quit the site, leaving untouched all plant, materials, equipment, tools and supplies then on site.
- (4) The University, after declaring the Contractor in default, may then have the work completed by such means and in such manner, by contract, with or without public letting, or otherwise, as it may deem advisable, utilizing for such purpose such of the Contractor's plant, materials, equipment, tools and supplies remaining on the site, and also such subcontractors as it may deem advisable, or it may call upon the Contractor's surety at its own expense to do so.
- (5) In the event that the University declared the Contractor in default of the work or any part of the work, the Contractor, in addition to any other liability to the University hereunder or otherwise provided for or allowed by law, shall be liable to the University for any costs it incurs for additional architectural and engineering services necessary, in its opinion, because of the default and the total amount of liquidated damages from the date when the work should have been completed by the Contractor in accordance with the terms hereof to the date of actual completion of the work, both of which items shall be considered as expenses incurred by the University in completing the work and the amount of which may be charged against and deducted out of such monies as would have been payable to the Contractor or its surety if the work had been completed without a default.
- (6) If the University completes the work, the Consultant shall issue a certificate stating the expenses incurred in such completion, including the cost of re-letting. Such certificates shall be final, binding and conclusive upon the Contractor, its surety, and any person claiming under or through the Contractor, as to the amount thereof.
- (7) The expense of such completion, as so certified by the Consultant, shall be charged against and deducted out of such monies as would have been payable to the Contractor if it had completed the work; the balance of such monies, if any, subject to the other provisions of the Contract, to be paid to the Contractor without interest after such completion. Should the expense of such completion, so certified by the Consultant, exceed the total sum which would have been payable under the Contract if the same had been completed by the Contractor, any such excess shall be paid by the Contractor to the University upon demand.
- (8) In the event the University shall determine to complete the work without calling upon the Contractor's surety to do so, the Contractor shall not be entitled, from and after the effective date of the declaration of the default, to receive any further payment under the Contract until the said work shall be wholly completed and accepted by the University.
- (9) In case the University shall declare the Contractor in default as to a part of the work only, the Contractor shall discontinue such part, shall continue performing the remainder of the work in strict conformity with the terms of the Contract, and shall in no way hinder or interfere with any other contractors or persons whom the University may engage to complete the work as to which the Contractor

was declared in default.

- (10) The provisions relating to declaring the Contractor in default as to the entire work shall be equally applicable to a declaration of partial default, except that the University shall be entitled to utilize for completion of the part of the work as to which the Contractor was declared in default only such plant, materials, equipment, tools and supplies as had been previously used by the Contractor on such part.
- (11) In completing the whole or any part of the work, the Consultant and the University shall have the power to depart from, change or vary the terms and provisions of the Contract; provided, however, that such departure, change or variation is made for the purpose of reducing the time or expense of such completion. Such departure, change or variations, even to the extent of accepting a lesser or different performance, shall not affect the conclusiveness of the Consultant's certificate of the cost of completion, nor shall it constitute a defense to any action to recover the amount by which such certificate exceeds the amount which would have been payable to the Contractor hereunder but for its default.
- (12) The provisions of this Section shall be in addition to any and all other legal or equitable remedies provided by this Agreement and otherwise available by law.

Section 2.27 Termination

- (1) The performance of work under this Contract may be terminated by the University, in whole or in part, whenever the University shall determine that such termination is in the best interest of the University; or in the event the State Finance Law Sections 139-j and 139-k certifications are found to be intentionally false or intentionally incomplete; or in the event the information provided in Sales Tax Certifications ST-220TD and/or ST-220CA is found to be false or incomplete. Any such termination shall be effected by a notice in writing to the Contractor specifying the date upon which such termination shall become effective and the extent to which performance of the Contract shall be terminated. Such termination shall be effective on the date and to the extent specified in said notice.
- (2) Upon receipt of a notice of termination, and except as otherwise directed in writing by the University, the Contractor shall:
 - a. Discontinue all work and the placing of all orders for materials and facilities otherwise required for the performance thereof;
 - b. Cancel all existing orders and subcontracts to the extent such orders and subcontracts relate to the performance of work terminated by the notice of termination;
 - c. Take such actions as may be necessary to secure to the University the benefits of any rights of the Contractor under orders or subcontracts which relate to the performance of work terminated by the notice of termination, including, but not limited to, the assignment to the University, in the manner and to the extent directed by the University, all the right, title and interest of the Contractor under the orders or subcontracts so terminated and canceled. In the event of such assignment, the University shall have the right, in its discretion, to settle or pay any or all claims arising out of the termination and cancellation of such orders and subcontracts;
 - d. Transfer title and deliver to the University, in accordance with the direction of the University, all materials, supplies, work in process, facilities, equipment, machines or tools produced as a part of or acquired by the Contractor in connection with the work terminated by said notice, and all plans, Drawings, Working Drawings, sketches, Specifications and information for use in connection therewith; provided, however, that the Contractor may retain any of the foregoing if it so elects and forgoes reimbursement therefore;
 - e. Take such action as may be necessary or as the Consultant or the University may prescribe for the protection and preservation of all property in the possession or control of the Contractor in which the University, under the provisions of the Contract, has or may acquire an interest.
- (3) Notwithstanding the foregoing, should the notice of termination relate to only a portion of the work covered by the Contract, the Contractor will proceed with the completion of such portions of the work as are not terminated.
- (4) The University will pay and the Contractor shall accept, in full consideration for the performance and completion of the portions of the work as are not terminated, a sum calculated by determining the percentage the portions of the work not terminated bear to the total amount of the work covered by the Contract, and by multiplying the Contract consideration by such percentage the product thereof being the amount to be paid to the Contractor. The University shall determine the amount of such consideration in accordance with the foregoing.
- (5) Upon compliance by the Contractor with the foregoing provisions of this Section and subject to deductions for payments previously made, the University, for the portions of the work terminated, shall compensate the Contractor as follows:
 - a. By reimbursing the Contractor for actual expenditures made with respect to such work, including expenditures made in connection with any portion thereof which may have been completed prior to termination, as well as expenditures made after termination in completing those portions of the work covered by the Contract which the Contractor may have been required by the notice of termination to complete. The University shall determine the allocability and amount of such expenditures.

- b. By reimbursing the Contractor for all actual expenditures made, with the prior written approval of the University or pursuant to a court judgment, in settling or discharging any outstanding contractual obligations or commitments incurred or entered into by the Contractor in good faith with respect to the Contract and resulting from the termination thereof.
 - c. By reimbursing the Contractor for all actual expenditures made after the effective date of the notice of termination resulting from or caused by the Contractor taking necessary action or action prescribed by the Consultant or the University for the protection and preservation of all property in the possession or control of the Contractor in which the University, under the provisions of the Contract, has or may acquire an interest.
 - d. By paying the Contractor a markup, which is to be calculated in the same manner as that provided for in subdivision c of paragraph (1) of Section 4.02 for extra work, on the foregoing expenditures, which markup is to cover the Contractor's overhead and profit; provided, however, that if it appears that the Contractor would have sustained a loss on the entire Contract had it been completed, said markup shall be reduced by one-third.
- (6) The sum of all amounts payable under this Section, plus the sum of all amounts previously paid by the University under the provisions of the Contract, shall not exceed the amount of the Contract consideration. In no event shall the Contractor be entitled to any payment for loss of anticipated profits on uncompleted work and the University shall not be liable for the same.
 - (7) Termination by the University under the provisions of this Section shall be without prejudice to any claims or rights which the University may have against the Contractor. The University may retain from the amount due to the Contractor under the provisions of this Section such monies as may be necessary to satisfy any claim which the University may have against the Contractor in connection with the Contract; provided, however, that the University's failure to retain such monies shall not be deemed a waiver of any of its rights or claims against the Contractor.
 - (8) Notwithstanding the foregoing, where the Contractor and the Consultant can agree upon another method of determining the amount of the consideration to be paid to the Contractor under the provisions of the Section, such method, subject to the approval of the University, may, at the option of the University, be substituted for the method set forth above.

ARTICLE III

Time of Performance

Section 3.01 Commencement, Prosecution and Completion of Work

- (1) The Contractor agrees that it will begin the work herein embraced within ten (10) calendar days after the Contract approval date and that it will prosecute the same with such diligence that all work covered by the Contract shall be entirely completed and performed on or before the time specified on page A-1 of the Agreement.
- (2) The Contractor further agrees that time is of the essence in this Contract and that the work shall be prosecuted in such manner and with sufficient plant and forces to complete all the work by the specified completion date.

Section 3.02 Time Progress Schedule

- (1) Within thirty (30) calendar days after receipt of the Notice of Award, the Contractor, unless otherwise directed by the University, shall submit to the University and the Consultant for their approval its proposed working plan and schedule for its first ninety (90) calendar days of operation. The working plan and schedule shall be in the form of suitable charts, diagrams or bar graphs and shall be based on the Contractor's logic and time estimates. Such plan and schedule shall be sufficiently detailed to show clearly, in sequence, all salient features of the work of each trade including: the anticipated time of commencement and completion of such work and the interrelationship between such work, submission of Shop Drawings and Samples for approval, approval of Shop Drawings and Samples, placing of orders of materials, fabrication and delivery of materials, installation and testing of materials, contiguous or related work under other contracts, and other items pertinent to the work.
- (2) Within ninety (90) calendar days after receipt of the Notice of Award, the Contractor, unless otherwise directed by the University, shall submit to the University and the Consultant for their approval its proposed working plan and schedule for all the work covered by the Contract. Said proposed working plan and schedule shall be prepared in accordance with the form and requirements set forth in the preceding paragraph.
- (3) The aforesaid proposed working plan and schedule shall be revised by the Contractor until they are satisfactory to the University and the Consultant, and the same shall be periodically revised thereafter and submitted by the Contractor to the University and the Consultant for approval at such time or times as the University or the Consultant may request.
- (4) The proposed working plan and schedule, including any revision or revisions thereof, when approved by both the University and the Consultant shall be known as the time progress schedule. The time progress schedule, as the same may be revised from time to time by the Contractor and approved by the University and the Consultant, shall be strictly adhered to by the Contractor.
- (5) If through the fault of the Contractor or any subcontractor the Contractor shall fail to adhere to the time progress schedule, it must promptly adopt such other and additional means and methods of construction as will make up for the time lost and will assure completion in accordance with such schedule.

- (6) The University's or the Consultant's approval of the Contractor's time progress schedule or of its time, means and/or methods of construction, including any revisions thereof, and/or their failure to reject the same shall not relieve the Contractor of its obligation to accomplish the result required by the Contract, nor shall the exercise of such right to reject, create or give rise to any claim, action or cause of action, legal, equitable or otherwise, against the Consultant or the University.

Section 3.03 Time Schedule for Shop Drawings and Samples

- (1) Within sixty (60) calendar days after the date specified for the commencement of the work, the Contractor, unless otherwise directed by the Consultant, shall submit to the latter for approval a proposed time schedule covering the preparation and submission of all Shop Drawings and Samples. The proposed schedule will be revised by the Contractor until it is satisfactory to the Consultant and it shall be periodically revised thereafter and submitted by the Contractor to the Consultant for approval at such time or times as the Consultant may request.
- (2) The aforesaid schedule, as the same may be revised from time to time by the Contractor, after approval by the Consultant, shall be strictly adhered to by the Contractor.

Section 3.04 Notice of Conditions Causing Delay

- (1) Within ten (10) working days after the commencement of any condition which is causing or may cause delay in completion, the Contractor must notify the Consultant and the University in writing of the effect, if any, of such condition upon the time progress schedule, and must state why and in what respects, if any, the condition is causing or may cause such delay.
- (2) Failure to strictly comply with this requirement may, in the discretion of the University, be deemed sufficient cause to deny any extension of time on account of delay in completion arising out of or resulting from any change, extra work, suspension, or other condition.

Section 3.05 Extension of Time

- (1) An extension or extensions of time for the completion of the work may be granted by the University subject to the provisions of this Section, but only upon written application therefore by the Contractor to the University and the Consultant.
- (2) An application for an extension of time must set forth in detail the source and the nature of each alleged cause of delay in the completion of the work, the date upon which each such cause of delay began and ended and the number of days of delay attributable to each of such causes. It must be submitted prior to completion of the work.
- (3) If such an application is made, the Contractor shall be entitled to an extension of time for delay in completion of the work caused solely: (a) by the acts or omissions of the University, its trustees, officers, agents or employees; or (b) by the acts or omissions of other contractors, not including subcontractors of the Contractor, on this Project; or (c) by unforeseeable supervening conditions entirely beyond the control of either party hereto (such as, but not limited to, acts of God or the public enemy, war or other national emergency making performance temporarily impossible or illegal, or strikes or labor disputes).
- (4) The Contractor shall, however, be entitled to an extension of time for such causes only for the number of calendar days of delay which the University may determine to be due solely to such causes, and then only if the Contractor shall have strictly complied with all of the requirements of this Section and Section 3.04. The University shall make such determination within ninety (90) calendar days after receipt of the Contractor's application for an extension of time; provided, however, said application complies with the requirements of this Section.
- (5) The Contractor shall not be entitled to receive a separate extension of time for each one of several causes of delay operating concurrently, but, if at all, only for the actual period of delay in completion of the work as determined by the University, irrespective of the number of causes contributing to produce such delay. If one of several causes of delay operating concurrently results from any act, fault or omission of the Contractor or of its subcontractors or materialmen, and would of itself (irrespective of the concurrent causes) have delayed the work, no extension of time will be allowed for the period of delay resulting from such act, fault or omission.
- (6) The granting of an application for an extension of time for causes of delay other than those herein referred to shall be entirely within the discretion of the University.
- (7) If the Contractor shall claim to have sustained any damages by reason of delays, extraordinary or otherwise, or hindrances which it claims to be due to any action, omission, direction or order by the University or the Consultant, the Contractor shall be entitled only to an extension of time as hereinabove provided and shall not have or assert any claim or prosecute any suit, action, cause of action or proceeding against the University based upon such delays or hindrances, unless such delays or hindrances were caused by the University's bad faith or its willful, malicious, or grossly negligent conduct, or un contemplated delays, or delays so unreasonable that they constitute an intentional abandonment of the contract by the University, or delays resulting from the University's breach of a fundamental obligation of the contract.

Section 3.06 Contractor's Progress Reports

After commencement of the work the Contractor shall furnish the Consultant with written monthly reports setting forth the condition and

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general progress of the work, the percentage of each part of the work that has been finished, those parts of the work which have been completed within the scheduled time and those parts of the work which have not been finished within the scheduled time, and the general progress of the work that is being performed away from the site and the approximate date when such work will be finished and delivered to the site.

ARTICLE IV

Payment

Section 4.01 Compensation to Be Paid Contractor

The University shall pay to the Contractor and the latter shall accept as full and complete payment for the performance of this Contract, subject to additions or deductions as provided herein, the sum indicated on page 1 of this Agreement which sum is the amount of the total contract compensation. The Contractor shall provide complete and accurate billing invoices to the University in order to receive payment for its services. Billing invoices submitted to the University must contain all information and supporting documentation required by the University and the Office of the State Comptroller (OSC). **Payment for invoices submitted by the Contractor shall only be rendered electronically** unless payment by paper check is expressly authorized by the Vice President for Administration or designee, in her/his sole discretion, due to extenuating circumstances. Such electronic payment shall be made in accordance with ordinary New York State procedures and practices. The Contractor shall comply with the OSC procedures to authorize electronic payments. Authorization forms are available at the OSC website at www.osc.state.ny.us/epay/index.htm, by email at epunit@osc.state.ny.us or by telephone at 518-474-4032. The Contractor acknowledges that it will not receive payment on any invoices submitted under this contract if it does not comply with the OSC's electronic payment procedures, except where the Vice President or designee has expressly authorized payment by paper check as set forth above.

Section 4.02 Value of Omitted and Extra Work

(1) The amount by which the Contract consideration is to be increased or decreased by any Change Order shall be determined by the University by one or more of the following methods:

- a. By accepting an amount agreed upon by both parties, which amount is to be calculated in a manner similar to that provided in subdivision c hereof.
- b. By applying the applicable price or prices set forth in the attached Schedule "I" of this Agreement or by applying a unit price agreed to by both parties. Subject to the provisions of Sections 4.04, this method must be used if the Contract Documents contain applicable unit prices.
- c. By estimating the fair and reasonable cost of: (i) labor, including all wages, required wage supplements and insurance required by law (workers' compensation, social security, disability, unemployment, etc.) paid to or on behalf of foremen, workers and other employees below the rank of superintendent directly employed at the site of the Project; (ii) materials; and (iii) equipment, excluding hand tools, which, in the judgment of the University, would have been or will be employed exclusively and directly on the omitted work or extra work, as the case may be; and, in the case of extra work, where the same is performed directly by the Contractor, by adding to the total of such estimated costs a sum equal to 15 percent thereof, but, where the extra work is performed by a subcontractor, by adding a sum equal to 15 percent of said costs for the benefit of such subcontractor, and by adding, for the benefit of the Contractor (no further allowance will be made where extra work is performed by the sub-subcontractor), an additional sum equal to 10 percent of the first \$10,000 of the above-estimated costs, including the subcontractor's percentage override, plus 5 percent of the next \$90,000 of the total of said items, plus 3 percent of any sum in excess of \$100,000 of the total of said items. For the purposes of the aforesaid percentage overrides, the words "extra work" shall be defined as a complete item of added, modified or changed work as described in the Consultant's written instructions to the Contractor. Such "extra work" may include the work of one or more trades and/or subcontractors or sub-subcontractors and shall include all labor, materials, plant, equipment, tools and all incidentals directly and/or indirectly necessary, related, involved in or convenient to the successful completion of the extra work item. Where the Consultant's aforesaid written instructions to the Contractor involve both an increase and a reduction in similar or related work, the above percentage overrides will be applied only on the amount, if any, the cost of the increased work exceeds the cost of the reduced work.

All profit, overhead and expense of whatsoever kind and nature, other than those set forth above in items (i) through (iii), of the Contractor, its subcontractors and sub-subcontractors, are covered by the aforesaid percentage overrides and no additional payment therefore will be made by the University. The University may make such cost estimate either before or after the extra work is completed by the Contractor.

- d. By determining the actual cost of the extra work in the same manner as in the above subdivision c except that actual costs of the Contractor shall be utilized in lieu of estimated costs. The University shall have the option of utilizing this method provided it notifies the Contractor of its intent to do so prior to the time the Contractor commences performance of such extra work.
- (2) Irrespective of the method used or to be used by the University in determining the value of a Change Order, the Contractor, within fifteen (15) working days after a request for the same, must submit to the University and the Consultant a detailed breakdown of the Contractor's estimate of the value of the omitted and/or extra work.

- (3) For the purposes of paragraph (1) hereof, the cost of equipment shall be determined, irrespective of the actual price for any rental or actual cost associated with such equipment and irrespective of whether the equipment is or is not owned by the Contractor, as follows: (a) for the first 40 hours of use by taking the monthly rate listed in the "Green Book" (the publication of the Associated Equipment Distributors of Oakbrook, Illinois) and dividing the same by 176 hours to establish an hourly rate and then multiplying such hourly rate by the actual number of hours that the equipment was used; and (b) for any period of time in excess of the first 40 hours of use by taking 50 percent of the hourly rate established in accordance with the above for equipment used for periods of less than 40 hours, and then multiplying such rate by the actual number of hours in excess of 40 hours that the equipment was used. In the event that the "Green Book" does not list the item of equipment used, the applicable rate shall be determined in the same manner as that set forth above except that the monthly rate shall be that set forth in the "Blue Book" (published by Equipment Guidebook Co. of Palo Alto, California). If no listing or rates for an item of equipment is contained in either the "Green Book" or the "Blue Book", the University shall determine the reasonable rate of rental of the particular item of equipment by such other means as it finds appropriate. The editions of the "Green Book" and the "Blue Book" to be used shall be those in effect on the date of the receipt of bids for this Contract. None of the provisions of the "Green Book" or the "Blue Book" shall be deemed referred to or included in this Contract excepting only the aforesaid monthly rates. To the cost of equipment as determined above, there is to be added the actual cost of gasoline, oil, grease and maintenance required for operation of such equipment and, in the case of equipment utilized only for extra work when, in the opinion of the Consultant, suitable equipment therefore was not available on the site, the reasonable cost of transporting said equipment to and from the site. Notwithstanding the foregoing, if the Consultant should determine that the nature or size of the equipment used by the Contractor in connection with the extra work is larger or more elaborate, as the case may be, than the size or nature of the minimum equipment determined by the Consultant to be suitable for the extra work, the cost of equipment will not be based upon the equipment used by the Contractor but instead will be based on the smallest or least elaborate equipment determined by the Consultant to have been suitable for the performance of the extra work.
- (4) Unless otherwise specifically provided for in a Change Order, the compensation specified therein for extra work includes full payment for both the extra work covered thereby and for any damage or expense caused the Contractor by any delays to other work to be done under the Contract resulting from or on account of said extra work, and the Contractor waives all rights to any other compensation for said extra work, damage or expense.

Section 4.03 Adjustment for Bond and Insurance Premiums

Upon final acceptance of the work to be performed under this Contract, the University shall adjust the Contract consideration to reflect any changes in the cost of all required Bonds and liability and builder's risk insurance premiums which the Contractor had to pay for on all extra work and would have had to furnish and pay for on all omitted work. Unless such cost is agreed upon by the University and the Contractor, the University shall calculate and determine the amount of the adjustment in the Contract consideration by estimating such cost.

Section 4.04 Unit Prices

- (1) Except as otherwise provided in the second paragraph of this Section, the unit prices, set forth in the attached Schedule I will be binding upon both the University and the Contractor in determining the value of omitted and/or extra work, and, in the case of extra work, such unit prices shall be deemed to include all profit, overhead and expenses of whatever kind and nature of the Contractor, its subcontractors and sub-subcontractors, and the Contractor agrees that it shall make no claim for any profit, overhead, expense or percentage override in connection therewith.
- (2) Where Schedule I sets forth a unit price for added and/or deducted work, the University shall have the option, whenever it is found that the quantity of changed work varies by more than 15 percent from the quantity that is stated or that can be determined by the Contract Documents at the time of execution thereof, to accept or reject such unit price for the quantity that the changed work varies by more than 15 percent from the stated or determinable quantity. Where a quantity is not specifically stated in the Contract Documents, the University's determination of the amount of said quantity included in the Contract Documents shall determine the applicability of this paragraph. Where the University, pursuant to the foregoing provisions, exercises its aforesaid option, the amount of the increase or decrease in the Contract consideration for the quantity of work which varies by more than 15 percent from the stated or determinable quantity shall be determined in accordance with the provisions of Section 4.02 of the Agreement as if there was no unit price therefore set forth in said Proposal.

Section 4.05 Allowances

- (1) The Contractor acknowledges that the Contract consideration includes the allowances set forth in the attached Schedule I and, except for quantitative allowances, it agrees to cause the work covered thereby to be done by such contractors for such sums as the University may direct. Where cash allowances are provided, the allowances shall be deemed to include the purchase of the materials and/or equipment and the delivery of the same to the job site. Unless otherwise specified in the Contract Documents, cash allowances do not include the proper installation of the materials and/or equipment or the connection for final utilities thereto; the cost of said installation and/or connection having been included in the amount of the Contract consideration.
- (2) The Contractor acknowledges that the Contract consideration includes such sums for expenses and profit on account of cash allowances as it deems proper and that it shall make no claim for expenses or profit or any percentage override in addition thereto; said items having been included in the amount of the Contract consideration.
- (3) In the event any cash allowance listed below is either higher or lower than the cost of having the work done in accordance herewith, the Contract consideration shall be adjusted to reflect such variance, the amount of said adjustment to be the difference between the amount of the allowance and the actual cost of performing the work covered thereby.

- (4) When quantitative allowances are provided, progress payments thereof to the Contractor will be based upon the applicable unit prices set forth in the attached Schedule I, subject, however to the provisions of paragraph (2) of Section 4.04. In the event any of said quantitative allowances are more than or less than the actual quantity of work performed, the Contract consideration shall be adjusted to reflect such variance, the amount of said adjustment to be determined in accordance with the provisions of Section 4.02 and Section 4.04 of the Agreement.

Section 4.06 Deductions for Unperformed and/or Uncorrected Work

- (1) Without prejudice to any other rights, remedies or claims of the University, in the event that the Contractor at any time fails or neglects to supply working forces and materials of the proper quantity and quality necessary, in the opinion of the Consultant or the University, to comply with the approved time progress schedule, or fails in any respect to prosecute the work with promptness and diligence or causes by any action or omission the stoppage or delay of or interference with the work of any other contractor having a contract with the University, or fails in the performance of any obligations and responsibilities under this Contract, then, and in that event, the University, acting itself or through the Consultant, may, upon three (3) working days' notice to the Contractor, either itself provide or have any other contractor provide any and all labor or materials or both necessary, in its opinion, to correct any aforesaid deficiency of the Contractor, and the University will thereafter back charge the Contractor by issuing a Change Order reducing the amount of the Contract consideration for all costs and expenses it incurs in connection with the correction of such deficiency.
- (2) Notwithstanding any provisions in the Contract Documents to the contrary, if the University deems it inexpedient to correct work not done in accordance with the Contract or any work damaged as a result thereof, it shall notify the Contractor of such fact and the latter shall not remedy or correct the same. In such event, however, the amount of the Contract consideration shall be decreased by an amount, determined by the University, which is equal to the difference in value of the work as performed by the Contractor and the value of the work had it been satisfactorily performed in accordance with the Contract or which is equal to the cost of performing the corrective work, whichever shall be the higher amount.

Section 4.07 Liquidated Damages

In the event that the Contractor shall fail to substantially complete all the work within the time fixed for such completion on page A-1 of the Agreement, or within the time to which such completion may have been extended, or in the event that the Contractor abandons the work and the same is not substantially completed within the aforesaid time for such completion, the Contractor must pay to the University as damages for each calendar day of delay in completing the work the amount set forth on page A-1. In view of the difficulty of accurately ascertaining the loss which the University will suffer by reason of delay in completion of the work hereunder, said sum is hereby fixed and agreed as liquidated damages which the University will suffer by reason of such delay and not as a penalty. The University may deduct and retain out of the monies which may become due hereunder to the Contractor the amount of any such liquidated damages and, in case the amount which may become due to the Contractor under the provisions of the Contract may be less than the liquidated damages suffered by the University, the Contractor shall pay the difference, upon demand, to the University.

Section 4.08 Contract Breakdown

Prior to the submission of its first application for a progress payment, the Contractor shall present to the University and the Consultant for their approval a detailed schedule showing the breakdown of the Contract consideration. Such schedule must contain the amount estimated for each part of the work and quantity survey for each part of the work. It shall also list the estimated value of the Contractor's guarantee obligations under the provisions of the Contract Documents, which is hereby fixed at \$5,000 or one-half of one percent (1/2%) of the Contract award amount, whichever is the lesser sum. Such schedule shall be revised by the Contractor until the same shall be satisfactory to the University and the Consultant and shall not be changed after the University and the Consultant have approved the same. The amounts set forth in the schedule will not be considered as fixing the basis for additions to or deductions from the Contract consideration.

Section 4.09 Prompt Payment Requirements

- (1) For the purposes of Article XI-A of the State Finance Law, the campus for which the work is being performed is the University's designated payment office. Applications for payment must contain the approval of the Consultant before being submitted to the University.
- (2) Whenever the Consultant's approval of an application for payment is required under the Contract, the Consultant shall have fifteen (15) calendar days after receipt of such application to inspect the work before acting on the application.
- (3) This Contract is subject to the signature approval of Purchase College. Until such approval is given, the thirty (30) day period referred to in Article XI-A of the State Finance Law for the payment of invoices without interest shall not begin.

Section 4.10 Progress Payments

- (1) Unless otherwise provided in the Contract, progress payments will be made as the work progresses upon applications submitted by the Contractor and approved by the Consultant and the University. Payment of such approved applications shall be made by the University within thirty (30) days after such approval has been given.
- (2) The University shall make progress payments to the Contractor on the basis of such approved applications, less an amount equal to 5

percent thereof, plus an amount necessary, in the University's judgment, to satisfy any claims, liens or judgments against the Contractor which have not been suitably discharged, which it shall reserve from each such payment until all of the work covered by the Contract has been completed.

- (3) When the University and the Consultant have determined that all the work is substantially completed, or that a substantial portion of the permanent construction has been completed and accepted, the University shall make a progress payment to the Contractor, on the basis of an application submitted by the Contractor and approved by the Consultant and the University, which shall reduce the unpaid amount due to the Contractor under the terms of the Contract, including all monies retained by the University from previous progress payments to the Contractor, to an amount equal to two (2) times the cost, estimated by the Consultant, of performing, in accordance with the Contract, all uncompleted, unaccepted and corrective work, plus an amount necessary, in the University's judgment, to satisfy any claims, liens or judgments against the Contractor which have not been suitably discharged. As the remaining items of work are satisfactorily completed or corrected, the University shall make progress payments to the Contractor, on the basis of applications submitted by the Contractor and approved by the University and the Consultant, covering said items of work less an amount necessary, in the University's judgment, to satisfy any claims, liens or judgments against the Contractor which have not been suitably discharged.

Section 4.11 Applications for Progress Payments

The Contractor shall prepare all applications for progress payments for work performed, together with supporting data and computations as are deemed necessary by the Consultant to determine the accuracy of the application. The application for payment shall be submitted on the form prescribed by the University. Failure of the Contractor to submit applications for progress payments, or lack of complete and accurate supporting data, shall be sufficient reason for withholding payment until such omissions or errors are rectified. Unless otherwise directed, such applications, signed and certified as correct by the Contractor, shall be delivered by the Contractor to the Consultant once each month showing the total value of work completed and in place on the last day of the payment period covered by the application.

Section 4.12 Progress Payments for Materials Delivered to Site

- (1) Progress payments made in accordance with Section 4.10 shall include a payment for materials and equipment to be furnished and installed under the Contract, after such materials and equipment have been delivered and accepted at the site of the work.
- (2) Materials and equipment for which such progress payment has been made shall not be removed from the site, shall be stored until incorporated into the work in a location approved by the Consultant and shall be adequately protected from fire, theft and vandalism, the effects of the elements and any other damage whatsoever, and shall at all times be available for inspection by the Consultant and the University.

Section 4.13 Transfer of Title to Materials Delivered to Site

Title to all supplies and materials to be furnished or provided by the Contractor to the University pursuant to the provisions of the Contract Documents shall immediately vest in and become the sole property of the University upon delivery of such supplies and materials to the site. Notwithstanding such transfer of title, the Contractor shall have the full continuing responsibility to install such materials and supplies, protect them, maintain them in proper condition and forthwith repair, replace and make good any damage thereto without cost to the University until such time as the work covered by the Contract is fully accepted by the University. Such transfer of title shall in no way affect any of the Contractor's obligations under the Contract. In the event that, after title has passed to the University, any of such supplies and materials are rejected as being defective or otherwise unsatisfactory, title to all such supplies and materials shall be deemed to have been transferred back to the Contractor.

Section 4.14 Progress Payments for Materials Stored Off Site

- (1) Progress payments made in accordance with Section 4.10 shall include a payment for materials and equipment which are in short and/or critical supply or have been specially fabricated for the Project. Materials and equipment, for which a progress payment is made pursuant to the preceding sentence, shall be stored by the Contractor, after fabrication, until such time as their delivery to the site is required, at a facility and location approved by the Consultant; shall be adequately protected from fire, theft and vandalism, the effects of the elements and any other damage whatsoever; and shall at all times be available for inspection by the Consultant and the University. No progress payment shall, however, be made for said materials and equipment until:
 - a. The Contractor furnishes to the University a bill of sale listing quantity and costs of said materials and equipment f.o.b. point of origin;
 - b. The Consultant shall have inspected said materials and equipment and recommended payment therefore; and
 - c. The Contractor furnishes to the University a builder's risk insurance policy, with the broad form extended coverage endorsement, for said materials and equipment, in an amount equal to 100 percent of the value thereof, which policy shall be maintained, at the sole cost and expense of the Contractor, until said materials and equipment have been incorporated into the Project. The said insurance policy shall contain a provision that the loss, if any, is to be made adjustable with and payable to the University as trustee for the insured, i.e., the University and the Contractor, and a provision that it shall not be changed or canceled and that it will be automatically renewed upon expiration and continued in force unless the University is given fifteen (15) days' written notice to the contrary.

- (2) Materials and equipment for which a progress payment has been made by the University pursuant to this Section shall be, become and remain the sole property of the University; provided, however, that the Contractor shall have the full continuing responsibility to install such materials and equipment, to deliver it to the site, to protect it, to maintain it in proper condition and to forthwith repair, replace and make good any damage thereto without cost to the University until such time as the work covered by the Contract is fully accepted by the University. Such transfer of title shall in no way affect any of the Contractor's obligations under the Contract.

Section 4.15 Withholding of Progress Payments

Notwithstanding anything contained in the Contract to the contrary, the University may withhold payment of all or any part of a progress, final or guarantee payment, in such an amount as it may deem proper to enforce the provisions of the Contract and to satisfy the claims of third parties, when:

- a. The University shall learn of any claim, of whatever nature or kind, against the University or the Contractor, which in any way arises or is alleged to arise out of or as a result of or in connection with the performance by the Contractor of the work covered by the Contract or out of or in connection with the Contractor's operations or performance at or in the vicinity of the construction site, that, in the opinion of the University, may not be adequately covered by insurance.

If an action on such claim is timely commenced and the liability of the University and/or the Contractor shall have been established therein by a final judgment of a court of competent jurisdiction, or if such claim shall have been admitted by the Contractor to be valid, the University shall pay such judgment or admitted claim out of the monies retained by it under the provisions of the Contract and return the balance, if any, without interest, to the Contractor.

The University may withhold from the Contractor any payments retained by it until such time as all such claims are either satisfied or barred by law from being presented. At such time the University, upon written demand by the Contractor, shall return to the Contractor the amount so withheld, without interest.

- b. The Contractor has not complied with any lawful or proper direction of the Consultant or the University or their representatives concerning the work covered by the Contract or the performance of the Contract or the production of records as required under the provisions of the Contract.
- c. There exists any of the conditions, listed in Section 2.26, which would allow the University to declare the Contractor in default of the whole or any part of the work.
- d. The Contractor is a foreign contractor and has not furnished satisfactory proof that all taxes due by such Contractor under the provisions of the Tax Law have been paid. The Certificate of the New York State Tax Commission to the effect that all such taxes have been paid shall be conclusive proof of the payment of such taxes. The term "foreign contractor" as used herein means, in the case of an individual, a person who is not a resident of the State of New York; in the case of a partnership, one having one or more partners not a resident of the State; and in the case of a corporation, one not organized under the laws of the State of New York.
- e. The Contractor, upon request of the University at any time after the initial progress payment by the University to the Contractor, fails to furnish the University with such documentary evidence that the University may deem necessary to prove to it that material and labor paid for by the University under previous applications for payment submitted have been paid for by the Contractor and that there are no outstanding claims or liens in connection therewith or fails to satisfy the University that the Contractor, with good cause, has sufficiently provided for the payment and/or satisfaction of claims for said material and labor.

Section 4.16 Lien Law

The attention of the Contractor is specifically called to the provisions of the Lien Law of the State of New York, wherein funds received by a Contractor for a public improvement are declared to constitute trust funds in the hands of such Contractor to be applied first to the payment of certain claims.

Section 4.17 Substitution of Securities for Retainage

Any time after 50 percent of all the work has been completed, the University, if the progress and performance of the work is satisfactory to it, on request of the Contractor, will allow the Contractor to withdraw up to 50 percent of the aforesaid amount retained by the University by depositing with the Comptroller of the State of New York government securities, of the type and kind specified in Section 139 of the State Finance Law, having a market value not exceeding par, at the time of deposit, equal to the amount so withdrawn. The Comptroller of the State of New York shall, from time to time, collect all interest or income on the obligations so deposited, and shall pay the same, when and as collected, to the Contractor. If the deposit is in the form of coupon bonds, the coupons as they respectively become due shall be delivered to the Contractor; provided, however, that the Contractor shall not be entitled to interest or coupons or income on any of the deposited securities, the proceeds of which have or will be used or applied by the University. In the event that the Contractor does not, in accordance with the terms and provisions of the Contract, comply with and fulfill all of its obligations and responsibilities thereunder, the Comptroller of the State of New York shall have the right to sell, assign, transfer or otherwise dispose of the aforesaid securities and the University shall have the right to use and apply all or any part of the monies obtained by the Comptroller of the State of New York from such a sale, assignment, transfer or disposition or from the collection of interest or income from said securities to the performance and fulfillment of said obligations and responsibilities. Notwithstanding the foregoing, when the University makes a payment under Section 4.10 (3) of the Agreement, it will return to the Contractor, as part of such payment, its substituted securities, and thereafter all retention of the University

shall be in funds and not in substituted securities.

Section 4.18 Final Payment

Upon acceptance of all the work, except for the Contractor's guarantee obligations under Section 2.25 of the Agreement and the Contractor's guarantee obligations under any provision of the Specifications, the contractor shall prepare and submit to the University and the Consultant, for their approval, a final application for payment, which the University, within thirty (30) days after its approval of the same, shall pay. Such application and payment shall be in an amount equal to 100 percent of the Contract consideration, excluding the Contractor's guarantee obligations (reference Section 4.08), less:

- a. All previous payments by the University to the Contractor;
- b. All deductions authorized to be made by the University under the Contract; and
- c. An amount necessary, in the University's judgment, to satisfy any claims, liens or judgments against the Contractor which have not been suitably discharged.

Section 4.19 Acceptance of Final Payment

- (1) The acceptance by the Contractor, or by anyone claiming by or through it, of the final payment shall, except with respect to the amount retained by the University pursuant to the provisions of subdivisions b and c of Section 4.18 of the Agreement, constitute and operate as a release to the University from any and all claims of any liability for anything theretofore done or furnished for or relating to or arising out of the work covered by the Contract and for any prior act, neglect or default on the part of the University or any of its trustees, officers, agents or employees in connection therewith.
- (2) Should the Contractor refuse to accept the final payment as tendered by the University or should the Contractor refuse to execute the final application for payment without protest and without reserving any rights or claims against the University, it shall constitute a waiver of any right to interest on the amount of the payment so tendered and/or on the amount set forth in said final application for payment.

Section 4.20 Guarantee Payment

- (1) Subject to the provisions of the second paragraph of this Section, at the expiration of one (1) year after the University has accepted all the work covered by the Contract, the Contractor shall prepare and submit to the University and the Consultant, for their approval, a guarantee application for payment, which the University, within thirty (30) days after its approval of the same, shall pay. Such application and payment shall be in an amount equal to the monies retained by the University for the Contractor's guarantee obligations under the Agreement, less any monies deducted by the University under this Section. The Contractor shall not be entitled to any interest on the monies retained by the University pursuant to subdivision c of Section 4.18 of the Agreement.
- (2) In the event the Contractor does not, in accordance with the terms and provisions of the Contract, complete all corrective work or comply with and fulfill its contractual obligations, the University may use and apply all or any part of the monies retained by it to have such work or obligations performed or fulfilled by a person, firm or corporation other than the Contractor. The obligations of the Contractor, under the terms and provisions of the Contract, shall not, however, be limited to the monies retained by the University pursuant to the provisions of the Contract.
- (3) No payments may be made under this agreement for work completed more than 365 days after

{Insert Contract Closing Date}

Unless the date/duration listed on page A-1, is extended in writing by the Fund, and approved by OSC.

Section 4.21 Acceptance of Guarantee Payment

The acceptance by the Contractor, or by anyone claiming by or through it, of the guarantee payment shall constitute and operate as a release to the University from any and all claims in connection with monies retained by the University. Should the Contractor refuse to accept the guarantee payment as tendered by the University or should the Contractor refuse to execute the guarantee application for payment without protest and without reserving any rights or claims against the University, it shall constitute a waiver of any right to interest on the amount of the payment so tendered and/or on the amount set forth in said guarantee application for payment.

Section 4.22 Contractor Limited to Money Damages

Inasmuch as the Contractor can be compensated adequately by money damages for any breach of the Contract which may be committed by the University, the Contractor agrees that no default, act or omission of the University shall constitute a material breach of the Contract entitling it to cancel or rescind the same or to suspend or abandon performance thereof; and it hereby waives any and all rights and remedies to which it might otherwise be or become entitled to because of any wrongful act or omission of the University or its representatives, saving

only its right to money damages.

Section 4.23 No Estoppel or Waiver

- (1) The University shall not be precluded or estopped by any inspection, acceptance, application for payment or payment, final or otherwise, issued or made under the Contract or otherwise issued or made by it, the Consultant, or any trustee, officer, agent or employee of the University, from showing at any time the true amount and character of the work performed, or from showing that any such inspection, acceptance, application for payment or payment is incorrect or was improperly issued or made; and the University shall not be precluded or estopped, notwithstanding any such inspection, acceptance, application for payment or payment, from recovering from the Contractor any damages which it may sustain by reason of any failure on its part to comply strictly with the Contract and any monies which may be paid to it or for its account in excess of those to which it is lawfully entitled.
- (2) Neither the acceptance of all or any part of the work covered by the Contract; nor any payment therefore; nor any order or application for payment issued under the Contract or otherwise issued by the University, the Consultant, or any trustee, officer, agent or employee of the University; nor any permission or direction to continue with the performance of the Contract before or after its specified completion date; nor any performance by the University of any of the Contractor's duties or obligations; nor any aid lent to the Contractor by the University in its performance of such duties or obligations; nor any delay or omission by the University to exercise any right or remedy accruing to it under the terms of the Contract or existing at law or in equity or by statute or otherwise; nor any other thing done or omitted to be done by the University, its trustees, officers, agents or employees; shall be deemed to be a release to the Contractor or its sureties from any obligations, liabilities or undertakings in connection with the Contract or the Performance Bond or a waiver of any provision of the Contract or of any rights or remedies to which the University may be entitled because of any breach thereof, excepting only a written instrument expressly providing for such release or waiver. No cancellation, rescission or annulment hereof, in whole or as to any part of the Contract, because of any breach hereof, shall be deemed a waiver of any money damages to which the University may be entitled because of such breach. No waiver by the University of any breach of the Contract shall be deemed to be a waiver of any other or any subsequent breach.

Section 4.24 Limitation of Actions

- (1) No action or proceeding shall be maintained by the Contractor, or anyone claiming under or through the Contractor, against the University, or its trustees, officers, agents or employees, upon any claim arising out of or based upon the Contract or any breach thereof or by reason of any act or omission or requirement of the University, or its trustees, officers agents or employees, unless:
 - a. Such action or proceeding is instituted in the Court of Claims for the State of New York;
 - b. The Contractor or the person claiming under or through it shall have strictly complied with all requirements relating to the giving of notices and information with respect to such claims; and
 - c. Such action or proceeding shall be commenced within one (1) year after the submission to the University of the final application for payment or, if the claim is based upon monies required to be retained for any period after the date of the final application for payment, such action is commenced within six (6) months after such monies become due and payable under the terms of the Contract; or
 - d. If the Contract is terminated or the Contractor declared in default by the University, such action is commenced within six (6) months after the date of such termination or declaration of default by the University.
- (2) Notwithstanding anything in the laws of the State of New York to the contrary, the Contractor, or anyone claiming under or through the Contractor, shall not be entitled to any additional time to begin anew any other action if an action commenced within the times herein specified is dismissed or discontinued for any reason whatsoever.

ARTICLE V

Protection of Rights and Property

Section 5.01 Accidents and Accident Prevention

The Contractor shall at all times take reasonable precautions for the safety of persons engaged in the performance of the work. The Contractor shall comply fully with all applicable provisions of the laws of the State of New York, OSHA, and with all valid rules and regulations adopted or promulgated by the agencies of the State of New York pursuant thereto. The Contractor's attention is specifically called to the applicable rules and regulations, codes and bulletins of the New York State Department of Labor.

Section 5.02 Adjoining Property

The Contractor shall be required to protect all the adjoining property and to repair or replace any such properties damaged or destroyed by it, its employees or subcontractors through, by reason of or as a result of activities under, for or related to the Contract.

Section 5.03 Emergencies

- (1) In case of an emergency which threatens loss or injury to persons or property, the Contractor will be allowed to act, without previous instructions from the Consultant or the University, in a diligent manner, to the extent required to avoid or limit such loss or injury, and it shall notify the Consultant and the University immediately thereafter of the action taken by it and of such emergency. Where the Contractor has not taken action but has notified the Consultant or the University of an emergency which threatens loss or injury to persons or property, it shall act in accordance with the instructions and/or authorization by the Consultant or the University.
- (2) In the event that the Contractor performs extra work in accordance with the preceding paragraph, it will be compensated therefore in accordance with the provisions of Section 4.02.

Section 5.04 Fire Safety

- (1) In the event that a municipal fire alarm box is not located within 300 feet from the site of the Project, the Contractor will be required to provide at the site of the Project, at a location approved by the Consultant, a private unlisted telephone reserved for fire calls only. The phone must be in addition to regular business phones and a rule prohibiting its use for purposes other than alarm for fire or other emergencies must be strictly enforced. The phone itself should be colored red and be located at a point quickly available to all employees, including watchmen. Clear instructions for the sending of a fire alarm should be conspicuously posted by the phone and all personnel customarily at work near the phone shall be acquainted with the procedure. If such a phone is required, the Contractor, at its sole cost and expense, must provide the same from the time the University first approves the Contract breakdown to be submitted by the Contractor pursuant to the provisions of Section 4.08 up until the time the University accepts all the work covered by the Contract.
- (2) All solid fuel salamanders and U. L. approved heaters used by the Contractor or any of its subcontractors shall be arranged in a standard manner. All other salamanders used by the Contractor or any of its subcontractors shall require constant attendance of competent persons on each floor where in use.
- (3) All temporary fabric used by the Contractor or any of its subcontractors for curtains or awnings shall be either non-combustible or flame retarded so that it will not burn or propagate flame.

Section 5.05 Risks Assumed by Contractor

- (1) The Contractor solely assumes the following distinct several risks whether they arise from acts or omissions (whether negligent or not and whether supervisory or otherwise) of the Contractor, of the University, of third persons or from any other cause, including unforeseen obstacles and difficulties which may be encountered in the prosecution of the work covered by the Contract, whether such risks are within or beyond the control of the Contractor and whether such risks involve a legal duty, primary or otherwise, imposed upon the State University Construction Fund, the Dormitory Authority of the State of New York, the State of New York or the State University of New York, excepting only risks which arise from defects in maps, plans, designs or Specifications prepared, acquired or used by the Consultant or the University, from the negligence of the University, its agents or employees or from affirmative acts of the State University Construction Fund, the Dormitory Authority of the State of New York, the State of New York or the State University of New York or their trustees, officers, agents or employees committed with intent to cause the loss, damage and injuries herein below set forth:
 - a. The risk of loss or damage, direct or indirect, to the work covered by the Contract or to any plant, equipment, tools, materials or property furnished, used, installed or received by the University or by the Contractor or any subcontractor, materialman or worker performing services or furnishing materials for the work covered hereunder.

The Contractor shall bear such risk of loss or damage until the work covered by the Contract has been fully accepted by the University or until completion of removal of such plant, equipment, tools, materials or property from the construction site and the vicinity thereof, whichever event occurs last. In the event of such loss or damage, the Contractor shall forthwith repair, replace and/or make good any such loss or damage without cost to the University.
 - b. The risk of claims, just or unjust, by third persons against the Contractor, the State University Construction Fund, the Dormitory Authority of the State of New York, the State of New York, or the State University of New York on account of wrongful death, bodily injuries and property damage, direct or consequential, loss or damage of any kind whatsoever arising or alleged to arise out of or as a result of or in connection with the performance by the Contractor of the work covered by the Contract (whether actually caused by or resulting from the performance of the Contract) or out of or in connection with the Contractor's operations or presence at or in the vicinity of the construction site. The Contractor shall bear such risk for all such deaths, injuries, damages or losses sustained or alleged to have been sustained prior to the final acceptance by the University of all work covered by the Contract. The Contractor shall also bear the risk of claims for wrongful death occurring subsequent to said final acceptance provided such death is caused, contributed to or is a consequence of bodily injuries sustained or alleged to have been sustained prior to said final acceptance.
- (2) The Contractor shall indemnify and save harmless the State University Construction Fund, the Dormitory Authority of the State of New York, the State of New York and the State University of New York, their trustees, officers, agents or employees against all claims described above and for all costs and expenses incurred by them in the defense, settlement or satisfaction thereof, including attorneys' fees and court costs. If so directed, the Contractor shall at its own expense defend against such claims, in which event it shall not, without obtaining express advance permission from Counsel of the University, raise any defense involving in any way jurisdiction of the tribunal over the University, governmental nature of the University or the provisions of any statutes respecting suits

against the University.

- (3) Neither the University's final acceptance of the work to be performed hereunder nor the making of any payment shall release the Contractor from its obligations under this Section. The enumeration elsewhere in the Contract of particular risks assumed by the Contractor or of particular claims for which it is responsible shall not be deemed to limit the effect of the provision of this Section or to imply that it assumes or is responsible for only risks or claims of the type enumerated.

Section 5.06 Compensation and Liability Insurance

- (1) The Contractor shall procure and maintain, at its own cost and expense, until final acceptance by the University of all the work covered by this Contract, the following kinds of insurance:

- a. Workers' Compensation Insurance.

A policy complying with the requirements of the laws of the State of New York.

- b. General Liability and Property Damage Insurance.

A standard general comprehensive liability insurance policy or a commercial general liability insurance policy issued to and covering the liability of the Contractor for all work and operations under this Contract, including, but not limited to, contractual and completed operations coverage. Such policy shall be written by a company licensed or approved as an excess line liability company by the New York State Department of Insurance. The coverage under such policy shall not be less than the following limits:

Bodily Injury and Property Damage Liability
\$ 1,000,000 Each Occurrence
\$ 2,000,000 Aggregate

The aforesaid insurance requirements will be deemed met by the Contractor's procurement and maintenance of either of the aforesaid policies and, in addition thereto, an umbrella policy providing similar coverage; provided, however, that the total amount of insurance coverage is at least equal to the requirements above set forth.

- c. Automobile Liability and Property Damage Insurance.

A policy covering the use in connection with the work covered by the Contract Documents of all owned, non-owned and hired vehicles bearing, or, under the circumstances under which they are being used, required by the Motor Vehicle Laws of the State of New York to bear license plates. The coverage under such policy shall not be less than the following limit:

Bodily Injury and Property Damage Liability
\$ 1,000,000 Each Occurrence

- d. Owner's Protective Liability Insurance.

A policy issued to and covering the liability for damages imposed by law upon the State University Construction Fund, the Dormitory Authority of the State of New York, the State of New York and the State University of New York, their trustees, officers, agents or employees, with respect to all operations under the Contract by the Contractor and its subcontractors, and/or their interest in the Project and the property upon which work under the Contract is to be performed, including omissions and supervisory acts of the former. Said insurance shall be in the same amounts as that required under subdivision b above and shall be written by a company licensed or approved as an excess line liability company by the New York State Department of Insurance.

- e. Asbestos Abatement Insurance.

A liability insurance policy issued to and covering the liability, of the Contractor and/or subcontractor engaged in the removal, handling or wrapping of asbestos, if any of such work is to be performed under the Contract, for bodily injury, illness, sickness or property damage caused by exposure to asbestos in an amount not less than \$1,000,000 per occurrence and \$2,000,000 aggregate. The Contractor and/or its aforesaid subcontractor shall either obtain an endorsement to the aforesaid required insurance policy adding the State University Construction Fund, the Dormitory Authority of the State of New York, the State of New York and the State University of New York, their trustees, officers, agents or employees, as additional parties insured thereunder or shall obtain a separate owner's protective liability insurance policy for such parties with coverage similar to that required by the first sentence of this subdivision. In addition, any Contractor or subcontractor engaged in the removal, handling, or wrapping of asbestos shall hold harmless and indemnify the State University Construction Fund, the Dormitory Authority of the State of New York, the State of New York and the State University of New York, for any claims or liabilities in connection with illness or sickness arising from work performed, not performed, or which should have been performed. The Contractor shall have said hold-harmless and indemnification conditions stipulated in all Contracts with subcontractors.

- (2) The aggregate insurance limit set forth above shall apply separately to each project for which a certificate of insurance and/or policy is issued.
- (3) Before commencing the performance of any work covered by the Contract, the Contractor shall furnish to the University a certificate

or certificates in duplicate of the insurance required under the foregoing provisions. Such certificates shall be on a form prescribed by the University, shall list the various coverages and shall contain, in addition to any provisions hereinbefore required, a provision that the policy shall not be changed or canceled and that it will be automatically renewed upon expiration and continued in force until final acceptance by the University of all the work covered by the Contract, unless the University is given fifteen (15) days' written notice to the contrary. Upon request, the Contractor shall furnish the University with a certified copy of each policy. The State University reserves the right to receive a copy of the insurance policy which was based on the Certificate of Insurance issued.

- (4) All insurance required to be procured and maintained as aforesaid must be procured from insurance companies approved by the University and authorized to do business in the State of New York. The State University is to be cited as a named insured on all policies and certificates of insurance and shall be notified if a policy is canceled, terminated or modified.
- (5) If at any time any of the above-required insurance policies should be canceled, terminated or modified so that insurance is not in effect as above required, then, if the University shall so direct, the Contractor shall suspend performance of the work covered in the Contract. If the said work is so suspended, no extension of time shall be due on account thereof. If said work is not suspended, then the University may, at its option, obtain insurance affording coverage equal to that above required, the cost of such insurance to be payable by the Contractor to the University.

Section 5.07 Builder's Risk Insurance

- (1) The Contractor shall procure and maintain, at its own cost and expense, until final acceptance of all work covered by this Contract or until the Project has been turned over for use by the State University of New York, whichever event occurs earlier, a builder's risk insurance policy with fire, extended coverage, vandalism and malicious mischief coverage.
- (2) The policy shall be in an amount equal to the Project's insurable value, i.e., the Contract consideration less the cost of the Contractor's Performance and Labor and Material Bonds; the cost of trees, shrubbery, lawn grass, plants and the maintenance of the same; the cost of demolition; the cost of excavation; the cost of foundations, piers or other supports which are below the undersurface of the lowest basement floor, or where there is no basement, which are below the surface of the ground, concrete and masonry work; the cost of underground flues, pipes or wiring; the cost of earthmoving, grading and the cost of paving, roads, walks, parking lots or athletic fields; and the cost of bridges, tunnels, dams, piers, wharves, docks, retaining walls and radio and/or television towers and antennas.
- (3) The policy may contain a provision for a \$500 deductible for each loss to a Project having an insurable value of less than \$1,500,000 and a \$1,000 deductible for each loss to a Project having an insurable value of \$1,500,000 or more.
- (4) The University, the Contractor and its subcontractors, as their interests may appear, will be named as the parties insured under said policy.
- (5) The Contractor shall have the sole responsibility to promptly report any loss to the insurer and/or its representatives and to furnish the latter with all necessary details relating to the occurrence of the loss and the amount thereof. The University, the Contractor and all subcontractors of the Contractor waive all rights, each against the others, for damages caused by fire or other perils covered by insurance provided under the terms of this Section, except such rights as they may have to the proceeds of insurance received; provided, however, this waiver shall not apply to any manufacturer, supplier or similar agent under any guarantee or warranty.
- (6) The Contractor shall not violate or permit to be violated any condition of such policy and shall at all times satisfy the fire safety requirements of the University and the insurance company issuing the same.
- (7) The procurement and maintenance of said policy shall in no way be construed or be deemed to relieve the Contractor from any of the obligations and risks imposed upon it by this Contract or to be a limitation on the nature or extent of such obligations and risks.
- (8) Such policy shall contain a provision that it shall not be changed or canceled and that it will be automatically renewed upon expiration and continue in force until final acceptance by the University of all the work covered by the Contract, unless the University is given fifteen (15) days' written notice to the contrary. Before the Contractor shall be entitled to have any progress payment rendered on account of the work which is to be insured pursuant to this Section, it shall furnish to the University a certificate in duplicate of the insurance herein required. Such insurance must be procured from an insurance company approved by the University and authorized to do business in the State of New York.

Section 5.08 Effect of Procurement of Insurance

Neither the procurement nor the maintenance of any type of insurance by the University or the Contractor shall in any way be construed or be deemed to limit, discharge, waive or release the Contractor from any of the obligations and risks imposed upon it by the Contract or to be a limitation on the nature or extent of such obligations and risks.

Section 5.09 No Third Party Rights

Nothing in the Contract shall create or give to third parties, except the State University Construction Fund, the Dormitory Authority of the State of New York, the State of New York and the State University of New York, any claim or right of action against the Contractor, the Consultant, the State University Construction Fund, the Dormitory Authority of the State of New York, the State of New York or the State

University of New York beyond such as may legally exist irrespective of the Contract.

ARTICLE VI

Affirmative Action

The State University's requirements for affirmative action are set forth in "Exhibit A-1" which is attached hereto and made a part hereof, and shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included herein and, in the event any such provision is not inserted or is not correctly inserted, then, upon the application of either party, this Contract shall forthwith be physically amended to make such insertion or correction.

ARTICLE VII

Provisions Required by Law

Section 7.01 Provisions Deemed Inserted

Each and every provision required by law to be inserted in the Contract, including, but not limited to, the provisions set forth in Exhibit "A" which is attached hereto and made a part hereof, shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included herein and, in the event any such provision is not inserted or is not correctly inserted, then, upon the application of either party, this Contract shall forthwith be physically amended to make such insertion or correction.

Section 7.02 Entire Agreement

This Agreement consists of 1) the IFB; 2) the contractor's proposal; and 3) Exhibits A and A-1. This Agreement supersedes all previous understandings and agreements with respect to the Project or any of the provisions thereof. No statement, promise, condition, understanding, inducement, or representation, oral or written, expressed or implied, which is not contained herein shall be binding or valid and this Agreement shall not be changed, modified or altered in any manner except by an instrument in writing executed by the parties hereto.

Section 7.03 Hierarchy of Precedent

In the event of any controversy regarding the provisions of this Agreement, the terms of Exhibits A and A1 shall take precedence followed by this Agreement, the IFB and the contractor's proposal.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

Section 7.04 Wage Rates

The Contractor shall post the appropriate prevailing wage schedules in a conspicuous place at the construction site. The Department of Labor shall provide the Contractor with posters relating to prevailing wage rates and the same shall be displayed by the Contractor in a conspicuous place at the construction site. The Contractor shall also distribute wallet cards, to be provided by the Department of Labor, to all workers engaged at the construction site containing information relating to wage rates and telephone numbers to call if a worker believes his or her rights are being violated. The Contractor shall provide each worker with a written notice, informing them of the applicable prevailing wage requirements, and the Contractor must obtain a signed statement or declaration from such worker attesting to the fact that he or she has been given this information. Further, the Contractor is required to keep certified copies of its payrolls at the construction site.

Section 7.05 Contractor Responsibility

The Purchase College, State University of New York will undertake an affirmative review of the proposed Contractor's responsibility in accordance with the standards outlined in Comptroller's Bulletin G 221, and based upon such review, will determine if it is reasonably assured that the proposed Contractor is responsible.

Agency Certification: "In addition to the acceptance of this Contract, it is certified that an originally executed copy of this signature page will be attached to an exact copy of the Contract Documents, and forwarded to the Contractor".

STATE UNIVERSITY OF NEW YORK

By: _____ Date ____/____/____ Agency Code 28260
(campus official)

CONTRACTOR

(If Corporation, Affix Seal)

By: _____ Date ____/____/____

(If Corporation, Affix Seal)

ACKNOWLEDGMENTS
(ACKNOWLEDGMENT BY AN INDIVIDUAL)

STATE OF NEW YORK)
) ss.:
COUNTY OF)

On this _____ day of _____, 20____, before me personally came _____
_____, to me known and known to me to be the person(s) described in and who executed
the foregoing instrument and he/she acknowledged to me that he/she executed the same.

Notary Public

(ACKNOWLEDGMENT BY A PARTNERSHIP)

STATE OF NEW YORK)
) ss.:
COUNTY OF)

On this _____ day of _____, 20____, before me personally came _____
_____, to me known and known to me to be the person who executed the above instrument,
who, being duly sworn by me, did for themselves depose and say that they are a member of the firm of _____
_____, consisting of themselves and _____
_____, that he/she executed the foregoing instrument in the firm name _____
_____, and that he/she had authority to sign the same, and that he/she did duly acknowledge to me
that he/she executed the same as the act and deed of the aforementioned firm for the purposes mentioned therein.

Notary Public

(ACKNOWLEDGMENT BY A CORPORATION)

STATE OF)
) ss.:
COUNTY OF)

On this _____ day of _____, 20____, before me personally came _____
_____, to me known, who, being duly sworn, did depose and say that he/she reside in
_____; that he/she is the _____
of the _____, the corporation described in and which executed
the foregoing instrument; that he/she knows the seal of said corporation; that the seal affixed to said instrument was such corporate seal;
that it was affixed by the order of the Board of Directors of said corporation, and that he/she signed their name thereto by like order.

Notary Public

SCHEDULE I

The following Unit Prices shall apply for additional work authorized by Change Order:

UNIT PRICES

<u>Description of Unit Price</u>	<u>Amount of Unit Price</u>
----------------------------------	-----------------------------

None

The total bid includes the following Allowances:

ALLOWANCES

None

The parties to the attached contract, license, lease, amendment or other agreement of any kind (hereinafter, "contract") agree to be bound by the following clauses which are hereby made a part of the contract (the word "Contractor" herein refers to any party other than the State, whether a Contractor, licensor, licensee, lessor, lessee or any other party):

1. **EXECUTORY CLAUSE.** In accordance with Section 41 of the State Finance Law, the State shall have no liability under this contract to the Contractor or to anyone else beyond funds appropriated and available for this contract.

2. **PROHIBITION AGAINST ASSIGNMENT**
Except for the assignment of its right to receive payments subject to Article 5-A of the State Finance Law, the Contractor selected to perform the services herein are prohibited in accordance with Section 138 of the State Finance Law from assigning, transferring, conveying, subletting or otherwise disposing of its rights, title or interest in the contract without the prior written consent of SUNY and attempts to do so are null and void. Notwithstanding the foregoing, SUNY may, with the concurrence of the New York Office of State Comptroller, waive prior written consent of the assignment, transfer, conveyance, sublease or other disposition of a contract let pursuant to Article XI of the State Finance Law if the assignment, transfer, conveyance, sublease or other disposition is due to a reorganization, merger or consolidation of Contractor's its business entity or enterprise and Contractor so certifies to SUNY. SUNY retains the right, as provided in Section 138 of the State Finance Law, to accept or reject an assignment, transfer, conveyance, sublease or other disposition of the contract, and to require that any Contractor demonstrate its responsibility to do business with SUNY.

3. **COMPTROLLER'S APPROVAL.** (a) In accordance with Section 112 of the State Finance Law, Section 355 of New York State Education Law, and 8 NYCRR 316, Comptroller's approval is not required for the following contracts: (i) materials; (ii) equipment and supplies, including computer equipment; (iii) motor vehicles; (iv) construction; (v) construction-related services; (vi) printing; and (vii) goods for State University health care facilities, including contracts for goods made with joint or group purchasing arrangements.

(b) Comptroller's approval is required for the following contracts: (i) contracts for services not listed in Paragraph (3)(a) above made by a State University campus or health care facility certified by the Vice Chancellor and Chief Financial Officer, if the contract value exceeds \$250,000; (ii) contracts for services not listed in Paragraph (3)(a) above made by a State University campus not certified by the Vice Chancellor and Chief Financial Officer, if the contract value exceeds \$50,000; (iii) contracts for services not listed in Paragraph (3)(a) above made by health care facilities not certified by the Vice Chancellor and Chief Financial Officer, if the contract value exceeds \$75,000; (iv) contracts whereby the State University agrees to give something other than money, when the value or reasonably estimated value of such consideration exceeds \$10,000; (v) contracts for real property transactions if the contract value exceeds \$50,000; (vi) all other contracts not listed in Paragraph 3(a) above, if the contract value exceeds \$50,000, e.g. SUNY acquisition of a business and New York State Finance Article 11-B contracts and (vii) amendments for any amount to contracts not listed in Paragraph (3)(a) above, when as so amended, the contract exceeds the threshold amounts stated in Paragraph (b) herein;

(c) Any contract that requires Comptroller approval shall not be valid, effective or binding upon the State University until it has been approved by the Comptroller and filed in the Comptroller's office.

4. **WORKERS' COMPENSATION BENEFITS.** In accordance with Section 142 of the State Finance Law, this contract shall be void and of no force and effect unless the Contractor shall provide and maintain coverage during the life of this contract for the benefit of such employees as are required to be covered by the provisions of the Workers' Compensation Law.

5. **NON-DISCRIMINATION REQUIREMENTS.**
To the extent required by Article 15 of the Executive Law (also known as the Human Rights Law) and all other State and Federal statutory and constitutional non-discrimination provisions, the Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, sex, national origin, sexual orientation, age, disability, genetic predisposition or carrier status, or marital status. Furthermore, in accordance with Section 220-e of the Labor Law, if this is a contract for the construction, alteration or repair of any public building or public work or for the manufacture, sale or distribution of materials, equipment or supplies, and to the extent that this contract shall be performed within the State of New York, Contractor agrees that neither it nor its subcontractors shall, by reason of race, creed, color, disability, sex, or national origin: (a) discriminate in hiring against any New York State citizen who is qualified and available to perform the work; or (b) discriminate against or intimidate any employee hired for the performance of work under this contract. If this is a building service contract as defined in Section 230 of the Labor Law, then, in accordance with Section 239 thereof, Contractor agrees that neither it nor its subcontractors shall by reason of race, creed, color, national origin, age, sex or disability: (a) discriminate in hiring against any New York State citizen who is qualified and available to perform the work; or (b) discriminate against or intimidate any employee hired for the performance of work under this contract. Contractor is subject to fines of \$50.00 per person per day for any violation of Section 220-e or Section 239 as well as possible termination of this contract and forfeiture of all moneys due hereunder for a second or subsequent violation

6. **WAGE AND HOURS PROVISIONS.** If this is a public work contract covered by Article 8 of the Labor Law or a building service contract covered by Article 9 thereof, neither Contractor's employees nor the employees of its subcontractors may be required or permitted to work more than the number of hours or days stated in said statutes, except as otherwise provided in the Labor Law and as set forth in prevailing wage and supplement schedules issued by the State Labor Department. Furthermore, Contractor and its subcontractors must pay at least the prevailing wage rate and pay or provide the prevailing supplements, including the premium rates for overtime pay, as determined by the State Labor Department in accordance with the Labor Law. Additionally, effective April 28, 2008, if this is a public work contract covered by Article 8 of the Labor Law, the Contractor understands and agrees that the filing of payrolls in a manner consistent with Subdivision 3-a of Section 220 of the Labor Law shall be a condition precedent to payment by SUNY of any SUNY-approved sums due and owing for work done upon the project.

7. **NON-COLLUSIVE BIDDING CERTIFICATION.**
In accordance with Section 139-d of the State Finance Law, if this contract was awarded based on the submission of competitive bids, Contractor affirms, under penalty of perjury, and each person signing on behalf of Contractor, and in the case of a joint bid each party thereto certifies as to its

own organization, under penalty of perjury, that to the best of its knowledge and belief that its bid was arrived at independently and without collusion aimed at restricting competition. Contractor further affirms that, at the time Contractor submitted its bid, an authorized and responsible person executed and delivered it to SUNY a non-collusive bidding certification on Contractor's behalf.

8. **INTERNATIONAL BOYCOTT PROHIBITION.**
In accordance with Section 220-f of the Labor Law and Section 139-h of the State Finance Law, if this contract exceeds \$5,000, the Contractor agrees, as a material condition of the contract, that neither the Contractor nor any substantially owned or affiliated person, firm, partnership or corporation has participated, is participating, or shall participate in an international boycott in violation of the federal Export Administration Act of 1979 (50 USC App. Sections 2401 et seq.) or regulations thereunder. If such Contractor, or any of the aforesaid affiliates of Contractor, is convicted or is otherwise found to have violated said laws or regulations upon the final determination of the United States Commerce Department or any other appropriate agency of the United States subsequent to the contract's execution, such contract, amendment or modification thereto shall be rendered forfeit and void. The Contractor shall so notify the State Comptroller within five (5) business days of such conviction, determination or disposition of appeal (2 NYCRR 105.4).

9. **SET-OFF RIGHTS.** The State shall have all of its common law, equitable and statutory rights of set-off. These rights shall include, but not be limited to, the State's option to withhold for the purposes of set-off any moneys due to the Contractor under this contract up to any amounts due and owing to the State with regard to this contract, any other contract with any State department or agency, including any contract for a term commencing prior to the term of this contract, plus any amounts due and owing to the State for any other reason including, without limitation, tax delinquencies or monetary penalties relative thereto. The State shall exercise its set-off rights in accordance with normal State practices including, in cases of set-off pursuant to an audit, the finalization of such audit by the State, its representatives, or the State Comptroller.

10. **RECORDS.** The Contractor shall establish and maintain complete and accurate books, records, documents, accounts and other evidence directly pertinent to performance under this contract (hereinafter, collectively, "the Records"). The Records must be kept for the balance of the calendar year in which they were made and for six (6) additional years thereafter. The State Comptroller, the Attorney General and any other person or entity authorized to conduct an examination, as SUNY and its representatives and entities involved in this contract, shall have access to the Records during normal business hours at an office of the Contractor within the State of New York or, if no such office is available, at a mutually agreeable and reasonable venue within the State, for the term specified above for the purposes of inspection, auditing and copying. SUNY shall take reasonable steps to protect from public disclosure any of the Records which are exempt from disclosure under Section 87 of the Public Officers Law (the "Statute") provided that: (i) the Contractor shall timely inform an appropriate SUNY official, in writing, that said Records should not be disclosed; and (ii) said Records shall be sufficiently identified; and (iii) designation of said Records as exempt under the

Statute is reasonable. Nothing contained herein shall diminish, or in any way adversely affect, SUNY's or the State's right to discovery in any pending or future litigation.

11. IDENTIFYING INFORMATION AND PRIVACY NOTIFICATION.

Identification Number(s). Every invoice or New York State Claim for Payment submitted to the State University of New York by a payee, for payment for the sale of goods or services or for transactions (e.g., leases, easements, licenses, etc.) related to real or personal property must include the payee's identification number. The number is any or all of the following: (i) the payee's Federal employer identification number, (ii) the payee's Federal social security number, and/or (iii) the payee's Vendor Identification Number assigned by the Statewide Financial System. Failure to include such number or numbers may delay payment. Where the payee does not have such number or numbers, the payee, on its invoice or Claim for Payment, must give the reason or reasons why the payee does not have such number or numbers.

(b) Privacy Notification. (1) The authority to request the above personal information from a seller of goods or services or a lessor of real or personal property, and the authority to maintain such information, is found in Section 5 of the State Tax Law. Disclosure of this information by the seller or lessor to the State University of New York is mandatory. The principal purpose for which the information is collected is to enable the State to identify individuals, businesses and others who have been delinquent in filing tax returns or may have understated their tax liabilities and to generally identify persons affected by the taxes administered by the Commissioner of Taxation and Finance. The information will be used for tax administration purposes and for any other purpose authorized by law. (2) The personal information is requested by the purchasing unit of the State University of New York contracting to purchase the goods or services or lease the real or personal property covered by this contract or lease. The information is maintained in the Statewide Financial System by the Vendor Management Unit within the Bureau of State Expenditures, Office of the State Comptroller, 110 State Street, Albany, New York 12236.

12. EQUAL EMPLOYMENT OPPORTUNITIES FOR MINORITIES AND WOMEN.

(a) In accordance with Section 312 of the Executive Law and 5 NYCRR 143, if this contract is: (i) a written agreement or purchase order instrument, providing for a total expenditure in excess of \$25,000.00, whereby a contracting agency is committed to expend or does expend funds in return for labor, services, supplies, equipment, materials or any combination of the foregoing, to be performed for, or rendered or furnished to the contracting agency; or (ii) a written agreement in excess of \$100,000.00 whereby a contracting agency is committed to expend or does expend funds for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon; or (iii) a written agreement in excess of \$100,000.00 whereby the owner of a State assisted housing project is committed to expend or does expend funds for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon for such project, then the following shall apply and by signing this agreement the Contractor certifies and affirms that it is Contractor's equal employment opportunity policy that:

(1) The Contractor will not discriminate against employees or applicants for employment because of race, creed, color, national origin, sex, age, disability or marital status, and will undertake or continue existing programs of affirmative action to ensure that minority group members and women are afforded equal employment opportunities without discrimination. Affirmative action shall mean recruitment, employment, job assignment, promotion, upgradings, demotion, transfer, layoff,

or termination and rates of pay or other forms of compensation;

(2) at SUNY's request, Contractor shall request each employment agency, labor union, or authorized representative of workers with which it has a collective bargaining or other agreement or understanding, to furnish a written statement that such employment agency, labor union or representative will not discriminate on the basis of race, creed, color, national origin, sex, age, disability or marital status and that such union or representative will affirmatively cooperate in the implementation of the Contractor's obligations herein; and

(3) Contractor shall state, in all solicitations or advertisements for employees, that, in the performance of the State contract, all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status.

(b) Contractor will include the provisions of "1", "2" and "3", above, in every subcontract over \$25,000.00 for the construction, demolition, replacement, major repair, renovation, planning or design of real property and improvements thereon (the "Work") except where the Work is for the beneficial use of the Contractor. Section 312 does not apply to: (i) work, goods or services unrelated to this contract; or (ii) employment outside New York State. The State shall consider compliance by a Contractor or sub-contractor with the requirements of any federal law concerning equal employment opportunity which effectuates the purpose of this section. SUNY shall determine whether the imposition of the requirements of the provisions hereof duplicate or conflict with any such federal law and if such duplication or conflict exists, SUNY shall waive the applicability of Section 312 to the extent of such duplication or conflict. Contractor will comply with all duly promulgated and lawful rules and regulations of the Department of Economic Development's Division of Minority and Women's Business Development pertaining hereto.

13. **CONFLICTING TERMS.** In the event of a conflict between the terms of the contract (including any and all attachments thereto and amendments thereof) and the terms of this Exhibit A, the terms of this Exhibit A shall control.

14. **GOVERNING LAW.** This contract shall be governed by the laws of the State of New York except where the Federal supremacy clause requires otherwise.

15. **LATE PAYMENT.** Timeliness of payment and any interest to be paid to Contractor for late payment shall be governed by Article 11-A of the State Finance Law to the extent required by law.

16. **NO ARBITRATION.** Disputes involving this contract, including the breach or alleged breach thereof, may not be submitted to binding arbitration (except where statutorily authorized) but must, instead, be heard in a court of competent jurisdiction of the State of New York.

17. **SERVICE OF PROCESS.** In addition to the methods of service allowed by the State Civil Practice Law & Rules ("CPLR"), Contractor hereby consents to service of process upon it by registered or certified mail, return receipt requested. Service hereunder shall be complete upon Contractor's actual receipt of process or upon the State's receipt of the return thereof by the United States Postal Service as refused or undeliverable. Contractor must promptly notify the State, in writing, of each and every change of address to which service of process can be made. Service by the State to the last known address shall be sufficient. Contractor will have thirty (30) calendar days after service hereunder is complete in which to respond.

18. **PROHIBITION ON PURCHASE OF TROPICAL HARDWOODS.** The Contractor certifies and warrants that all wood products to be used under this contract award will be in

accordance with, but not limited to, the specifications and provisions of State Finance Law §165 (Use of Tropical Hardwoods), which prohibits purchase and use of tropical hardwoods, unless specifically exempted, by the State or any governmental agency or political subdivision or public benefit corporation. Qualification for an exemption under this law will be the responsibility of the contractor to establish to meet with the approval of the State. In addition, when any portion of this contract involving the use of woods, whether supply or installation, is to be performed by any subcontractor, the prime Contractor will indicate and certify in the submitted bid proposal that the subcontractor has been informed and is in compliance with specifications and provisions regarding use of tropical hardwoods as detailed in Section 165 of the State Finance Law. Any such use must meet with the approval of the State, otherwise, the bid may not be considered responsive. Under bidder certification, proof of qualification for exemption will be the responsibility of the Contractor to meet with the approval of the State.

19. **MacBRIDE FAIR EMPLOYMENT PRINCIPLES.** In accordance with the MacBride Fair Employment Principles (Chapter 807 of the Laws of 1992), the Contractor hereby stipulates that Contractor and any individual or legal entity in which the Contractor holds a ten percent or greater ownership interest and any individual or legal entity that holds a ten percent or greater ownership interest in the Contractor either (a) have no business operations in Northern Ireland, or (b) shall take lawful steps in good faith to conduct any business operations in Northern Ireland in accordance with the MacBride Fair Employment Principles (as described in Section 165(5) of the State Finance Law), and shall permit independent monitoring of compliance with such principles.

20. OMNIBUS PROCUREMENT ACT OF 1992.

It is the policy of New York State to maximize opportunities for the participation of New York State business enterprises, including minority and women-owned business enterprises as bidders, subcontractors and suppliers on its procurement contracts.

Information on the availability of New York State subcontractors and suppliers is available from:

NYS Department of Economic Development
Division for Small Business
30 South Pearl St., 7th Floor
Albany, NY 12245
Tel: 518-292-5220
Fax: 518-292-5884
<http://www.empire.state.ny.us>

A directory of certified minority and women-owned business enterprises is available from:

NYS Department of Economic Development
Division of Minority and Women's Business Development
30 South Pearl St., 7th Floor
Albany, NY 12245
Tel: 518-292-5250
Fax: 518-292-5803
<http://www.empire.state.ny.us>

The Omnibus Procurement Act of 1992 requires that by signing this bid proposal or contract, as applicable, Contractors certify that whenever the total bid amount is greater than \$1 million:

(a) The Contractor has made reasonable efforts to encourage the participation of New York State Business Enterprises as suppliers and subcontractors, including certified minority and women-owned business enterprises, on this project, and has retained the documentation of these efforts to be provided upon request to SUNY;

(b) The Contractor has complied with the Federal Equal Employment Opportunity Act of 1972 (P.L. 92-261), as amended;

(c) The Contractor agrees to make reasonable efforts to provide notification to New York State residents of employment opportunities

on this project through listing any such positions with the Job Search Division of the New York State Department of Labor, or providing such notification in such manner as is consistent with existing collective bargaining contracts or agreements. The contractor agrees to document these efforts and to provide said documentation to the State upon request; and

(d) The Contractor acknowledges notice that SUNY may seek to obtain offset credits from foreign countries as a result of this contract and agrees to cooperate with SUNY in these efforts.

21. RECIPROCITY AND SANCTIONS

PROVISIONS. Bidders are hereby notified that if their principal place of business is located in a country, nation, province, state or political subdivision that penalizes New York State vendors, and if the goods or services they offer will be substantially produced or performed outside New York State, the Omnibus Procurement Act of 1994 and 2000 amendments (Chapter 684 and Chapter 383, respectively) require that they be denied contracts which they would otherwise obtain. Contact the NYS Department of Economic Development, Division for Small Business, 30 South Pearl Street, Albany, New York 12245, for a current list of jurisdictions subject to this provision.

22. COMPLIANCE WITH NEW YORK STATE INFORMATION SECURITY BREACH AND NOTIFICATION ACT. Contractor shall comply with the provisions of the New York State

Information Security Breach and Notification Act (General Business Law Section 899-aa; State Technology Law Section 208).

23. COMPLIANCE WITH CONSULTANT DISCLOSURE LAW If this is a contract for consulting services, defined for purposes of this requirement to include analysis, evaluation, research, training, data processing, computer programming, engineering, environmental health and mental health services, accounting, auditing, paralegal, legal or similar services, then in accordance with Section 163(4-g) of the State Finance Law, the Contractor shall timely, accurately and properly comply with the requirement to submit an annual employment report for the contract to SUNY, the Department of Civil Service and the State Comptroller.

24. PURCHASES OF APPAREL AND SPORTS EQUIPMENT. In accordance with State Finance Law Section 165(7), SUNY may determine that a bidder on a contract for the purchase of apparel or sports equipment is not a responsible bidder as defined in State Finance Law Section 163 based on (a) the labor standards applicable to the manufacture of the apparel or sports equipment, including employee compensation, working conditions, employee rights to form unions and the use of child labor; or (b) bidder's failure to provide information sufficient for SUNY to determine the labor conditions applicable to the manufacture of the apparel or sports equipment.

25. PROCUREMENT LOBBYING. To the extent this agreement is a "procurement contract" as defined by State Finance Law Sections 139-j and 139-k, by signing this agreement the contractor certifies and affirms that all disclosures made in accordance with State Finance Law Sections 139-j and 139-k are complete, true and accurate. In the event such certification is found to be intentionally false or intentionally incomplete, the State may terminate the agreement by providing written notification to the Contractor in accordance with the terms of the agreement.

26. CERTIFICATION OF REGISTRATION TO COLLECT SALES AND COMPENSATING USE TAX BY CERTAIN STATE CONTRACTORS, AFFILIATES AND SUBCONTRACTORS. To the extent this agreement is a contract as defined by Tax Law Section 5-a, if the Contractor fails to make the certification required by Tax Law Section 5-a or if during the term of the contract, the Department of Taxation and Finance or SUNY discovers that the certification, made under penalty of perjury, is false, then such failure to file or false certification shall be a material breach of this contract and this contract may be terminated, by providing written notification to the Contractor in accordance with the terms of the agreement, if SUNY determines that such action is in the best interests of the State.

THE FOLLOWING PROVISIONS SHALL APPLY ONLY TO THOSE CONTRACTS TO WHICH A HOSPITAL OR OTHER HEALTH SERVICE FACILITY IS A PARTY

27. Notwithstanding any other provision in this contract, the hospital or other health service facility remains responsible for insuring that any service provided pursuant to this contract complies with all pertinent provisions of Federal, state and local statutes, rules and regulations. In the foregoing sentence, the word "service" shall be construed to refer to the health care service rendered by the hospital or other health service facility.

28. (a) In accordance with the 1980 Omnibus Reconciliation Act (Public Law 96-499), Contractor hereby agrees that until the expiration of four years after the furnishing of services under this agreement, Contractor shall make available upon written request to the Secretary of Health and Human Services, or upon request, to the Comptroller General of the United States or any of their duly authorized representatives, copies of this contract, books, documents and records of the Contractor that are necessary to certify the nature and extent of the costs hereunder.

(b) If Contractor carries out any of the duties of the contract hereunder, through a subcontract having a value or cost of \$10,000 or more over a twelve-month period, such subcontract shall contain a clause to the effect that, until the expiration of four years after the furnishing of such services pursuant to such subcontract, the subcontractor shall make available upon written request to the Secretary of Health and Human Services or upon request to the Comptroller General of the United States, or any of their duly authorized representatives, copies of the subcontract and books, documents and records of the subcontractor that are necessary to verify the nature and extent of the costs of such subcontract.

(c) The provisions of this section shall apply only to such contracts as are within the definition established by the Health Care Financing Administration, as may be amended or modified from time to time.

1. DEFINITIONS. The following terms shall be defined in accordance with Section 310 of the Executive Law:

STATE CONTRACT herein referred to as "State Contract", shall mean: (a) a written agreement or purchase order instrument, providing for a total expenditure in excess of twenty-five thousand dollars (\$25,000.00), whereby the State University of New York ("University") is committed to expend or does expend funds in return for labor, services including but not limited to legal, financial and other professional services, supplies, equipment, materials or a combination of the foregoing, to be performed for, or rendered or furnished to the University; (b) a written agreement in excess of one hundred thousand dollars (\$100,000.00) whereby the University is committed to expend or does expend funds for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon; and (c) a written agreement in excess of one hundred thousand dollars (\$100,000.00) whereby the University as an owner of a state assisted housing project is committed to expend or does expend funds for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon for such project.

SUBCONTRACT herein referred to as "Subcontract", shall mean any agreement providing for a total expenditure in excess of \$25,000 for construction, demolition, replacement, major repair, renovation, planning or design of real property and improvements thereon between a Contractor and any individual, partnership, corporation, or not-for-profit corporation, in which a portion of a Contractor's obligation under a State Contract is undertaken or assumed, but shall not include any construction, demolition, replacement, major repair, renovation, planning or design of real property and improvements thereon for the beneficial use of Contractor.

WOMEN-OWNED BUSINESS ENTERPRISE herein referred to as "WBE", shall mean a business enterprise, including a sole proprietorship, partnership or corporation that is: (a) at least fifty-one percent (51%) owned by one or more United States citizens or permanent resident aliens who are women; (b) an enterprise in which the ownership interest of such women is real, substantial and continuing; (c) an enterprise in which such women ownership has and exercises the authority to control independently the day-to-day business decisions of the enterprise; (d) an enterprise authorized to do business in this state and independently owned and operated; (e) an enterprise owned by an individual or individuals, whose ownership, control and operation are relied upon for certification, with a personal net worth that does not exceed three million five hundred thousand dollars (\$3,500,000), as adjusted annually on the first of January for inflation according to the consumer price index of the previous year; and (f) an enterprise that is a

small business pursuant to subdivision twenty of this section.

A firm owned by a minority group member who is also a woman may be certified as a minority-owned business enterprise, a women-owned business enterprise, or both, and may be counted towards either a minority-owned business enterprise goal or a women-owned business enterprise goal, in regard to any Contract or any goal, set by an agency or authority, but such participation may not be counted towards both such goals. Such an enterprise's participation in a Contract may not be divided between the minority-owned business enterprise goal and the women-owned business enterprise goal.

MINORITY-OWNED BUSINESS ENTERPRISE herein referred to as "MBE", shall mean a business enterprise, including a sole proprietorship, partnership or corporation that is: (a) at least fifty-one percent (51%) owned by one or more minority group members; (b) an enterprise in which such minority ownership is real, substantial and continuing; (c) an enterprise in which such minority ownership has and exercises the authority to control independently the day-to-day business decisions of the enterprise; (d) an enterprise authorized to do business in this state and independently owned and operated; (e) an enterprise owned by an individual or individuals, whose ownership, control and operation are relied upon for certification, with a personal net worth that does not exceed three million five hundred thousand dollars (\$3,500,000.00), as adjusted annually on the first of January for inflation according to the consumer price index of the previous year; and (f) an enterprise that is a small business pursuant to subdivision twenty of this section.

MINORITY GROUP MEMBER shall mean a United States citizen or permanent resident alien who is and can demonstrate membership in one of the following groups: (a) Black persons having origins in any of the Black African racial groups; (b) Hispanic persons of Mexican, Puerto Rican, Dominican, Cuban, Central or South American of either Indian or Hispanic origin, regardless of race; (c) Native American or Alaskan native persons having origins in any of the original peoples of North America. (d) Asian and Pacific Islander persons having origins in any of the Far East countries, South East Asia, the Indian Subcontinent or Pacific Islands.

CERTIFIED ENTERPRISE OR BUSINESS shall mean a business verified as a minority or women-owned business enterprise pursuant to section 314 of the Executive Law. A business enterprise which has been approved by the New York Division of Minority & Women Business Development ("DMWBD") for minority or women-owned enterprise status subsequent to verification that the business enterprise is owned, operated, and controlled by minority group members or women, and that also meets the financial requirements set forth in the regulations.

2. TERMS. The parties to the attached State Contract agree to be bound by the following provisions which are made a part hereof (the

word "Contractor" herein refers to any party other than the University:

1(a) Contractor and its Subcontractors shall undertake or continue existing programs of affirmative action to ensure that minority group members and women are afforded equal employment opportunities without discrimination. For these purposes, affirmative action shall apply in the areas of recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff, or termination and rates of pay or other forms of compensation.

(b) Prior to the award of a State Contract, the Contractor shall submit an equal employment opportunity (EEO) policy statement to the University within the time frame established by the University.

(c) As part of the Contractor's EEO policy statement, the Contractor, as a precondition to entering into a valid and binding State Contract, shall agree to the following in the performance of the State Contract: (i) The Contractor will not discriminate against any employee or applicant for employment, will undertake or continue existing programs of affirmative action to ensure that minority group members and women are afforded equal employment opportunities without discrimination, and shall make and document its conscientious and active efforts to employ and utilize minority group members and women in its work force on State Contracts; (ii) The Contractor shall state in all solicitations or advertisements for employees that, in the performance of the State Contract, all qualified applicants will be afforded equal employment opportunities without discrimination; (iii) At the request of the University the Contractor shall request each employment agency, labor union, or authorized representative of workers with which it has a collective bargaining or other agreement or understanding, to furnish a written statement that such employment agency, labor union, or representative will not discriminate, and that such union or representative will affirmatively cooperate in the implementation of the Contractor's obligations herein.

(d) Except for construction contracts, prior to an award of a State Contract, the Contractor shall submit to the contracting agency a staffing plan of the anticipated work force to be utilized on the State Contract or, where required, information on the Contractor's total work force, including apprentices, broken down by specified ethnic background, gender, and Federal occupational categories or other appropriate categories specified by the contracting agency. The form of the staffing plan shall be supplied by the contracting agency. If Contractor fails to provide a staffing plan, or in the alternative, a description of its entire work force, the University may reject Contractor's bid, unless Contractor either commits to provide such information at a later date or provides a reasonable justification in writing for its failure to provide the same.

(e) After an award of a State Contract, the Contractor shall submit to the University a workforce utilization report, in a form and manner required by the agency, of the work force actually utilized on the State Contract,

broken down by specified ethnic background, gender, and Federal occupational categories or other appropriate categories specified by the University.

(f) The Contractor shall include the provisions of this section in every Subcontract in such a manner that the requirements of the provisions will be binding upon each Subcontractor as to work in connection with the State Contract, including the requirement that Subcontractors shall undertake or continue existing programs of affirmative action to ensure that minority group members and women are afforded equal employment opportunities without discrimination, and, when requested, provide to the Contractor information on the ethnic background, gender, and Federal occupational categories of the employees to be utilized on the State Contract.

(g) To ensure compliance with the requirements of this paragraph, the University shall inquire of a Contractor whether the work force to be utilized in the performance of the State Contract can be separated out from the Contractor's and/or Subcontractors' total work force and where the work of the State Contract is to be performed. For Contractors who are unable to separate the portion of their work force which will be utilized for the performance of this State Contract, Contractor shall provide reports describing its entire work force by the specified ethnic background, gender, and Federal Occupational Categories, or other appropriate categories which the agency may specify.

(h) The University may require the Contractor and any Subcontractor to submit compliance reports, pursuant to the regulations relating to their operations and implementation of their affirmative action or equal employment opportunity program in effect as of the date the State Contract is executed.

(i) If a Contractor or Subcontractor does not have an existing affirmative action program, the University may provide to the Contractor or Subcontractor a model plan of an affirmative action program. Upon request, the Director of DMWBD shall provide a contracting agency with a model plan of an affirmative action program.

(j) Upon request, DMWBD shall provide the University with information on specific recruitment sources for minority group members and woman, and contracting agencies shall make such information available to Contractors

2. Contractor must provide the names, addresses and federal identification numbers of certified minority- and women-owned business enterprises which the Contractor intends to use to perform the State Contract and a description of the Contract scope of work which the Contractor intends to structure to increase the participation by Certified minority- and/or women-owned business enterprises on the State Contract, and the estimated or, if known, actual dollar amounts to be paid to and performance dates of each component of a State Contract which the Contractor intends to be performed by a certified minority- or woman-owned business enterprise. In the event the Contractor responding to University solicitation is joint venture, teaming agreement, or other similar arrangement that includes a minority- and women owned business enterprise, the Contractor must submit for review and approval: i. the name, address, telephone number and federal identification of each partner or party to the agreement; ii. the

federal identification number of the joint venture or entity established to respond to the solicitation, if applicable; iii. A copy of the joint venture, teaming or other similar arrangement which describes the percentage of interest owned by each party to the agreement and the value added by each party; iv. A copy of the mentor-protégé agreement between the parties, if applicable, and if not described in the joint venture, teaming agreement, or other similar arrangement.

3. PARTICIPATION BY MINORITY GROUP MEMBERS AND WOMEN. The University shall determine whether Contractor has made conscientious and active efforts to employ and utilize minority group members and women to perform this State Contract based upon an analysis of the following factors:

(a) Whether Contractor established and maintained a current list of recruitment sources for minority group members and women, and whether Contractor provided written notification to such recruitment sources that contractor had employment opportunities at the time such opportunities became available.

(b) Whether Contractor sent letters to recruiting sources, labor unions, or authorized representatives of workers with which contractor has a collective bargaining or other agreement or understanding requesting assistance in locating minority group members and women for employment.

(c) Whether Contractor disseminated its EEO policy by including it in any advertising in the news media, and in particular, in minority and women news media.

(d) Whether Contractor has attempted to provide information concerning its EEO policy to Subcontractors with which it does business or had anticipated doing business.

(e) Whether internal procedures exist for, at a minimum, annual dissemination of the EEO policy to employees, specifically to employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions. Such dissemination may occur through distribution of employee policy manuals and handbooks, annual reports, staff meetings and public postings.

(f) Whether Contractor encourages and utilizes minority group members and women employees to assist in recruiting other employees.

(g) Whether Contractor has apprentice training programs approved by the N.Y.S. Department of Labor which provides for training and hiring of minority group members and women.

(h) Whether the terms of this section have been incorporated into each Subcontract which is entered into by the Contractor.

4. PARTICIPATION BY MINORITY AND WOMEN-OWNED BUSINESS ENTERPRISES. Based upon an analysis of the following factors, the University shall determine whether Contractor has made good faith efforts to provide for meaningful participation by minority-owned and women-owned business enterprises which have been certified by DMWBD:

(a) Whether Contractor has actively solicited bids for Subcontracts from qualified M/WBEs, including those firms listed on the Directory of Certified Minority and Women-Owned Business Enterprises, and has documented its good faith efforts towards

meeting minority and women owned business enterprise utilization plans by providing, copies of solicitations, copies of any advertisements for participation by certified minority- and women-owned business enterprises timely published in appropriate general circulation, trade and minority- or women-oriented publications, together with the listing(s) and date(s) of the publications of such advertisements; dates of attendance at any pre-bid, pre-award, or other meetings, if any, scheduled by the University, with certified minority- and women-owned business enterprises, and the reasons why any such firm was not selected to participate on the project.

(b) Whether Contractor has attempted to make project plans and specifications available to firms who are not members of associations with plan rooms and reduce fees for firms who are disadvantaged.

(c) Whether Contractor has utilized the services of organizations which provide technical assistance in connection with M/WBE participation.

(d) Whether Contractor has structured its Subcontracts so that opportunities exist to complete smaller portions of work.

(e) Whether Contractor has encouraged the formation of joint ventures, partnerships, or other similar arrangements among Subcontractors.

(f) Whether Contractor has requested the services of the Department of Economic Development (DED) to assist Subcontractors' efforts to satisfy bonding requirement.

(g) Whether Contractor has made progress payments promptly to its Subcontractors.

(h) Whether the terms of this section have been incorporated into each Subcontract which is entered into by the Contractor. It shall be the responsibility of Contractor to ensure compliance by every Subcontractor with these provisions.

5. GOALS. (a) GOALS FOR MINORITY AND WOMEN WORK FORCE PARTICIPATION.

(i) The University shall include relevant work force availability data, which is provided by the DMWBD, in all documents which solicit bids for State Contracts and shall make efforts to assist Contractors in utilizing such data to determine expected levels of participation for minority group members and women on State Contracts.

(ii) Contractor shall exert good faith efforts to achieve such goals for minority and women's participation. To successfully achieve such goals, the employment of minority group members and women by Contractor must be substantially uniform during the entire term of this State Contract. In addition, Contractor should not participate in the transfer of employees from one employer or project to another for the sole purpose of achieving goals for minority and women's participation.

(b) **GOALS FOR MINORITY AND WOMEN-OWNED BUSINESS ENTERPRISES PARTICIPATION.** For all State Contracts in excess of \$25,000.00 whereby the University is committed to expend or does expend funds in return for labor, services including but not limited to legal, financial and other professional services, supplies, equipment, materials or a combination of the foregoing or all State Contracts in excess of

\$100,000.00 whereby the University is committed to expend or does expend funds for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon, Contractor shall exert good faith efforts to achieve a participation goal of twenty percent (20%) for Certified Minority-Owned Business Enterprises and ten percent (10%) for Certified Women-Owned Business Enterprises.

6. ENFORCEMENT. The University will be responsible for enforcement of each Contractor's compliance with these provisions. Contractor, and each Subcontractor, shall permit the University access to its books, records and accounts for the purpose of investigating and determining whether Contractor or Subcontractor is in compliance with the requirements of Article 15-A of the Executive Law. If the University determines that a Contractor or Subcontractor may not be in compliance with these provisions, the

University may make every reasonable effort to resolve the issue and assist the Contractor or Subcontractor in its efforts to comply with these provisions. If the University is unable to resolve the issue of noncompliance, the University may file a complaint with the DMWBD.

7. DAMAGES FOR NON COMPLIANCE.

Where the University determines that Contractor is not in compliance with the requirements of the Contract and Contractor refuses to comply with such requirements, or if Contractor is found to have willfully and intentionally failed to comply with the MWBE participation goals, Contractor shall be obligated to pay to liquidated damages to the University. Such liquidated damages shall be calculated as an amount equaling the difference between:

a. All sums identified for payment to MWBEs had the Contractor achieved the contractual MWBE goals; and

b. All sums actually paid to MWBEs for work performed or materials supplied under the Contract.

In the event a determination has been made which requires the payment of liquidated damages and such identified sums have not been withheld by the University, Contractor shall pay such liquidated damages to the University within sixty (60) days after such damages are assessed, unless prior to the expiration of such sixtieth day, the Contractor has filed a complaint with the Director of the Division of Minority and Woman Business Development pursuant to Subdivision 8 of Section 313 of the Executive Law in which event the liquidated damages shall be payable if Director renders a decision in favor of the University.



STATE UNIVERSITY OF NEW YORK LABOR AND MATERIAL BOND

KNOW ALL PERSONS BY THESE PRESENTS, that _____

(hereinafter called the "Principal") and _____

(hereinafter called the "Surety") are held and firmly bound to the State University of New York (hereinafter called the "University") in the full and just sum of:

_____ dollars (\$ _____)
(in words) (in figures)

good and lawful money of the United States of America, for the payment of which sum of money, well and truly to be made and done, the Principal binds itself, its heirs, executors, administrators, successors and assigns and the Surety binds itself, its successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written Contract bearing date on the _____ day of _____, 19_____, with the "University" for the work contained in Project No. _____, a copy of which Contract is annexed to and hereby made a part of this Bond as though herein set forth in full; and

WHEREAS, the "University" has required this Bond guaranteeing prompt payment of monies due to all persons furnishing the Principal or any subcontractor of the Principal with labor or materials in the prosecution of the work provided in such Contract;

NOW, THEREFORE, the conditions of this obligation are such that if the Principal shall promptly pay all monies due to all persons furnishing the Principal or any subcontractor of the Principal with labor or materials in the prosecution of the Contract, then this obligation shall be null and void, otherwise to remain in full force and effect.

PROVIDED, HOWEVER, the said Surety, for value received, hereby stipulates and agrees that no change, extension, alteration or addition to the terms of the said Contract or Specifications accompanying the same, shall in any way affect its obligations under this Bond, and it does hereby waive notice of any such change, extension, alteration or addition; and further.

PROVIDED, HOWEVER, the place of trial of any action on this Bond shall be in the county in which the said Contract was to be performed, or if said Contract was to be performed in more than one county, then in any such county, and not elsewhere; and further

PROVIDED, HOWEVER, this Bond shall be enforceable in accordance with the terms and provisions of Section 137 of the State Finance Law.

IN WITNESS WHEREOF, the Principal has hereunto set its hand and seal and the Surety has caused this instrument to be signed by its attorney-in-fact and its corporate seal to be hereto affixed this _____ day of _____, 19_____

Principal By _____
If Corporation,
affix Corporate
Seal

Surety By _____
If Corporation,
affix Corporate
Seal



STATE UNIVERSITY OF NEW YORK PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS, that _____

(hereinafter called the "Principal") and _____

(hereinafter called the "Surety") are held and firmly bound to the State University of New York (hereinafter called the "University") in the full and just sum of:

_____ dollars (\$ _____)
(in words) (in figures)

good and lawful money of the United States of America, for the payment of which sum of money, well and truly to be made and done, the Principal binds itself, its heirs, executors, administrators, successors and assigns and the Surety binds itself, its successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written Contract bearing date on the _____ day of _____, 19_____, with the "University" for the work contained in Project No. _____, a copy of which Contract is annexed to and hereby made a part of this Bond as though herein set forth in full; and

NOW, THEREFORE, the conditions of this obligation are such that if the Principal, its representatives or assigns, shall well and faithfully comply with and perform all the terms, covenants and conditions of said Contract on its part to be kept and performed and all modifications, amendments, additions and alterations thereto that may hereafter be made, according to the true intent and meaning of said Contract, including repair and/or replacement of defective work and guarantees of maintenance for the periods stated in the Contract, and shall fully indemnify and save harmless the "University" from all cost and damage which it may suffer by reason of failure to do so, and shall fully reimburse and repay the "University" for all outlay and expense which the "University" may incur in making good any such default, and shall protect the said "University" against, and pay any and all amounts, damages, costs and judgments which may or shall be recovered against said "University" or its trustees, officers, agents or employees or which the said "University" may be called upon to pay to any person or corporation by reason of any damages arising or growing out of the doing of said work, or the repair of maintenance thereof, or the manner of doing the same, or the neglect of the said Principal, or its agents, or the improper performance of the said work by the said Principal, or its agents, or the infringement of any patent or patent rights by reason of the use of any materials furnished or work done as aforesaid or otherwise, then this obligation shall be null and void, otherwise to remain in full force and effect;

PROVIDED, HOWEVER, the said Surety, for value received, hereby stipulates and agrees, if requested to do so by the "University," to fully perform and complete the work mentioned and described in said Contract, pursuant to the terms, conditions, and covenants thereof, if for any cause the Principal fails or neglects to so fully perform and complete such work and the Surety further agrees to commence such work of completion within ten (10) calendar days after written notice thereof from the "University" and to complete such work within ten (10) calendar days from the expiration of the time allowed the Principal in the Contract for the completion thereof; and further

PROVIDED, HOWEVER, the Surety, for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligation of said Surety and its Bond shall be in no way impaired or affected by an extension of time, modification, omission, addition, or change in or to the said Contract or the work to be performed thereunder, or by any payment thereunder before the time required therein, or by any waiver of any provisions thereof, or by any assignment, subletting or other transfer of any work to be performed or any monies due or to become due thereunder or by the "University's" takeover, use, occupancy or operation of any part or all of the work covered by the Contract; and said Surety does hereby waive notice of any and all of such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts, transfers, takeovers, uses, occupancies or operations, and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to assignees, subcontractors, and other transferees shall have the same effect as to said Surety as though done or omitted to be done by or in relation to said Principal.

IN WITNESS WHEREOF, the Principal has hereunto set its hand and seal and the Surety has caused this instrument to be signed by its attorney-in-fact and its corporate seal to be hereto affixed this _____ day of _____, 19_____

Principal By _____
If Corporation,
affix Corporate
Seal

Surety By _____
If Corporation,
affix Corporate
Seal

ACKNOWLEDGMENTS FOR LABOR AND MATERIAL BOND AND PERFORMANCE BOND

(Acknowledgment by Principal, unless it be a Corporation)

STATE OF NEW YORK)
) ss.:
COUNTY OF)

On this _____ day of _____, 19 _____, before me personally came _____

_____, to me known and known to me to be the person(s) described
in and who executed the foregoing instruments and acknowledged that he / she executed the same.

Notary Public

(Acknowledgment by Principal, if a Corporation)

STATE OF NEW YORK)
) ss.:
COUNTY OF)

On this _____ day of _____, 19 _____, before me personally came _____

_____, to me known, who, being duly sworn, did depose

and say that he / she resides in _____;

that he / she is the _____

of the _____,
the corporation described in and which executed the foregoing instruments; that he / she knows the seal of said
corporation; that the seal affixed to said instruments is such corporate seal; that it was so affixed by order of the Board of
Directors of said corporation and that he / she signed their name thereto by like order.

Notary Public

(Acknowledgment by Surety Company)

STATE OF)
) ss.:
COUNTY OF)

On this _____ day of _____, 19 _____, before me personally came _____

_____, to me known, who, being by me duly sworn, did depose

and say that he / she resides in _____;

that he / she is the _____

of the _____,
the corporation described in and which executed the foregoing instruments; that he / she knows the seal of said
corporation; that the seal affixed to said instruments is such corporate seal; that it was so affixed by the order of the
Board of Directors of said corporation, and that he / she signed their name thereto by like order; and that the liabilities of
said company do not exceed its assets as ascertained in the manner provided by the laws of the State of New York.

Notary Public

FORM B
Affirmation with respect to State Finance Law §§139-j and 139-k

A complete copy of the State University of New York Procurement Lobbying Policy and Procedure is available for review at www.suny.edu/sunypp/.

Procurement Description/ID No.

Offerer **AFFIRMS** that it has reviewed and understands the Policy and Procedure of the State University of New York, relating to State Finance Law §§139-j and 139-k, and agrees to comply with State University's procedure relating to Contacts with respect to this procurement.

Name of Offerer:
Address:
Person Submitting Form:
Name:
Title:

FORM C**Disclosure and Certification with respect to State Finance Law §§139-j and 139-k**

Procurement Description/ID No. _____

1. Has a Governmental Entity, as defined in State Finance Law §139-j(1)(a), made a determination of non-responsibility with respect to the Offerer within the previous four years where such finding was due to a violation of State Finance Law §139-j or the intentional provision of false or incomplete information with respect to previous determinations of non-responsibility?

No ____
Yes ____

If yes, provide the following details:

Governmental Entity which made the finding:

Date of finding:

Basis of finding:

2. Has a Governmental Entity terminated or withheld a procurement contract with the Offer because of violations of State Finance Law §139-j or the intentional provision of false or incomplete information with respect to previous determinations of non-responsibility?

No ____
Yes ____

If yes, identify the following:

Governmental Entity which terminated the contract:

Date of contract termination or withholding:

Identify the related procurement contract:

Offerer **CERTIFIES** that all information provided by Offerer with respect to its compliance with State Finance Law §§139-j and 139-k is complete, true and accurate.

Name of Offerer:

Address:

Signature of Person Submitting Form: _____

Name:
Title:
Date:

Division 1 - General Requirements
SECTION A - Description of Work

1. Work to be Done

The work to be done under the Contract, in accordance with the Contract Documents, consists of performing, installing, furnishing and supplying all materials, equipment, labor and incidentals necessary or convenient for the construction of Project Number **SU-081512** titled **Residence Halls LTHW Piping Replacement C&D Wing** and carry out all of the duties and obligations imposed upon the Contractor by the Contract Documents.

The Contractor shall provide labor and materials required to accomplish the work associated with the removal, furnishing and installation of equipment and mechanical systems as indicated herein and on the Contract Drawings. The Contractor shall furnish and install all components necessary for the installation of mechanical equipment to result in a complete operational system by **October 31st, 2012**.

2. Work Not Included:

Work not included in the work of the Contract are those items marked "N.I.C"; movable furnishings, except those specifically specified or indicated on the Drawings; and items marked "by others".

SECTION B - Alternates

1. General

- a. Refer to Proposal Form. State thereon the amount to be added to or deducted from the Total Bid for the Alternates described herein.
- b. Extent and details of the Alternates are indicated on the Drawings, and described in the Specifications.
- c. Where reference is made in the description of the Alternate to products, materials, or workmanship, the specification requirements applicable to similar products, materials or workmanship in the Total Bid shall govern the products, materials, and workmanship of the Alternate as if these specification requirements were included in full in the description of the Alternates.

2. Alternates

None

SECTION C - Special Conditions

1. Cutting and Patching

- a. The Contractor shall do all cutting, fitting, and patching of its work that may be required to make its several parts come together properly and fitted as shown upon or reasonably implied from the Drawings and Specifications for the completed project.
- b. Any cost caused by defective or ill-timed work shall be borne by the Contractor. Except as otherwise expressly provided in the Contract Documents, the Contractor shall not cut or alter the work of any other Contractor or existing work without the consent of the University.
- c. Existing construction, finishes, equipment, wiring, etc., that is to remain and which is damaged or defaced by reason of work done under this contract shall be restored by the Contractor to a condition satisfactory to the University, or replaced with new, at no additional cost.

- d. Existing surfaces, materials, and work shall be prepared as necessary to receive the new installations. Such preparatory work shall be as required by the conditions and in each case shall be subject to approval by the University.
- e. Newly exposed work or surfaces which are presently concealed shall be made to match existing corresponding or adjoining new surfaces as directed, and the materials and methods to be employed shall be subject to approval by the University.
- f. All new, altered, or restored work in the building shall match existing corresponding work in the material, construction finish, etc., unless otherwise specified or required by the drawings.

2. Clean-Up

- a. Periodic Cleaning: The Contractor shall at all times during the progress of the work keep the Site free from accumulation of waste matter or rubbish and shall confine its apparatus, materials and operations of its workmen to limits prescribed by law or by the Contract Limit Lines, except as the latter may be extended with the approval of the University. Cleaning of the structure(s), once enclosed, must be performed daily and removal of waste matter or rubbish must be performed at least once a week.
- b. Final Clean Up: Upon completion of the work covered by the Contract, the Contractor shall leave the completed project ready for use without the need of further cleaning of any kind and with all work in new condition and perfect order. In addition, upon completion of all work, the Contractor shall remove from the vicinity of the work and from the property owned or occupied by the State of New York, the State University of New York or the University, all plant, buildings, rubbish, unused materials, concrete forms and other materials belonging to it or used under its direction during construction or impairing the use or appearance of the property and shall restore such areas affected by the work to their original condition, and, in the event of its failure to do so, the same shall be removed by the University at the expense of the Contractor, and it and its surety shall be liable therefor.

3. Temporary Access and Parking

See Supplemental Special Conditions for Construction.

4. Field Meetings

Periodic job meetings will be scheduled by the Consultant and the University during the course of construction. The Contractor, and, upon request of the Consultant and the University, its principal subcontractors and manufacturer's representatives, shall attend such meetings and be prepared to furnish answers to questions on progress, workmanship, or any other subject on which the Consultant and the University might reasonably require information.

5. Operating Instructions and Manuals

The Contractor shall furnish three (3) complete sets of operating instructions and manuals which shall include definite and specific instructions on all mechanical and electrical systems involved in the Project. Said instructions and manuals should set forth: (1) the manner of operation; (2) the necessary precautions and care to be followed; (3) periodic prevention maintenance requirements; and (4) a complete set of spare parts lists, catalogs, service manuals and manufacturing data on said systems. Said instructions and manuals are to be made available by the Contractor for review and comment by the University a minimum of six (6) weeks prior to the scheduled completion of the Project.

6. Utility Shutdowns and Cut Overs

- a. Except as otherwise expressly provided in the Contract Documents, the Contractor shall be responsible for submitting to the University, for its approval, a proposed schedule of all utility shutdowns and Cut-overs of all types which will be required to complete the Project; said schedule should contain a minimum of two (2) week's advance notice prior to the time of the proposed shutdown and cut over. Most campuses of the State University of New York are in full operation 12 months of the year, and shutdowns and Cut-overs, depending upon their type, generally must be scheduled on weekends, at night, or during holiday periods. The contract consideration is deemed to include all necessary overtime and all premium time, if any, that is required by the Contractor to complete the shutdowns or Cut-overs.
- b. Temporary Connections: In the event the Contractor shall disrupt any existing services, the Contractor shall immediately make temporary connection to place such service back into operation and maintain the temporary connection until the Contractor makes the permanent connection. All work must be acceptable to the University.

7. Temporary Power for Construction Activities

Electrical energy will be available at no cost to the Contractor from existing outlets or panels from locations approved by the College. This power may be used for small power tools (not exceeding 1/2 HP), etc., and the Contractor shall not exceed the capacity of the existing circuits being used. The Contractor shall be responsible for providing all necessary connections, cables, etc. and removal of the same at completion of construction with approval from the University. The Contractor shall in no way modify the existing circuits at the panel boards to increase capacities of the circuits. If the required power load exceeds the capacities of the available power sources, the Contractor shall be responsible and pay for furnishing and installing all necessary temporary power poles, cables, fused disconnect switches, transformers and electric meters necessary to provide a temporary power system for the project, and remove the same at completion. Install all temporary wiring and equipment and make all connections in conformity with the National Electrical Code. Make all replacements required by temporary use of the permanent wiring system. Provide ground fault protection.

8. Sanitary Facilities

The Contractor will be permitted to use existing toilet and janitor closet facilities as designated by the College provided the existing facilities are not misused, defaced, or left in an unsanitary condition. If the

University deems that the existing facilities have been subject to misuse or left unsanitary, the Contractor shall be informed and caused to install and maintain (at its own cost) temporary, sanitary facilities at approved locations. The Contractor shall also be held responsible for the cost of cleaning and repair of any damage to said existing facilities and adherence to health and sanitary codes of the State of New York.

9. Temporary Heat

- a. In those locations where it is required by the conditions of the work, the Contractor shall provide and pay for all temporary heating, coverings and enclosures necessary to properly protect all work and materials against damage by dampness and cold, dry out the work, and facilitate the completion thereof. Fuel, equipment, materials, operating personnel and the methods used therefor shall be at all times satisfactory to the University and adequate for the purpose intended. The Contractor shall maintain the critical installation temperatures, provided in the technical provisions of the specifications hereof, for all work in those areas where the same is being performed.
- b. Maintenance of proper heating, ventilation and adequate drying out of the work is the responsibility of the Contractor. Any work damaged by dampness, insufficient or abnormal heating shall be replaced to the satisfaction of the University by and at the sole cost and expense of the Contractor.
- c. The Contractor shall provide all necessary, temporary heating for the efficient and effective work by itself and all trades engaged in the work. Unless otherwise specified, the minimum temperature shall be 50 degrees F at all places where work is actually being performed within the project (where enclosed). Before and during the placing of wood finish and the application of other interior finishing, varnishing, painting, etc., and until final acceptance by the University of all work covered by the Contract, the Contractor shall, unless otherwise specified in the Contract Documents, provide sufficient heat to produce a temperature of not less than 68 degrees F nor more than 78 degrees F.

10. Temporary Light

The contractor shall install, maintain and remove Underwriter's Label temporary lighting sockets, light bulbs, and intermittent power sockets as approved by the University. The minimum temporary lighting to be provided is at the rate of 1/4 watt per square foot and be maintained for 24 hours, 7 days per week at stairs and exit corridors; in all other spaces, temporary lighting is to be maintained during working hours. Installation shall be in accordance with the National Electric Code.

11. Temporary Water for Construction Purposes

Water for construction is available through the campus system without charge to the Contractor from location designated by the College. The Contractor shall obtain the necessary permission, make all connections, as required, furnish and install all pipes and fittings, and remove the same at completion of work. The Contractor must provide for waste water discharge and shall take due care to prevent damage to existing structures or site and the waste of water. All pipes and fittings must be maintained in perfect condition at all times.

12. Conducting Work

- a. All work is to be conducted in such a manner as to cause a minimum degree of interference with the College's operation and academic schedule.
- b. Safe and direct entrance to and exiting from the existing buildings shall be maintained at all times during regular hours while construction is in progress.
- c. No construction work will start in any area until the Contractor has all the required materials on-site.

- d. The Contractor and its employees shall comply with College regulations governing conduct, access to the premises, and operation of equipment.
- e. The building shall not be left "open" overnight or during any period of inclement weather. Temporary weather tight closures shall be provided for/by the Contractor to protect the structure and its contents.

13. Safety and Protective Facilities

- a. The Contractor shall provide the necessary safeguards to prevent accidents, to avoid all necessary hazards and protect the public, the Staff, students, the work and property at all times, including Saturdays, Sundays, holidays and other times when no work is being done.
- b. The Contractor shall erect, maintain and remove appropriate barriers or other devices, including mechanical ventilation systems, as required by the conditions of the work for the protection of users of the project area, the protection of the work being done, or the containment of dust and debris. All such barriers or devices shall be provided in conformance with all applicable codes, laws and regulations, including OSHA and National Fire Prevention Association 241, for safeguarding of structures during construction.

14. Protection of Existing Structures, Vegetation and Utilities

The Contractor, during the course of its work, shall not damage any buildings, structures and utilities, public or private, including poles, signs, services to buildings, utilities in the street, gas pipes, water pipes, hydrants, sewers, drains and electric power and lighting and telephone cables, lawns, curbs, plants and other improvements. Any damage resulting from the Contractor's operations shall be repaired or replaced at its expense.

15. Abbreviations and References

The following abbreviations may be used in these Specifications:

N.A.	Not Applicable
N.I.C	Not in Contract.
Fed. Spec. or F.S.	Federal Specifications
SUCF	State University Construction Fund
University or SUNY	State University of New York
College	A Campus of the State University of New York

16. Use of Elevators

The Contractor shall be permitted to make temporary use of elevators designated by the University and provided such use does not interfere with the normal activities of the College. Large and heavy items shall not be placed in elevators, and suitable padding shall be provided whenever a cab is used for construction purposes. Elevator pits shall be kept free of debris and dust by frequent cleaning out. The elevators shall be restored to original condition satisfactory to the University at the end of construction activities. Use of the top of the elevator may be permitted after obtaining approval of the University.

17. Salvage of Materials

Remove and legally dispose of all debris and other materials resulting from the alterations to State University property. The following items shall remain the property of the University and shall be stored at the site as directed by the University:

18. Storage of Materials

- a. The Contractor shall store materials and equipment within the contract limits in areas on the

site as designated by the University.

- b. All materials shall be stored in a neat and orderly manner, and shall be protected against the weather by raised floored weatherproof temporary storage facility or trailer.
- c. Security for stored materials shall be the responsibility of the Contractor.
- d. Storage of materials is not permitted on the roof of any building.

19. Shop Drawings and Samples - (Refer to Section 2.19 of the Agreement)

- a. The Contractor shall submit to the University for its approval five (5) sets of prints of all shop drawings required by the specifications. Those marked:

"REJECTED" are not in accordance with the Contract Documents and shall be resubmitted.

"REVISE AND RESUBMIT" Contractor shall correct and resubmit.

"MAKE CORRECTIONS NOTED": The contractor shall comply with corrections and may proceed. Resubmittal is not required.

"APPROVED - NO EXCEPTIONS TAKEN": The contractor may proceed.

- b. All shop drawings and/or submittals used on the construction site must bear the impression of the consultant's review stamp as well as the General Contractor's review stamp, indicating the status of review and the date of review.
- c. All shop drawings shall reflect actual site conditions and accurate field dimensions. Dimensioned shop drawings shall be submitted for all fabricated items. Incomplete submittals will be rejected without review.
- d. All shop drawings, submittals and samples shall include:
 - 1). Date and revision dates.
 - 2). Project title and number.
 - 3). Names of:
 - a). Contractor
 - b). Subcontractor
 - c). Supplier
 - d). Manufacturer
 - 4). Identification of products or materials: Include Department of State (DOS) file number, manufacturers' name and market name of all covered products and applicable materials in accordance with Part 1120 of the Code. This information may be obtained by contacting the DOS, Office of Fire Prevention and Control: 518-474-6746 [voice] and 518- 474-3240 [FAX]

20. U.S. Steel

All structural steel, reinforcing steel, or other major steel items to be incorporated in the work shall, if this Contract is in excess of \$100,000, be produced or made in whole or substantial part in the United States, its territories or possessions.

21. Non-Asbestos Products

- a. All materials specified herein shall contain no asbestos.
- b. Provide "Contains No Asbestos" permanent labels applied to the exterior jacket of all pipe insulation at 20 foot intervals with a minimum of one (1) label for each service in each work area.

22. Material Safety Data Sheet

The contractor shall submit MSDS (Material Safety Data Sheet) for all chemicals, solvents, and materials specified or proposed to be used on this project.

23. Architect's/Engineer's Seal

In accordance with Rules and Regulations of the New York State Education Law, Title 8, Part 69.5(b), to all plans, specifications and reports to which the seal of an architect has been applied, there shall also be applied a stamp with appropriate wording warning that it is a violation of the law for any person, unless acting under the direction of a licensed architect, to alter an item in any way. If an item bearing the seal of an architect is altered, the altering architect shall affix to his item the seal and the notation "altered by" followed by his signature and the date of such alteration, and a specific description of the alteration.

24. Construction Permit

The Code Compliance Manager for the State University Campus will, as required by law, issue a Construction Permit for this Project. The project is not subject to any local building code or permit requirements, except for work that the Contractor is to perform on property located outside of the boundaries of the campuses of the State University of New York.

25. Other Contracts

There may be other contracts let for work to be done in adjacent areas and, as such, this Contractor and such other contractors shall coordinate their work to conform with progressive operation of all the work covered by such contracts, and afford each other reasonable opportunities for the introduction and storage of their supplies, materials, equipment, and the execution of their work.

26. Asbestos

If the work to be done under this contract contains the abatement of asbestos the following shall apply:

- a. Applicable Regulations -All work to be done under this Contract shall be in compliance with Part 56 of Title 12 of the Official Compilation of Codes, Rules and Regulations of the State of New York (cited as 12 NYCRR Part 56) as amended effective November 9, 1994.
- b. Applicable Variance - The abatement contractor is responsible for obtaining any variance not issued to date that he feels may be applicable to the policies/procedures as set forth in 12 NYCRR Part 56.
- c. Owner Project Fact Sheet -The Contractor shall complete and submit as much information as possible on the Asbestos Material Fact Sheet to the University in triplicate prior to the project startup. Completion of the Fact Sheet shall be submitted prior to acceptance.
- d. Patent Infringement - The State University of New York and the State University Construction Fund have been given notice by a law firm representing GPAC, Inc. that the use of its process/procedure for asbestos containment and removal constitutes a patent infringement. All potential contractors are hereby notified that they may have to obtain a license to use certain patented Negative Air Containment systems, and that any liability of the University in connection therewith is covered by Section 2.21 of the Agreement. Therefore, all potential contractors are hereby notified that after opening of the bids they must advise the University as to the system they intend to use for Negative Air Containment and provide the University with either a copy of their license to use the same or written documentation, signed

by an authorized officer of their surety, that their performance bond guarantees the Contractor's indemnification covering patent claims.

- e. Air Monitoring - The abatement contractor shall be responsible for hiring and paying an independent third party firm to perform the requirements of air monitoring as called for in Subpart 56-17 of 12 NYCRR Part 56.
- f. Testing - The University and Campus reserve the right to employ an independent testing laboratory to perform testing on the work and air sampling. The Contractor shall be required to cooperate with the testing laboratory.
- g. Disposal Procedures - It is the responsibility of the asbestos contractor to determine current waste handling, transportation and disposal regulations for the work site and for each waste disposal landfill. The asbestos contractor must comply fully with these regulations, all appropriate U.S. Department of Transportation, EPA and Federal, State and local entities' regulations, and all other then current legal requirements. Submit originals or copies of all pertinent manifests in triplicate to the University.
- h. Submittals - Prior to commencement of the work on this project, the Contractor must submit the following to the University:
 - 1). Copy of original insurance policy.
 - 2). Copy of Department of Labor notification.
 - 3). Owner Fact Sheet.
 - 4). Copy of EPA notification.
- i. Special Requirements -
 - 1) Size, location, and quantities of all pipes, joints, ducts, valves, tees, etc. must be field verified by all prospective bidders. Information given on the drawings and specifications is for general orientation and information only.
 - 2) The Contractor shall have at least one English-speaking supervisor on the ob site at all times while the project is in progress.
 - 3) Prior to the commencement of work involving asbestos demolition, removal, renovation, the Contractor must submit to the University the name of its on-site asbestos supervisor responsible for such operations, together with documentation that such supervisor has completed an Environmental Protection Agency-approved training course for asbestos supervisors.

27. Wage Rates and Supplements

The rates of wages and supplements determined by the Industrial Commissioner of the State of New York as Prevailing in the locality of the site at which the work will be performed can be found at: <http://wpp.labor.state.ny.us/wpp/viewOriginalWageSchedule.do?projectId=781760>

The Prevailing Wage Case Number (PRC#) assigned to this project is 2012007170.

State University of New York

Purchase College

Residence Halls

Replace LTW Piping/Zones C&D

Prepared for:

Purchase College State University of New York
735 Anderson Hill Road
Purchase, New York 10577

Prepared by:

Schuyler Engineering, P.C.
163 North Wellwood Avenue
Lindenhurst, New York 11757

REVISION A

100% DESIGN REVIEW

**Purchase College State University of New York
Residence Halls
Replace LTW Piping / Zones C & D**

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DIVISION 01 – GENERAL REQUIREMENTS
SECTION 01 11 00 – SUMMARY OF WORK

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PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. This specification defines the requirements for the mechanical work required to complete the project.
- B. The Contractor shall provide labor and materials required to accomplish the work associated with the removal, furnishing and installation of equipment and mechanical systems as indicated herein and on the Contract Drawings. The Contractor shall furnish and install all components necessary for the installation of mechanical equipment to result in a complete operational system at project completion.
- C. The Contractor's bid shall include, but not be limited to the work as described on drawing T-1.

1.02 REFERENCES

- A. The specified Codes and Standards may be exceeded by the Contractor, with the Engineer's approval, if superior or more economical designs and/or materials are available.
- B. The following documents form a part of the Specifications. Unless otherwise indicated, the issue in effect on date of invitation for bids shall apply.
 - 1. AISC Steel Handbook
 - 2. American National Standards Institute, Inc. (ANSI)
 - a. B1.1 Unified Screw Threads
 - b. B2.1 Pipe Threads (Except Dryseal)
 - c. B2.2 Dryseal Pipe Threads
 - d. B16.3 Malleable Iron Threaded Fittings
 - e. B16.5 Steel Pipe Flanges and Flanged Fittings
 - f. B16.10 Face to Face and End to End Dimensions of Ferrous Valves
 - g. B16.11 Forged Steel Fittings, Socket Welding and Threaded
 - h. B16.21 Nonmetallic Flat Gaskets For Pipe Flanges
 - i. B36.10 Welded and Seamless Wrought Steel Pipe
 - j. B1.20.1 Pipe Threads, General Purpose (Inch)
 - k. B31.9 Building Services Piping
 - l. B40.1 Gauges-Pressure Indicating Dial Type-Elastic Element
 - 3. American Society of Nondestructive Testing (ASNT)
 - a. SNT-TC-1A Recommended practice for personnel qualification and certification in nondestructive testing (with supplements)
 - 4. American Society for Testing and Materials (ASTM)
 - a. A 27 Mild to Medium Strength Carbon Steel Castings for General Application
 - b. E84 Surface Burning Characteristics of Building Materials.
 - 5. American Society of Mechanical Engineers (ASME)

- a. Boiler and Pressure Vessel Code
- 6. Factory Mutual Engineering Corporation (FM)
 - a. Factory Mutual Approval Guide
- 7. Manufacturers Standardization Society (MSS)
 - a. SP25 Standard Markings System for Valves, Fittings, Flanges and Unions
 - b. SP58 Pipe Support Standards
 - c. SP61 Pressure Testing of Steel Valves
 - d. SP84 Steel Valves Socket Welding and Threaded Ends
- 8. National Fire Protection Association (NFPA)
 - a. No. 101 Life Safety Code
- C. Requirements of Regulatory Agencies - New York State
 - 1. New York State Energy Conservation Code
- D. Standard Compliance
 - 1. Where components or materials are specified to conform to requirements of the standards of organizations such as American Society of Mechanical Engineers (ASME) or Underwriters Laboratories (UL), that use of label or listing as method of indication compliance, proof of such conformance shall be submitted and approved by the Engineer. The label or listing of the specified organization will be acceptable evidence.
 - 2. Where reference is made to codes or standards, or to technical or trade specifications (such as ASTM or ANSI), the latest edition and latest addenda shall be used. In event of conflict between the reference documents, the Engineer shall be notified for resolution.

1.03 SCHEDULING WORK

- A. The Contractor shall submit a construction schedule at the construction kick-off meeting. All Work shall be performed following the schedule after it has been reviewed and approved by the Engineer and the Facility.
- B. The facility is in operation 24 hours per day, 365 days per year. The Contractor shall not secure any utilities without written consent from the facility. The Contractor will be provided with limited shutdown to accomplish the tie-in work to the existing LTW system. The Contractor shall ensure a minimum down time of the respective piping system.
- C. The Contractor shall not remove any equipment or system for operation without the consent of the facility and Site Representative. Once work has been initiated on any equipment or system, the Contractor shall work continuously until the equipment or system is operational.
- D. On areas of work affected by other contractors, work shall be coordinated to prevent damage to any work being performed in the area or affect operation of the other parts of the system that are in service.

1.04 QUALITY ASSURANCE

- A. The manufacturer of all equipment, devices and material furnished under this Contract shall have and maintain a quality control system which will establish that all code and standard requirements including material, design, fabrication, examination, and inspection will be met. The system shall

also include provisions for satisfying any requirements of the manufacturer or Owner that exceed minimum code or standard requirements.

- B. All components shall be given the manufacturer's standard series of electrical and mechanical tests to assure that the equipment is free from defects and to establish that the design and construction is satisfactory. Test data shall be submitted to the Engineer at the time of equipment delivery.
- C. All equipment devices and material furnished under this Contract shall, at a minimum, be in accordance with the requirements of the specifications, and shall be the manufacturer's standard commercial product. Additional or better features which are not specifically prohibited by the specifications, but which are a part of the manufacturer's standard commercial product, shall be provided. A standard commercial product is a product that has been sold or is being currently offered for sale on the commercial market through advertisements or manufacturer's catalogs or brochures, and represents the latest production model.
- D. All equipment constructed or certified to a referenced standard shall bare the label of that standard (i.e. ASTM, UL, etc.)
- E. The Contractor shall implement a Quality Assurance Program that will be effective during the contract period. As a minimum, the following controls, methods and procedures should be thoroughly developed in the Contractors program:
 - 1. Procedures to properly identify and control material within the work area to assure that the specified material is used.
 - 2. Controls to ensure that the correct pipe dope compounds are used.
 - 3. Methods and procedures to be used to ensure that fit-up of all joints meet specification requirements.
 - 4. Controls to ensure that all pressure piping is installed using qualified procedures in accordance with ANSI B31.9.
 - 5. Methods and procedures by which the Contractor obtains assurance that all material supplied by sub-vendors meet the requirements of the governing specifications.

1.05 SHIPPING

- A. All items shall be suitably packed and protected from damage during shipment. Each item, crate, bag or other container shall, in addition to the address, be durably marked with the manufacturer's mechanical material list and tag number for which it is intended.
- B. Surfaces subject to corrosion shall be coated with a corrosion preventative that is readily removed with a commercial solvent. All openings shall be sealed and protected with corrosion-resistant covers or plugs.

PART 2 - PRODUCTS

2.01 GENERAL

- A. All mechanical materials shall be free from defects, which adversely affect the performance or maintainability of individual components, or of the overall assembly.
- B. Unless otherwise specified herein, all equipment, material, and articles furnished under this Contract shall be factory new and without blemish or defect. Salvage or rebuilt equipment or materials will not be acceptable.

- C. Castings shall be sound and free from patching, misplaced coloring, warping, or other defects that may render the casting unsound for use. Repair processes, such as welding, peening, plugging, or filling with cold solder or metallic paste shall not be accepted.
- D. All units of the same classifications i.e., strainers, pumps, heaters, transmitters, etc., with similar options shall be identical to the extent necessary to insure interchangeability of component parts, assemblies, accessories, and spare parts. All units of the same classifications shall be furnished by one manufacturer.
- E. Unless otherwise indicated, all nuts and bolts supplied with equipment furnished shall be U.S. standard. Metric nuts and bolts will not be acceptable.

PART 3 - EXECUTION

3.01 TESTING

- A. After the mechanical work has been completed, the Contractor shall subject all mechanical systems to acceptance tests under normal operational conditions. The mechanical inspection shall meet all Owner requirements to ensure the equipment and/or systems are in perfect working order.
- B. The Contractor shall provide sufficient qualified manufacturer representation for starting, testing, and calibration of the Contractor furnished equipment provided and installed within this Section and shall not be relieved until it is to the satisfaction of the Engineer.
- C. Tests shall be attended by representatives of the Contractor, Site Representative and the facility.
- D. Furnish all labor, materials and instruments and bear any costs in connection with all the tests required for the project. This shall include but not be limited to load banks.
- E. Provide written notice (at least 48 hours) to all concerned of the intended date and time of the tests to be conducted.
- F. The Contractor shall not allow or cause any of the work to be covered up or enclosed until it has been inspected, tested and approved by the Site Representative and the local inspector (as required). Failure to adhere to this policy will result in the Contractor bearing all costs associated to reopen equipment and systems.
- G. The following checks shall be made:
 - 1. Confirm that all necessary valves, etc. whether specifically mentioned in the specifications and/or drawings or not, but understood to be required for complete and correct operation of equipment, are included.
 - 2. Confirm proper operation as to the proper quantities of delivered product for the associated equipment.
- H. The Contractor shall furnish all personnel to assist during testing. The Owner's personnel will assist in the operation of the equipment during start-up and testing in cooperation with the Contractor. The Owner shall not assume any responsibility until the Work has been fully accepted by the Engineer.
- I. Testing of piping
 - 1. All piping systems shall be subjected to a test before the piping is concealed, covered or insulated.

2. Before testing the piping systems, remove or otherwise protect from damage all gauges and components that are not designed to withstand the pressures used in testing piping.
3. All new piping shall, at minimum, be subjected to a test of 1.5 times the operational pressure, unless otherwise specified.
4. Acceptance shall be zero leakage at all piping and fitting joints, additionally the piping shall hold pressure, after being bottled up, for at least 30 minutes.
5. Contractor shall be responsible to adjust, repair and retest until all testing is completed and accepted.

END OF SECTION

DIVISION 02 – EXISTING CONDITIONS
SECTION 02 41 13 – DEMOLITION

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PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. This specification defines the requirements for demolition work as specified herein and on the Contract Drawings. The mechanical demolition work shall include, but not be limited to the following:
 - 1. Demolish and remove sections of the LTW piping system in the existing trench. The work will include the piping from the point where it enters the trench from the MER up to and including the tee at each riser point.
 - 2. Demolish a 12" x 24" section of concrete next to existing access hatch to allow the removal of old pipe and installation of new pipe.
- B. The Contractor shall furnish all labor, supervision, material, and equipment required for the work as indicated herein and on the Contract Drawings.
- C. Contractor is responsible for removal of all demolished material, not marked as salvage, from the site.

1.02 COORDINATION

- A. The Contractor shall phase all demolition work as indicated on the drawings.
- B. All demolition work must be coordinated with the Facility and other trades. No demolition work may begin without authorization of the Site Representative.

1.03 SITE CONDITIONS

- A. All outages required by the Contractor to perform the Work shall be arranged in advance with the Facility and the Owner's Representative. A minimum of 48 hours advanced notice will be required for an outage of all utilities including heating hot water.
- B. The Contractor shall remove all electrical conduit, wiring, and electrical equipment in the area to facilitate the demolition work and/or rigging path of new material.
- C. The Contractor shall turn over to the Owner and shall place in designated storage any items "marked" as salvage. Salvage items shall be "marked" prior to any demolition or dismantling by the Owner and shall be confirmed by the Engineer. The Contractor shall not proceed with any demolition work prior to agreement by the Engineer and the Owner of the "marked" items.
- D. All "marked" items, or items removed by the Contractor prior to confirmation of their removal status shall be either reinstalled, repaired, or replaced by the Contractor as determined by the Engineer. All such work shall be performed at the expense of the Contractor.
- E. Prevent contamination and surface damage of the facilities' equipment, components, and spaces during demolition and contamination producing operations.
 - 1. Plug, blank, wrap, cover, seal, and mask equipment, components, cables, wireways and openings using fire retardant material, and prevent entry of contaminants to machinery, electronic equipment, valves, vents not in use, and other openings.
 - 2. Install fire retardant industrial filter material on the intake of supply and exhaust end of any ventilation systems which will be in use.
 - 3. All protective measures are to be in place prior to start of any contamination producing operations and shall remain in place until the operation is complete.

4. Install double curtain baffles at the entrance of each access hatch where airborne contamination could occur during demolition operations.
- F. Inspect the integrity of the protective covering at the beginning of each shift in which contamination producing operations will be accomplished. Ensure that equipment and machinery have not been infiltrated by contaminants.
- G. Maintain cleanliness of the work site, including all decks, free from accumulation of industrial debris caused by contractor and/or subcontractor employees on a continuous basis throughout the construction. Workspaces include those areas immediately adjacent, and those areas where service lines run in the vicinity of the work site.
- H. Accomplish an initial walk-through of all locations where the contractor is responsible to perform work to observe cleanliness conditions. The inspection shall be made jointly with the Site Representative, and take place prior to the commencement of any work by the contractor.
- I. Accomplish a cleanliness inspection on a daily basis whenever work is in progress. The inspection shall be made jointly with the Site Representative. During inspection, the responsible party shall be assigned. A written report shall be prepared by the Contractor and distributed to the Site Representative on the same day. The report shall indicate as found conditions and assign the responsible activity for each area. Corrective action shall take place immediately.

1.04 REFERENCES

- A. Where applicable, all work performed under this section shall be in accordance with the latest edition and latest addenda thereto of the applicable codes, standards, specifications, regulations, procedures, and tests of the following organizations:
 1. Environmental Protection Agency (EPA)
 2. National Fire Protection Association (NFPA)
 3. NYS Department of Environmental Conservation (NYSDEC)
 4. NYS Department of Labor (NYSDOL)
 5. Occupational Safety and health Administration (OSHA)
- B. Where reference is made to codes or standards or to technical or trade specifications (such as ASTM or ANSI), the latest edition and latest addenda shall be used. In the event of conflict between the reference documents, the most conservative and stringent requirement shall apply. However, any such conflicts shall be brought to the attention of the Engineer for resolution.
- C. The following documents form a part of this Section. Unless otherwise indicated, the issue in effect on the date of invitation for bids shall apply.
 1. National Fire Prevention Association (NFPA)
 - a. 241 - Safeguarding Construction, Alteration, and Demolition Operations.
 2. NYS Department of Labor (NYSDOL)
 - a. Industrial Code Rule No. 23 - Protection of Persons Employed in construction and Demolition Work.
 3. NYS Building Code
 4. U.S. Department of Labor - OSHA
 - a. 29 CFR 1910 - Occupational Safety and Health

b. Subpart T - Demolition - Safety and Health Regulations for Construction

PART 2 - PRODUCTS

A. NOT USED

PART 3 - EXECUTION

3.01 GENERAL

A. Requirements

1. The existing equipment and/or materials which shall be removed is indicated herein and on the Contract Drawings, but shall also include any and all other existing materials or equipment necessary to execute the Work identified in the Contract Documents.
2. The Contractor shall obtain all permits and pay all fees where required from all Federal or State Departments, Boards, or Agencies and shall furnish the Engineer with three copies of all permits obtained from regulatory agencies.

B. Removal Specifics

1. The Contractor shall maintain a means of egress from the trench at all times. Work affecting the exits from the trench shall be coordinated with the facility, site representative and other trades.

C. Material Disposal

1. All existing equipment, materials, and fixtures removed from the facility in the execution of this Contract, shall become the property of the Contractor and shall be removed from the site, except for items which shall be identified as salvage prior to demolition. The Contractor shall remove such items and turn it over to the Owner.
2. All debris shall be removed from the work site and the site left in the neat and orderly condition as approved by the Engineer.
3. No new work shall commence in the work area until demolition has been completed and the approval by the Site Representative obtained.

D. Demolition Method

1. Demolition work shall not endanger the integrity of the remaining structures. Demolition shall not proceed until authorized by the Engineer or Owner's Representative.
2. The use of burning torches shall be permitted only in locations designated by the Owner's Representative as safe areas. Specific approval shall be obtained for each location.
3. Gas cutting shall be performed in accordance with local building codes, rules, and ordinances. Protection as required shall be applied in the event that noxious fumes are produced from the burning of painted steelwork or equipment.
4. Fire watch shall be maintained for burning and cutting operations.
5. All demolition work shall be executed in a careful and orderly manner, without disturbing the operating equipment and Personnel at the site.

E. Protection

1. Since removal work may occur in the immediate vicinity of operating equipment and personnel, the Contractor shall furnish, erect, and maintain barricades around the entire work area and post appropriate signs "flagging" this area.
2. The Contractor shall furnish, erect, and maintain at the site all bracing, shoring, fire resistant fencing, electric lights, and other safety devices necessary to protect equipment and personnel from damage and injury.
3. The Contractor shall follow all safety requirements specified in applicable federal, state, city and local codes and ordinances.
4. The Contractor shall wet down dust producing operations as necessary, unless otherwise directed by the Engineer.
5. The site of work is an operating facility and will continue operation while the work specified herein is in progress. Accordingly, the Contractor must perform his work so as not to interfere with the continuing operations and as directed by the Field Representative. Any equipment damaged and not in the demolition scope shall be repaired or replaced by the Contractor at his expense.

3.02 HAZARDOUS MATERIAL

A. Asbestos

1. The Contractor shall be aware there is no asbestos in the trench. The Owner has supporting documentation.

3.03 DEMOLITION

A. Protection of Existing Equipment and Components

1. The Contractor shall maintain the structural integrity of the remaining equipment and components exposed or breached by the demolition work.
2. The Contractor shall maintain the required fire exists and passageways or provide substitutions.
3. The Contractor shall provide temporary protection from the elements to the building structure and equipment exposed during the demolition.
4. The Contractor shall provide the means necessary to restore the weatherproof integrity to all buildings in which it has been impaired by the demolition work.

B. Preparatory Operations

1. Where it is necessary to maintain any power or water during demolition, the Contractor shall relocate or protect such lines with substantial coverings to protect them from injury and to afford safety to the workmen.
2. When the demolition is expected to be dusty, the Contractor shall provide a dust-tight enclosure from the floor to above and around all equipment being demolished, which shall be vented outside the building to prevent dust from interfering with the operation of the rest of the Plant.

C. Demolition Operations

1. Use of explosives in the demolition operations shall be prohibited.

2. The Contractor shall provide temporary wood railing and barriers around all openings and across accessways created by the demolition process. All railings shall be in accordance with OSHA standards. The Contractor shall never leave an opening unprotected.

D. Post Demolition Operations

1. The Contractor shall furnish and install all necessary temporary and permanent caps, plugs and blanks for all remaining piping and ducts, as required.
2. Wherever empty sleeves or openings exist because of piping or conduit removal, the Contractor shall provide permanent coverings as required.
3. Areas where demolition has taken place are to be left in a broom swept clean condition.
4. Supports and hangers for removed piping and ductwork shall be dismantled including miscellaneous support steel attached to the building steel or concrete.
5. When equipment is removed, the support steel, base plates, and anchor studs shall be removed or severed at the floor, foundation, or pedestal level, unless otherwise indicated.
6. The Contractor shall provide equipment to remove any oil or flammable remaining in items being removed and shall purge these systems in accordance with local regulations prior to removing any steel by burning.

3.04 PERSONNEL AND PROPERTY PROTECTION

- A. Protection of persons and property shall be provided by the Contractor throughout the progress of work.
- B. The Work shall proceed in such a manner as to minimize the spread of dust and flying particles that could damage equipment nearby.
- C. Any damage to existing structures or equipment caused by the Contractor's operations shall be repaired by the Contractor at his own expense to the full satisfaction of the Engineer.

END OF SECTION

DIVISION 3 - CONCRETE
03 11 00 – CONCRETE FORMING

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PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. Provide all work necessary to layout, assemble and prepare all concrete formwork as required to create the pads, slabs, decking etc. outlined in the Contract Documents.
- B. The work of this Section of the Specifications shall include all labor, materials, tools, equipment, appliance or services necessary to complete the work as shown on the Drawings, as specified herein, or as required by the job conditions.

1.02 REFERENCES

- A. All work under this section shall conform to the requirements of the “New York State Building Code”, and the regulations of governmental authorities having jurisdiction.
- B. American Concrete Institute (ACI)
 - 1. ACI 117: Standard Specifications for Tolerances for Concrete Construction and Materials
 - 2. ACI 347R: Guide to Formwork for Concrete

1.03 SUBMITTALS

- A. The Contractor shall furnish product data for all proposed material and equipment that will be furnished to complete the work. Submittal type, quantities and distribution shall be in accordance with the General Requirements section of the Contract Documents and this Section.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer, with minimum 5 years experience, who has completed Work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Construction Site Quality: Contractor shall maintain, on site, sufficient office, field engineering, and field supervision staff to assure that all materials and layout correspond with the requirements of the Contract Documents and approved drawings.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Materials shall be delivered to the site, ready for use, in the manufacturer’s original and unopened containers or packaging. Packaging to contain material description and manufacturer information.
- B. All delivered materials, products or equipment shall be stored under cover in a dry, weather-tight, and adequately ventilated location. All materials shall be elevated off of the ground.
- C. All wood forming products shall not be stored on site for more than 1 week. Materials on-site for longer than 1 week are to be replaced prior to installation.

PART 2 - PRODUCTS

2.01 FORM MATERIALS

- A. Wood: Free from loose knots and suitable to facilitate finishing concrete surfaces required.
- B. Plywood: Exterior grade B-B, 5/8” or 3/4” thick for unlined contact form.
- C. Form Contact Faces, not exposed to view:
 - 1. Lumber shall be stress grade lumber designed and used in accord with “National Design Specification for Wood Construction”. Undressed lumber may be used.

2. Plywood for formwork shall be Exterior structural grade.
- D. Form Contact, exposed to view:
 1. Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
- E. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
 1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
- F. Corrugated Metal: Replace with matching corrugated metal strip.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Design, erect, shore, brace, and maintain formwork, according to ACI, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until concrete structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:
 1. Class B, 1/4 inch.
- D. Construct forms tight enough to prevent loss of concrete mortar.
- E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces.
- F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- G. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- H. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- I. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.02 REMOVING AND REUSING FORMS

- A. General: Formwork, for sides of beams, walls, columns, and similar parts of the Work, that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete provided concrete is hard enough to not be damaged by form-removal operations and provided curing and protection operations are maintained.

3.03 FINISHING FORMED SURFACES

- A. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defective areas. Remove fins and other projections exceeding 1/8 inch in height.

1. Apply to concrete surfaces exposed to public view or to be covered with a coating or covering material applied directly to concrete, such as waterproofing, dampproofing, veneer plaster, or painting.
- B. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

END OF SECTION

DIVISION 3 - CONCRETE
03 20 00 – CONCRETE REINFORCING

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PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. Provide all work necessary to layout, assemble and prepare all concrete reinforcement work outlined in the Contract Documents.
- B. The work of this Section of the Specifications shall include all labor, materials, tools, equipment, appliance or services necessary to complete the work as shown on the Drawings, as specified herein, or as required by the job conditions.

1.02 REFERENCES

- A. All work under this section shall conform to the requirements of the "New York State Building Code", and the regulations of governmental authorities having jurisdiction.
- B. American Concrete Institute (ACI):
 - 1. ACI 315: Details and Detailing of Concrete Reinforcement
 - 2. ACI 318: Building Code Requirements for Reinforced Concrete and Commentary
- C. American Society for Testing and Materials (ASTM):
 - 1. A82: Standard Specification for Steel Wire, Plain, for Concrete Reinforcement
 - 2. A185: Standard Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement
 - 3. A615: Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
 - 4. A706: Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement
 - 5. A767: Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement
 - 6. A775 Standard Specification for Epoxy-Coated Reinforcing Steel Bars

1.03 SUBMITTALS

- A. The Contractor shall furnish product data for all proposed material and equipment that will be furnished to complete the work. Submittal type, quantities and distribution shall be in accordance with the General Requirements section of the Contract Documents and this Section.
- B. Steel Reinforcement Shop Drawings: Details of fabrication, bending, and placement, prepared according to ACI 315, "Details and Detailing of Concrete Reinforcement." Include material, grade, bar schedules, stirrup spacing, bent bar diagrams, arrangement, and supports of concrete reinforcement. Include special reinforcement required for openings through concrete structures.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer, with minimum 5 years experience, who has completed concrete Work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Construction Site Quality: Contractor shall maintain, on site, sufficient office, field engineering, and field supervision staff to assure that all materials and layout correspond with the requirements of the Contract Documents and approved drawings.

- C. Splices: Reinforcement shall be spliced in strict accord with ACI 318. Where practical stagger splices of adjacent bars.
 - 1. Unless shown specifically to the contrary, all reinforcements shall be lap spliced and all splices shall develop the full tensile capacity of the reinforcement.
 - 2. Lapped splices shall not be used for bars larger than size No. 11.
 - 3. Butt splices shall be detailed in strict accordance with the manufacturer's printed instructions.
 - 4. Lapped bars may be detailed to be placed in contact and securely wired together, or may be separated in accordance with ACI 318 to permit embedment of the entire surface of each bar in concrete.
 - 5. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.
 - D. In the presence of the Owner's Representative three mechanical splices may be subjected to testing to confirm design and installation. Testing will not be at contractors' expense.
 - E. Defective or Non-Conforming Work: Defective work, unsuitable work, or work otherwise failing to conform to the Contract Documents shall be made good by Contractor at no change to the dollar or time amount in the Contract. Contractor shall prepare appropriate details and procedures for brining such work into conformance with the Contract Documents and shall submit such details and procedures for acceptance prior to any corrective actions. Corrective Work; including materials, shall conform strictly to details and procedures accepted by the Owner's Representative. Non-conforming work may be rejected by the Owner's Representative or Engineer at any time, regardless of prior acceptance in shop drawings, prior inspections, inclusion in inspection or test reports, or inclusion in certificates of payment.
- 1.05 DELIVERY, STORAGE, AND HANDLING
- A. Materials shall be delivered to the site, ready for use, in the manufacturer's original and unopened containers or packaging. Packaging to contain material description and manufacturer information.
 - B. All delivered materials, products or equipment shall be stored under cover in a dry, weather-tight, and adequately ventilated location. All materials shall be elevated off of the ground.
 - C. Deliver, store, and handle steel reinforcement to prevent bending and damage.
 - 1. Avoid damaging coatings on steel reinforcement.
 - 2. Repair damaged epoxy coatings on steel reinforcement according to ASTM D 3963/D 3963M.

PART 2 - PRODUCTS

2.01 STEEL REINFORCEMENT

- A. Plain-Steel Welded Wire Fabric (sizes less than W4.0): ASTM A 185, fabricated from as-drawn steel wire into flat sheets.

2.02 REINFORCEMENT ACCESSORIES

- A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete or fiber-reinforced concrete of greater compressive strength than concrete, and as follows:

1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected or CRSI Class 2 stainless-steel bar supports.
- B. Tie Wire: 16 gauge or heavier, black annealed wire, conforming to ASTM A82. Tie wire in concrete at exposed surfaces shall be non-corrosive; stainless steel, monel, or plastic coated.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. General: Details of concrete reinforcement to be in accordance with ACI 318, and ACI 315, unless otherwise shown.
- B. Minimum clear distances between parallel bars, except in columns and multiple layers of bars in beams shall be equal to nominal diameter of bars. Minimum clear spacing in 1 inch or 1-1/3 times the maximum size of the coarse aggregate.
- C. Place reinforcement conforming to CRSI DA4, unless otherwise shown. Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
- D. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials.
- E. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars. Tie all intersections and splices with 16 gauge annealed wire.
- F. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.
- G. Secure reinforcing bars against displacement during the placing of concrete by spacers, chairs, or other similar supports. Portions of the supports, spacers, and chairs in contact with formwork shall be made of plastic in areas that will be exposed when completed. Type, number, and spacing of supports are to conform to ACI 315.
- H. Where concrete slabs are placed on the ground, use concrete blocks or other non-corrodible material of proper height, for support of reinforcement. Use brick or stone supports will not be permitted.

END OF SECTION

DIVISION 3 - CONCRETE
03 30 00 –CAST IN PLACE CONCRETE

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PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. Provide all work necessary to construct concrete work outlined in the Contract Documents.
- B. The work of this Section of the Specifications shall include concrete design mix, extra materials, labor, materials, tools, equipment, appliance or services necessary to complete the work as shown on the Drawings, as specified herein, or as required by the job conditions.

1.02 REFERENCES

- A. All work under this section shall conform to the requirements of the “New York State Building Code”, and the regulations of governmental authorities having jurisdiction.
- B. American Concrete Institute (ACI):
 - 1. ACI 117: Standard Specifications for Tolerances for Concrete Construction and Materials
 - 2. ACI 211.1 & 2: Standard Practice for Selecting Proportions for Concrete
 - 3. ACI 214: Recommended Practice for Evaluation of Strength Test Results of Concrete
 - 4. ACI 301: Standard Specifications for Structural Concrete
 - 5. ACI 304: Guide for Measuring, Mixing, Transporting, and Placing Concrete
 - 6. ACI 305: Hot Weather Concrete
 - 7. ACI 308: Standard Practice for Curing Concrete
 - 8. ACI 309: Guide for Consolidation of Concrete
 - 9. ACI 318: Building Code Requirements for Reinforced Concrete
- C. American Society for Testing and Materials (ASTM):
 - 1. C31: Standard Practice for Making and Curing Concrete Test Specimens in the Field
 - 2. C94: Standard Specification for Ready-Mixed Concrete
 - 3. C150: Standard Specification for Portland Cement
 - 4. C494: Standard Specification for Chemical Admixtures for Concrete

1.03 SUBMITTALS

- A. The Contractor shall furnish product data for all proposed material and equipment that will be furnished to complete the work. Submittal type, quantities and distribution shall be in accordance with the General Requirements section of the Contract Documents and this Section.
- B. Product Data: For each type of manufactured material and product indicated.
- C. Product Samples:
 - 1. Form Ties; one of each type to be used
- D. Design Mixes: For each concrete mix. Include alternate mix designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.
 - 1. Indicate amounts of mix water to be withheld for later addition at Project site.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer, with minimum 5 years experience, who has completed concrete Work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Construction Site Quality: Contractor shall maintain, on site, sufficient office, field engineering, and field supervision staff to assure that all materials and layout correspond with the requirements of the Contract Documents and approved drawings.
- C. Concrete Supplier: A firm experienced in manufacturing ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.
 - 1. Manufacturer must be certified according to the National Ready Mixed Concrete Association's Certification of Ready Mixed Concrete Production Facilities.
 - 2. Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, each aggregate from one source, and each admixture from the same manufacturer.
- D. Testing Agency: The Owner will engage and pay for the services of an independent testing agency (Testing Agency). The Testing Agency will perform the following functions, inspections and tests. Contractor shall coordinate, and when directed correct items and issues noted by the Testing Agency.
 - 1. Take steps to ascertain that concrete is proportioned and mixed in accordance with the requirements of the Specification and approved submittals;
 - 2. Maintain a presence at the jobsite during the placing of concrete;
 - 3. Examine formwork for general conformance with the requirements of the Specification and approved Shop Drawings;
 - 4. Examine as-placed reinforcing steel for general conformance with the requirements of the Specifications and in accordance with approved Shop Drawings.
 - 5. Perform and evaluate testing of concrete cylinders in accordance with ASTM standards.
- E. Defective or Non-Conforming Work: Defective work, unsuitable work, or work otherwise failing to conform to the Contract Documents shall be made good by Contractor at no change to the dollar or time amount in the Contract. Contractor shall prepare appropriate details and procedures for bringing such work into conformance with the Contract Documents and shall submit such details and procedures for acceptance prior to any corrective actions. Corrective Work; including materials, shall conform strictly to details and procedures accepted by the Owner's Representative. Non-conforming work may be rejected by the Owner's Representative or Engineer at any time, regardless of prior acceptance in shop drawings, prior inspections, inclusion in inspection or test reports, or inclusion in certificates of payment.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Materials shall be delivered to the site, ready for use, in the manufacturer's original and unopened containers or packaging. Packaging to contain material description and manufacturer information.
- B. All delivered materials, products or equipment shall be stored under cover in a dry, weather-tight, and adequately ventilated location. All materials shall be elevated off of the ground.

- C. Aggregates to be used in field mixed concrete or grout shall be stockpiled in separate bins or piles in a manner suitable to minimize segregation and contamination of aggregates. Field mixing is not encouraged and will not be allowed without written approval by the Owner's Representative.
- D. Admixture storage tank and dispensing equipment shall be provided and serviced by the admixture manufacturer, at no cost to the owner.

PART 2 - PRODUCTS

2.01 CONCRETE MATERIALS

- A. Portland Cement: ASTM C 150, Type I or II.
- B. Fly Ash: ASTM C618, Class C or F including supplementary optional requirements relating to reactive aggregates and alkalies, and loss on ignition not to exceed 5 percent.
- C. Coarse Aggregates: ASTM C 33 limits deleterious substances in coarse aggregate depending on climate severity and in-service location of concrete.
 - 1. Size #67 may be used for footings and walls over 12 inches thick.
 - 2. Coarse aggregate for applied topping, encasement of steel columns, and metal pan stair fill shall be Size 7.
 - 3. Maximum size of coarse aggregates not more than 1/5 of the narrowest dimension between sides of forms, 1/3 the depth of slabs, nor 3/4 of the minimum clear spacing between reinforcing bars.
- D. Lightweight Aggregate: ASTM C330, Table 1. Maximum size of aggregate not larger than 1/5 of the narrowest dimension between form, nor 3/4 of the minimum clear distance between reinforcing bars. Contractor to furnish certified report to verify that aggregate is sound and durable, and has a durability factor of not less than 80 based on 300 cycles of freezing and thawing when tested in accordance with ASTM C666.
- E. Fine Aggregate: ASTM C33 Fine aggregate for applied concrete floor topping shall pass a #4 sieve, 10 percent maximum shall pass a #100 sieve.
- F. Water: Potable and complying with ASTM C 94.

2.02 ADMIXTURES

- A. General: Admixtures certified by manufacturer to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material and to be compatible with other admixtures and cementitious materials. Do not use admixtures containing calcium chloride.
- B. Air-Entraining Admixture: ASTM C 260.
- C. Water-Reducing Admixture: ASTM C 494, Type A.
- D. High-Range, Water-Reducing Admixture: ASTM C 494, Type F.
- E. Water-Reducing and Accelerating Admixture: ASTM C 494, Type E.
- F. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.

2.03 CONCRETE MIXES

- A. Concrete Mix Requirements: Proportions for each mix shall provide for homogeneous, cohesive, workable and dense concrete, suitable in all respects for its intended purpose. Concrete mixes shall be selected to provide an average strength not less than that required by ACI 318, Chapter 5.

Selected mixes shall conform to the specified requirements, Contractor may propose with his bid a cost-savings mix design making use of fly ash, but with a maximum replacement of cement with fly ash equal to 10 percent.

- B. Use a qualified independent testing agency for preparing and reporting proposed mix designs for the laboratory trial mix basis.
- C. After approval of design mixes no substitution in material or change in proportions of approval mixes may be made without additional tests and approval by the Owner's Representative and Engineer.
- D. Contractor shall notify the Owner's Representative of the time and location where each trial mix will be performed to permit the Testing Agency to observe the preparation, batching and testing, should the owner elect to do so.
- E. Air Entrainment: Entrained air is not required for concrete for footings. All other concrete shall be air entrained to 5-1/2 percent, except pea gravel and sidewalk concrete with shall be air-entrained to 6-1/2 percent.
- F. Cement Factor: Maintain minimum cement factors below regardless of compressive strength developed minimums, for air entrained concrete:
 - 1. 4000 psi – Minimum Cement 550 (lbs/yd) – Max. Water/Cement (.50)
- G. Cement Factor: Maintain minimum cement factors below regardless of compressive strength developed minimums, for non-air entrained concrete:
 - 1. 4000 psi – Minimum Cement 550 (lbs/yd) – Max. Water/Cement (.55)
- H. Reinforced Footings and Foundation Walls: Proportion normal-weight concrete mix as follows:
 - 1. Compressive Strength (28 Days): 4000 psi.
 - 2. Maximum Slump: 3 inches.
- I. Slab-on-Grade: Proportion normal-weight concrete mix as follows:
 - 1. Compressive Strength (28 Days): 4000 psi.
 - 2. Maximum Slump: 4 inches.
- J. Suspended Slabs: Proportion normal weight structural concrete mix as follows:
 - 1. Compressive Strength (28 Days): 3500 psi.
 - 2. Maximum Slump: 4 inches.
- K. Admixtures: Slump may be increased by the use of the approved high range water-reducing admixture. Tolerances are as established by ASTM C94.
 - 1. Use water-reducing admixture or high-range water-reducing admixture (superplasticizer) in concrete, as required, for placement and workability.
 - 2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

PART 3 - EXECUTION

3.01 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use Setting Drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
 - 1. Install anchor bolts, accurately located, to elevations required.

3.02 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Do not add water to concrete during delivery, at Project site, or during placement, unless approved by Architect.
- C. Deposit concrete continuously or in layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as specified. Deposit concrete to avoid segregation.
- D. Deposit concrete in forms in horizontal layers no deeper than 24 inches and in a manner to avoid inclined construction joints. Place each layer while preceding layer is still plastic, to avoid cold joints. Do not deposit concrete vertically more than 60". For deeper forms deposit concrete with a tremie.
 - 1. Consolidate placed concrete with mechanical vibrating equipment. Use equipment and procedures for consolidating concrete recommended by ACI 309R.
 - 2. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations no farther than the visible effectiveness of the vibrator. Place vibrators to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mix constituents to segregate.
- E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
 - 1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 - 2. Maintain reinforcement in position on chairs during concrete placement.
 - 3. Screed slab surfaces with a straightedge and strike off to correct elevations.
 - 4. Slope surfaces uniformly to drains where required.
 - 5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, free of humps or hollows, before excess moisture or bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

3.03 DEFLECTIONS FOR ALL METAL DECK/CONCRETE WORK:

- A. It shall be the Contractor's responsibility and choice as to how the proper grades are to be accomplished at the top of the slab. Where concrete is poured over metal deck and steel framing it

must be assumed that the composite deck, beams, and girders will settle as the wet concrete is placed unless shored. The contractor shall provide shoring or additional concrete, or both to bring the slab up to the proper grade at no additional cost to the Owner. Monitor top of slab elevation continuously during pour from a fixed position to assure flatness criteria are met.

3.04 CONCRETE FINISHES

A. Slab Finishes:

1. Comply with recommendations in ACI 302.1R for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
2. Place slabs monolithically. Once slab placement commences, complete finishing operations within the same day. Slope finished slab to floor drains where they occur, whether shown or not.
3. Use straightedges specifically made for screeding, such as hollow magnesium straightedges or power strike-offs. Do not use pieces of dimensioned lumber. Strike off and screed slab to a true surface at required elevations. Use optical or laser instruments to check concrete finished surface grade after strike-off.
4. Scratch Finish: Finish for all base slabs receiving a bonded applied cementitious application. Thoroughly coarse wire broom within two hours after placing to roughen slab surface to insure permanent bond between slab and applied materials.
5. Float Finish: Slabs to receive unbonded toppings, steel trowel finish, fill, mortar setting beds, or a built-up roof, and ramps, stair treads, platforms, and equipment pads shall be floated to a smooth, dense uniform, sandy textured finish. During floating, while surface is still soft, check surface for flatness using a 10 foot straightedge. Correct high spots by cutting down and correct low spots by filling in with material of the same composition as floor finish. Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats.
6. Steel Trowel Finish: Concrete surfaces to receive resilient floor covering or carpet, monolithic floor slabs to be exposed to view in finished work, future floor roof slabs, applied toppings and other interior surfaces for which no other finish is indicated. Steel trowel immediately following floating. During final troweling, tilt steel trowel at a slight angle and exert heavy pressure to compact cement paste and form a dense, smooth surface. Finished surface shall be smooth, free of trowel marks, and uniform in texture and appearance.
7. Broom Finish: Finish exterior slabs, platforms, steps, walks, ramps, and stair treads with a bristle brush moistened with clear water after surfaces have been floated. Bush in a direction transverse to main traffic.
8. Slab Finish Flatness (FF) and Levelness (FL) shall comply with the following minimums:
 - a. Areas covered with carpeting, or not otherwise included below:
 - (1) Slab on Grade – Overall Value FF 25/ FL 20; Minimum Local FF 17/FL15
 - (2) Level suspended slabs - Overall Value FF 25/ FL 20; Minimum Local FF 17/FL15
 - (3) Slabs exposed - Overall Value FF 36/ FL 20; Minimum Local FF 24/FL15
 - (4) Slabs to be covered - Overall Value FF 36/ FL 20; Minimum Local FF 24/FL15
 - b. Level tolerance such that 80 percent of all points fall within a $\frac{3}{4}$ inch envelop (+3/8 inch, -3/8 inch) from the design elevation.

3.05 MISCELLANEOUS CONCRETE ITEMS

- A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete Work.

3.06 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and with recommendations in ACI 305R for hot-weather protection during curing.
- B. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces, by one or a combination of the following methods:
 - 1. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
 - a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
 - b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
 - c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer recommends for use with floor coverings.

3.07 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.
- B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.
- C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
 - 1. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.
- D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
 - 1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
 - 2. After concrete has cured at least 14 days, correct high areas by grinding.

3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
 4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
 5. Correct other low areas scheduled to receive a paint coating exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
 6. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least 3/4 inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mix as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
 7. Repair random cracks and single holes 1 inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.
- E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.
- F. Repair materials and installation not specified above may be used, subject to Architect's approval.

END OF SECTION

DIVISION 22 - PLUMBING
SECTION 22 07 00 – PLUMBING INSULATION

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PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. Provide thermal insulation system(s) as identified herein. Contractor shall furnish and install all insulation, covers and jackets as specified. All new and modified plumbing piping and related equipment shall be insulated as indicated on the Contract Documents.
- B. Unless otherwise indicated, installation of insulation shall include, but not be limited to the following systems:
 - 1. LTW Piping
- C. The Contractor shall furnish supervision, labor and all tools, equipment, hanger supports and any other material necessary to insulate the piping, valves, fittings and equipment.

1.02 REFERENCES

- A. All work under this section shall conform to the requirements of the "New York State Building Code", and the regulations of governmental authorities having jurisdiction.
- B. References shall be in accordance with the latest addenda thereto of the applicable codes, standards, specifications, regulations, and procedures.

1.03 SUBMITTALS

- A. The Contractor shall furnish product data for all proposed material and equipment that will be furnished to complete the work. Submittal type, quantities and distribution shall be in accordance with the General Requirements section of the Contract Documents and this Section.
- B. The Contractor shall furnish shop drawings for all proposed material that will be furnished to complete the work in accordance with the General Requirements section of the Contract Documents and this Section.
- C. The Contractor shall submit to the Engineer for approval a list of insulation data proposed for the work. The data shall include information such as catalog cuts, diagrams, installation recommendations, and other information published by the manufacturer to demonstrate conformance to the specification.
- D. The Contractor shall submit a list of the intended insulation materials, thickness, and covering for each system requiring insulation.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer, with minimum 5 years experience, who has completed Work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Construction Site Quality: Contractor shall maintain, on site, sufficient office, field engineering, and field supervision staff to assure that all materials and layout correspond with the requirements of the Contract Documents and approved drawings.
- C. Supplier Qualifications: The supplier of the equipment shall have furnished at least ten comparable units of the sizes, type, style, and performance to the equipment specified herein. The comparable equipment shall be in successful operation for a period of not less than one year. Startup data sheets proving performance shall be provided for each of these ten units at the request of the Engineer, along with a point of contact for each installation.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver equipment and system components to their final locations in protective wrappings, containers, and other protection that will exclude dirt and moisture and prevent damage from construction operations. Remove protection only after equipment is safe from such hazards.
- B. Storage and Protection: Store and handle materials to prevent deterioration due to moisture, temperature changes, contaminants, or other causes.
- C. All delivered materials, products or equipment shall be stored under cover in a dry, weather-tight, and adequately ventilated location. All materials shall be elevated off of the ground.

1.06 PROJECT/SITE CONDITIONS

- A. Environmental Conditions: Do not install insulation when ambient or substrate temperatures are outside limits permitted by manufacturers recommendations or when substrates are wet due to rain, frost, condensation, or other causes.

PART 2 - PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

- A. Thermal insulation system materials shall be noncombustible, as defined by NFPA 220.
- B. Materials shall be compatible and shall not contribute to corrosion, soften, or otherwise attack surfaces to which applied, in either the wet or dry state.
- C. All insulation materials, including jackets, facings, adhesives, coatings, and accessories, shall be fire hazard rated and listed by Underwriter's Laboratory, Inc., Classification of Building Materials, Standard UL 723 (ASTM E-84).
 - 1. The Underwriter's Laboratory, Inc., listed Class I flamespread rating shall be a maximum of 25, the fuel contributed and smoke developed rating shall be a maximum of 50.
 - 2. Flameproofing treatments, which are subject to deterioration from moisture or humidity, are not acceptable.
- D. Adhesives, coatings, and sealants shall have published or certified temperature ratings suitable for the entire range of working temperatures normal for the surfaces to which they are applied.
- E. Insulating materials shall not contain any asbestos.

2.02 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with the Contract Documents, furnish the products of one of the following manufacturers:
 - 1. Fiberglass Insulation
 - a. Owens-Corning Fiberglass Corp.
 - b. Knauf Fiber Glass
 - c. Certainteed Product Corp.
 - d. Schuller International; or approved equal.
 - 2. P.V.C. Jacketing and Sheets
 - a. Schuller International
 - b. Proto Corp.

- c. Accessible Products; or approved equal.

2.03 INSULATION MATERIALS

- A. Fiberglass - Fiberglass insulation shall be woven fibrous inorganic glass in either pre-molded shapes banded with a thermo-setting resin or adhered to a backing. The maximum thermal conductivity shall be:
1. Pipe: $K = .26 @ 75^{\circ}F$ mean, 3 pcf, ASTM C 547, Class 1
 2. Premolded Fitting Insulation: $K = .26 @ 75^{\circ}F$, 4.0 pcf, ASTM C 547, Class 1.
 3. Insulation Inserts for PVC Fitting Jackets: $K = .28 @ 75^{\circ}F$, 1.5 pcf., ASTM C 553, Type III.

2.04 JACKETING

- A. All Purpose Jacket (AP)
1. All fiberglass insulation shall be furnished with an all purpose jacket conforming to ASTM C 1136, Types I and II. The all-purpose jacket shall be factory jacketed, comprised of laminated kraft-aluminum-foil combination. The insulation is adhered to the jacket with the end grain of the insulation perpendicular to the jacket surface.
 2. HVAC ductwork all purpose jacketing shall be either the white kraft or aluminum foil exterior, as specified.
 3. Jacket shall be furnished with integral 1-1/2 inch self sealing longitudinal lap, and separate 3 inch wide adhesive backed butt strips.
- B. P.V.C. Jackets
1. Polyvinylchloride (PVC) shall be a 0.10 inch thick, factory premolded, in one-piece fittings, or pipe-barrel sheeting vapor-barrier jacketing as needed.
 2. PVC jackets shall only be used on systems where the fluid temperature is less than 250°F, or insulation surface temperature is less than 150°F. All PVC materials shall carry the 25/50 label. Straight run or roll material shall not be less than 10 mils thick.
 3. PVC jackets shall be furnished for all fittings insulated with fiberglass, and shall also carry the 25/50 label and be 20 mils thick.
 4. PVC jackets shall be constructed of high impact, UV resistant PVC, conforming to ASTM D 1784, Class 14253-C.

PART 3 - EXECUTION

3.01 INSTALLATION OF INSULATION SYSTEMS

- A. Except as specified, material shall be installed in accordance with the recommendations of the manufacturer. Insulation materials shall not be applied until all testing such as x-ray, hydrostatic, etc. specified in other sections of these specifications have been completed; foreign material such as rust, scale, or dirt has been removed from surfaces to receive insulation; and the surfaces are clean and dry. Insulation shall be kept clean and dry at all times.
- B. All insulation joints shall be butted firmly together and all jackets shall be smoothly and securely installed. Insulate each pipe and duct individually. Do not use scrap pieces of insulation where a full-length section will fit. Insulate entire specified equipment, piping and duct systems, except controls, nameplates etc.

- C. Insulation shall be molded sectional, segmental or block material of a rigid type capable of retaining its insulating efficiency while continuously exposed to the design temperature without cracking, discoloring, disintegrating, losing its comprehensive strength or otherwise deteriorating.
- D. Joints shall be tight with insulation lengths tightly butted against each other. Where lengths are cut, cuts shall be smooth and square and without breakage of end surfaces. Where insulation terminates, ends shall be neatly tapered and effectively sealed, or finished as specified.
- E. All insulation must in every case fit closely to the surface to which it is applied. In each case of improper fit, the Contractor shall promptly remove and reapply insulation upon request by the Engineer and at no extra cost.
- F. All irregular surfaces shall have the insulation applied evenly to a thickness at least equal to and of the same number of layers as adjacent surfaces.
- G. Longitudinal seams of exposed insulation shall be directed away from normal view.
- H. Insulation passing through sleeves or other openings shall be continuous. Install metal frames to protect edges of openings in insulation. Coordinate insulation densities with the requirements of approved firestop system being installed at all firewall penetrations.
- I. Where insulation is required on piping systems that utilize pipe penetrations or sleeves, the penetration shall be large enough to run the insulation continuous.
- J. For valves, fitting, flanges and accessories, the insulation shall be of the same thickness and conductivity as the adjoining pipe insulation, either premolded or segmented. The insulation shall be placed around the item abutting the adjoining pipe insulation, or if nesting size insulation is used, overlapping two inches or one pipe diameter. Loose fill mineral wool or insulating cement shall be used to fill the spaces or void between adjoining segments.
- K. Provide a minimum of two inches overlap of jacket material on all piping system longitudinal seams. Use circumferential overlaps on all weatherproof jacketing. All non-weatherproof jacketing longitudinal joints shall be located so that they are not visible from normal operating level. For weatherproof jackets, install joint side down, to shed water.
- L. Breaks and punctures in the jacket material shall be patched by wrapping a strip of jacket material around the pipe and cementing, stapling, and coating as noted for butt strips. Patch shall extend not less than 1-1/2 inches past the break.
- M. Poly-Vinyl Chloride (PVC) fittings and pipe coverings shall be installed over the insulation, as specified, and secured by taping with PVC vapor barrier tape, or metal or plastic tacks made for securing PVC coverings.
- N. Aluminum jacketing, as specified, shall be installed over insulation to form a weathertight system. The jacket may be factory installed on insulation. The jacket shall overlap not less than two inches at longitudinal and circumferential joints and shall be secured with bands at not more than 12-inch centers. Circumferential joints shall be sealed with a coating recommended by the insulation manufacturer for weatherproofing seams and joints in aluminum jackets.
- O. At all hanger locations, install insulation shields and high density jacketed insulation inserts between shield and pipe. Where insulation is subject to compression at points over 180 degrees apart, e.g. riser clamps, U-bolts, trapezes, etc.; fully encircle pipe with 2 protection shields and 2 high density jacketed fibrous glass insulation inserts within supporting members.

3.02 SYSTEM TYPES

- A. Mineral Fiber/Fiberglass with All Purpose Vapor Barrier Jacket

1. Piping shall be covered with insulation with factory applied vapor-barrier jacket. Vapor seal shall be maintained. Jackets, jacket laps, flaps, and bands shall be securely cemented in place with vapor barrier adhesive. Jacket overlap shall be not less than 1.5 inches. Jacketing bands for butt joints shall be 3 inches wide.
2. Exposed to view fittings and valve bodies shall be covered with preformed pipe-fitting insulation of the same thickness as the pipe-barrel insulation. Fitting insulation shall be temporarily secured in place with light cord ties. A 60 mil coating of white indoor vapor-barrier coating shall be applied and, while still wet, wrapped with glass lagging tape with 50% overlap, and shall be smoothly blended into the adjacent jacketing. Additional coating shall be applied as needed and rubber gloved to smooth fillet or contour coating, then allowed to fully cure before the finish coating is applied. On-the-job fabricated insulation for concealed fittings and special configurations shall be built up from mineral fiber and a special mastic consisting of a mixture of insulating cement and lagging adhesive. Where stranded vapor-barrier jacketing cannot be used, the surfaces shall be made vapor tight by using coating and glass lagging cloth or tape.
3. Pipe insulation shall be set into an outdoor vapor-barrier coating for a minimum of 6 inches, at maximum of 12 foot spacing and the ends of the insulation sealed to the jacketing with the same material to provide an effective vapor-barrier stop.
4. Staples shall not be used in applying insulation. Vapor-barrier materials shall be continuous over all surfaces, including areas inside pipe sleeves, hangers, and other concealments.
5. Piping insulation at hangers shall consist of 13 pound/cubic-foot density, fibrous-glass inserts or expanded, rigid, vapor-barrier jacket where required, glass cloth mesh tape, and vapor-barrier coating.
6. White bleach kraft paper side of jacketing shall be on the side exposed to view.
7. All fittings, elbows, tees, etc. shall be covered with PVC jacketing.
8. All outdoor piping to be provided with Aluminum jacketing.

3.03 INSULATION THICKNESS

- A. All piping and equipment installed shall be insulated unless otherwise indicated on the Contract Drawings. Unless otherwise indicated, all miscellaneous components associated with the piping systems and/or equipment being insulated shall likewise be considered a part of the system or equipment and shall also be insulated.

END OF SECTION

DIVISION 23 – HEATING, VENTILATING AND AIR CONDITIONING
SECTION 23 22 13 – PIPING

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PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. This Section defines the general requirements for the installation and modification of mechanical systems piping as required by the Contract Documents.
- B. The piping systems shall include piping materials, valves, fittings, flanges, gaskets, bolting, welding material, expansion joints, vents, hangers, supports, anchors and other components required for the proper and operational installation.
- C. Piping less than 2-1/2" shall be "field-run" by the Contractor following the general guide configuration shown on the Contract Drawings and shall function as intended by the Contract Drawings.
- D. The Contractor shall be responsible for the installation of all pipe hangers and supports in all piping systems in accordance with the details furnished with the Contract Documents.
- E. Unless otherwise indicated on the Contract Documents, the Contractor shall locate all hangers and supports in accordance with this Section and required submittals.

1.02 REFERENCES

- A. All work under this section shall conform to the requirements of the "New York State Building Code", and the regulations of governmental authorities having jurisdiction.
- B. All work performed and material supplied under this Section shall be in accordance with the latest addenda thereto of the applicable codes, standards, specifications, regulations, procedures, and tests as cited in Section 01 11 00 – "Mechanical Summary of Work".
- C. Where components or materials are specified to conform to requirements of the standards of organizations such as American Society of Mechanical Engineers (ASME) or Underwriters Laboratories (UL), that use of label or listing as method of indication compliance, proof of such conformance shall be submitted and approved by the Engineer. The label or listing of the specified organization will be acceptable evidence.

1.03 SUBMITTALS

A. General

- 1. The Contractor shall furnish shop drawings for all proposed equipment that will be furnished to complete the work in accordance with the General Requirements section of the Contract Documents and this Section.
- 2. Additional submittals, as necessary, for each manufactured item shall include but are not limited to the following: manufacturer's descriptive literature, shop drawings, catalog "cuts", and mill reports.
- 3. Piping 2-1/2 inch and smaller shall be shown as single line and 3-inch and larger double line.

B. Specific Submittals:

- 1. Pipe
- 2. Pipe Fittings
- 3. Gaskets
- 4. Supports and Hangers
- 5. Pipe Labels

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer, with minimum 5 years experience, who has completed Work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Construction Site Quality: Contractor shall maintain, on site, sufficient office, field engineering, and field supervision staff to assure that all materials and layout correspond with the requirements of the Contract Documents and approved drawings.
- C. Flanged joints shall be provided for sizes larger than two inch at all connections to equipment and where disassembly may be required. For sizes two inches and smaller, flanged joints or unions shall be provided according to the end connection used.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Materials shall be delivered to the site, ready for use, in the manufacturer's original and unopened containers or packaging. Packaging to contain material description and manufacturer information.
- B. All delivered materials, products or equipment shall be stored under cover in a dry, weather-tight, and adequately ventilated location. All materials shall be elevated off of the ground.

PART 2 - PRODUCTS

2.01 GENERAL

- A. All steels and steel products shall be from domestic steel mills and written proof as to the steel product's origin shall be submitted.
- B. Unless otherwise specified herein, all materials and articles incorporated in the Work covered by this Section shall be factory new and without blemish or defect. Salvage or rebuilt components or materials will not be accepted.
- C. Carbon or alloy steel having carbon content of more than 0.35% shall not be used in welded construction or be shaped by oxygen cutting process or other thermal cutting processes.
- D. All valves, unions, flanges, etc. shall bear markings in accordance with MSS SP 25 including the manufacturer's name or trademark, the material of construction, and symbols to indicate the service conditions for which the manufacturer rates the valve. Other markings shall be included if required by the applicable standard.

2.02 PIPING/TUBING

- A. All piping covered by this Section, unless otherwise indicated, shall be designed in accordance with ANSI/ASME B31.9. The Contractor shall furnish all materials and components as specified in this Section, and on the Contract Drawings. The materials and components shall include, but not be limited to the following:
 - 1. All carbon, stainless and alloy steel pipe and fittings.
 - 2. All non-ferrous piping and fittings (as allowed within the limitations of B31.9).
 - 3. All hangers and supports.
 - 4. All valves and other components required to make the piping system complete.
- B. Pipe Fabrication

1. All piping shall be fabricated to the applicable ANSI Dimensional Standard unless otherwise indicated in the Contract Document. Steel pipe shall be seamless. Unless otherwise indicated, all condensate return piping shall be schedule 80 minimum wall thickness.
2. All threaded steel piping connections and nipples shall be made with seamless pipe, with schedule 80 minimum wall thickness.
3. All piping material shall be provided in accordance with the ASME Material Specification indicated on the Contract Drawings.
4. The minimum wall thickness at any point shall not be more than 12.5% under the nominal wall thickness specified.
5. For pipe NPS 1-1/2 inch and under, the outside diameter at any point shall not vary more than 1/16 inch over nor more than 1/32 inch under the standard specified. For pipe NPS 2-inch and over, the outside diameter shall not vary more than + 1% from the standard specified.
6. All steel shall be carbon steel, A-53B/A-106B – Roll or cut grooved-ends as appropriate to pipe material, wall thickness, pressures, size and method of joining. Pipe ends to conform to ANSI/AWWA C-606.

2.03 FITTINGS

A. General

1. All fittings such as elbows, tees, caps, couplings, unions, reducers, flanges, weldolets and threadolets shall be commercially available products.
2. All fittings shall be provided in accordance with ASTM Material Specifications and ANSI Dimensional Standards.
3. Elbows with 1.5 diameter radius shall generally be used in all piping systems. Short radius and reducing elbows shall only be used where required due to space limitations or equipment connections, and only when approved by the Site Representative.
4. All fittings used in the piping systems must be within the material, size, pressure and temperature limitations of the governing standards.
5. The piping shall be mechanically connected grooved coupling piping system.
6. Acceptable manufacturers for mechanically connected grooved fittings are Victaulic, Gruvlok and Viking.
7. Hole cut bolted branch outlets shall be full-bodied outlet (U-bolt outlets will not be permitted) style 920 by Victaulic or approved equal by Gruvlok or Viking.

B. Pipe Couplings

1. Mechanically connected grooved couplings shall be used in piping system.
2. Grooved couplings shall meet the requirements of ASTM F-1476.

C. Dielectric Fittings

1. At connections between piping systems of dissimilar metals, dielectric type insulating fittings or unions shall be furnished. Acceptable manufacturers are Epco Sales, Walter Vallett Company, Atlas Products, Eclipse, Inc., or approved equal.

D. Strapless Outlet Fittings

1. ½" (DN15) or ¾" (DN20) NPT outlet on 4" (DN100) and larger heater sizes rated for 300 PSI equal to Victaulic style 923.

2.04 JOINTS

1. Mechanical coupling:
 - a. Grooved couplings shall be of same manufacturer as used for grooved fittings.
 - b. Malleable iron in conformance with ASTM Specification A47, equal to Victaulic No. 75 or rigid mechanical coupling equal to Victaulic style No. 005, ASTM A-536.
 - c. Gaskets:
 - (1) Wet systems: Grade E EPDM gasket, ASTM Specification D2000.
 - d. Rigid or zero flex type couplings will be used when operating pressures may cause piping to move out of place or sway on hangers. Flexible couplings may be used where piping is properly braced or clamped into rigid position.

2.05 GASKETS

A. General

1. Gaskets shall be provided in accordance with the applicable sections of the piping class into which it is to be used.
2. Asbestos containing materials shall not be used.
3. Gaskets shall be made of materials that are not injuriously affected by the fluid or by temperature.
4. Gaskets shall also be supplied in accordance with B31.9 Building Services Piping Code.

2.06 PIPE HANGERS AND SUPPORTS

A. General

1. The design, materials and installation of pipe supporting elements shall be in accordance with the rules of MSS-SP-69 and MSS-SP-89. Supporting elements shall be capable of carrying the sum of all concurrently acting loads (i.e.; weight, expansion/contraction, pressure etc.) including that of any hydrostatic testing.
2. Piping supports shall be designed to provide the expected supporting effort and allow pipeline movement with thermal changes without causing overstress.
3. All parts of the supporting equipment shall be fabricated and assembled so that they will not be disengaged by movement of the supported piping.
4. The maximum safe loads for bolts, threaded hanger rods, and all other threaded members shall be based on the root area of the threads.
5. All load bearing and protective housing and components for supports, restraints, guides, anchors, etc. used for the support of piping shall be made of steel or wrought iron. Cast iron may be used in compression parts only.
6. All components parts of hangers, supports, anchors, attachments, alignment guides, and secondary structural steel shall be delivered to the job with one shop coat of rust resisting primer. Threads on bolts and rods shall not be painted, but shall retain a light coat of oil to prevent rust.

7. All auxiliary steel required for the installation or support of piping systems or equipment shall be provided and installed under this Contract, unless otherwise indicated. Auxiliary steel shall be designed on the basis of the allowable stresses as per AISC Steel Handbook or applicable local building codes.
8. Standard component supports that are catalog items shall be used wherever possible and shall be capable of vertical adjustment, if the support is a rod hanger type. Rod couplings are not acceptable.
9. The Contractor shall furnish all pipe supports and shall be responsible for providing and locating all piping supports including those detailed by the Contract Documents.
10. The Contractor shall assure that materials for all pipe supports and appurtenances shall be identifiable to ASTM specification number with clearly established minimum physical properties, in accordance with ANSI/ASME codes, and shall be suitable for the service intended.
11. The allowable stresses for the base material of all parts of supporting and restraint assemblies shall not exceed the appropriate allowable stress at the maximum operating temperature.
12. These specifications list pipe hanger and support systems using information from B-Line Systems, Inc. other manufacturers are approved subject to compliance to these documents. The following are approved manufacturers:
 - a. Grinnell Corporation
 - b. B Line Systems, Inc.
 - c. Carpenter & Paterson, Inc., or approved equal.

B. Wall Supports

1. Pipes 4 inch and smaller:
 - a. Carbon steel hook, B3191.
 - b. Carbon steel J-Hanger, B3690.
2. Pipes larger than 4 inch:
 - a. Welded strut bracket and pipe straps, B3064 and B2000 series.
 - b. Welded steel brackets, B3066 or B3067, with roller chair or adjustable steel yoke pipe roll, B3120 or B3110. Use pipe protection shield or saddles on insulated lines.

PART 3 - EXECUTION

3.01 ERECTION OF PIPING SYSTEMS

A. General

1. Although all systems may not be fully described as to every piece of pipe and associated component, the Contractor shall be responsible to completely install the necessary piping to provide a fully operation system.
2. All piping systems and components shall exceed the design pressure and temperature stress allowances outlined in their appropriate ANSI specification.
3. Grooved Mechanical Coupling and Fitting: Install system using mechanics trained by the grooved mechanical coupling manufacturers representative and conform to latest published

Victaulic specifications, ANSI/AWWA C-606, UL, FM, NFPA or other standards as applicable.

4. Unless otherwise specified, fabrication, assembly, threading, welding, soldering, and brazing shall conform to NFPA Z223.1, ANSI B31.9 and the applicable codes and ordinances local to the place of installation, and in accordance with the specifications and standards referred herein for all piping systems.
5. Contract Drawings shall be considered as construction quality, showing general arrangements, positions, locations and connections of equipment, accessories, pipes and ducts. Specific installation details are provided as necessary when specific equipment has been identified in the Contract Documents.
6. The work under this Section shall include obtaining all information and measurements which are required to make the work fit properly and to avoid interference with the work of other trades.
7. If building openings are needed and are not already available for use in receiving shop fabricated or field run piping the Contractor shall be responsible to provide them on approval from the Engineer.

B. Piping Installation

1. All piping shall be run perpendicular and/or parallel to floors, walls, etc, unless otherwise indicated on drawings. Piping and valves shall be grouped neatly and shall be run so as to avoid reducing headroom or passage clearance.
2. Piping shall in no way obstruct doorways, passageways, or operating aisles, or interfere with access to equipment. Sufficient clearance shall be allowed for equipment repairs, servicing, removal and replacement of parts, headroom and walkways.
3. Offsets shall be made in piping where required to avoid interference's with other work, to increase head room beneath, from expansion loops, or changes in direction as may be indicated on the Contract Drawings, or as required to permit freedom of movement during expansion or contraction without causing undue stresses to the pipe or equipment. Offsets shall be installed so as not to interfere with drainage or cause the formation of air pockets.
4. All field run piping shall be accurately cut to measurements established at the construction site. All overhead piping shall be run as high as possible under structural members or as located on the drawings.
5. Provide minimum side clearance of two inches unless otherwise specified, between parallel lines, outside of insulation or between flange and pipe insulation, to permit ready access for removal or maintenance of pipeline. Take into consideration thermal movements in determining side clearances. Minimum unobstructed walkway clearance shall be 3'-0" unless otherwise specified.
6. Lines routed in concrete trenches shall be located to provide at least 2" clearance above the finished trench floor (this includes flanges, fittings or other parts). For screwed piping 4" clearance shall be maintained.
7. Piping shall be installed without springing or forcing, to properly clear all openings and equipment. Cutting or other weakening of structural members to facilitate pipe installation shall be prohibited.

8. Piping subject to expansion shall be installed to permit free expansion and contractions without damage to joints or supports and without interference from other pipes, equipment, and/or structures.
9. Screwed pipe joints shall be made up perfectly tight without the use of any filler except oil, graphite, Teflon tape or approved equal compound. If any leaks occur, the defective parts must be remade with new material and not caulked. Bushings shall not be used in place of reducers. Bushings may be used for gauge tapings and thermometer wells.
10. Mitering of pipe or use of field-fabricated welding fittings is prohibited.
11. Water carrying pipe shall not be installed over switchgear or transformers unless approved by the Engineer.
12. All piping shall be installed in a manner that permits draining of all water and venting of all vapors as necessary i.e. high point vents and low point drains.
13. Reducing fittings shall be used for changes in pipe size; the use of bushings will not be permitted. In horizontal lines, reducing fittings shall be of the eccentric type to maintain the bottom of the lines in the same place for steam lines and to maintain the top of the lines in the same place for water lines.
14. Unless otherwise indicated on the Contract Drawings, condensate and gas piping shall be sloped down, and water piping shall be sloped up in the direction of flow. No slope shall be less than 1/4 inch in 20 feet.
15. The Contractor shall supply and install all required instrument, sampling and control piping, tubing, valves, tops, etc. as required by the Contract Documents.
16. Fabricated piping shall be correctly positioned relative to equipment nozzles before welding.
17. Erection of all equipment piping not furnished as an assembled equipment package, shall be installed in the field in accordance with Contract Documents.

C. Branch Connections

1. No nozzles or branch connections shall be fabricated in the shop or field by attaching directly to the run pipe by welding if the branch is of the same NPS or greater than the run piping.
2. Full size branch connections shall be made with ANSI standard fittings as specified in the applicable parts of this Section.
3. Reduced size branch connections shall be made with fittings specifically designed for such purposes.
4. "O-let" style of connections may not be used.
5. Branch reinforcement is not necessary when the wall thickness of the main run and branch are sufficiently in excess of that required to sustain the design pressure.

D. Threaded Joints

1. Threaded joints may be used with fittings made in accordance with the applicable ANSI standards and within the material size, pressure and temperature limitations of those standards, along with the specified class of the indicated system.
2. All thread on piping and components shall be taper threads in accordance with ANSI B1.20.1 & 3.

3. Pipe with a wall thickness less than that of Schedule 80 steel pipe shall not be threaded, regardless of service.
4. Where steel pipe is threaded and used for steam service at pressure above 250 psig or for water service above 100 psig with water temperature above 220°F, the pipe shall be seamless.
5. Where permitted, screwed unions shall be of the standard ground joint seat type.
6. Bronze or brass screwed joints shall be made up tight with compound. The use of wicking is prohibited.
7. Where screwed flanges are specified or noted to be used, all pipe after having been fully and finally made up, shall have the ends fall slightly short of the joint faces of the flange so that such joints shall be made with the flange faces only.
8. The Contractor shall submit to the Engineer what kind or type of compound he proposes to use in making up screwed joints. Compounds shall not be used in the event of seal welding a screwed joint; nor should seal welding of a screwed joint be done unless specifically called for on the Contract Drawings or otherwise stated.

E. Curved Segments of Pipe

1. Any pipe bent to form a curved segment shall maintain the normal wall thickness.
2. Any bending of pipe shall not exceed a flattening in excess of 8% of the average measured outside diameter of the pipe before bending.

F. Pipe Sleeves

1. All pipes passing through walls, floors, partitions, or roof construction shall be provided with sleeves furnished and installed by the Contractor. Sleeves shall be of sufficient diameter to accommodate pipe covering where lines are insulated.
2. Sleeves through concrete walls, floors, partitions and roof slabs shall be standard weight galvanized steel pipe. Sleeves through steel platforms and grating shall be standard weight black steel pipe. Space between pipe, tubing, or insulation and the sleeve shall be not less than 1/4". Sleeves shall be held securely and in proper position during and after construction.
3. Sleeves in exterior walls shall have intermediate waterstop flange, and shall have space between pipe and sleeve caulked watertight. Sleeves in concrete floors shall be of sufficient length to be flush with bottom of slab, extend 1" above the finished floor, and shall be securely anchored to the slab. Sleeves in walls and partitions shall be made flush with each surface, unless otherwise specified. Sleeves through roof construction shall be anchored to the roof construction. Sleeves for pipes passing through steel platforms and gratings shall extend 1" above and 1" below the deck surface, and shall be securely anchored to the platform or grating.
4. Pipe and sleeves passing through roof construction shall be provided with metal flashing, counterflashing and rain hood, in accordance with details when shown on the Contract Drawings.

3.02 INSTALLATION OF HANGERS AND SUPPORTS

A. General

1. Existing structural steel members shall be used as a point of support wherever possible. All hanger attachments to existing, or supplementary steel shall be a manufacturer's standard clamp or made by welding. Industry acceptable standard welding components shall be used.

2. Drilling of structural steel to attach hangers or supports is not permitted.
3. Component support fillet welds shall have a minimum size based upon the thickness of the thicker member to be joined and in accordance with the table below:

Thickness of the Minimum Fillet

Thicker Member (t)	Weld Size
1/4"	1/8"
1/4" to 1/2"	3/16"
1/2" to 3/4"	1/4"
3/4" to 1-1/2"	5/16"

4. No piping shall be permanently supported by wire, rope, wood, or other makeshift devices or from other pipes.
5. Horizontal or vertical pipe runs should be supported preferably at locations of least vertical movement.
6. Pipe supports shall be placed as close as possible to concentrated loads such as flanges, valves, strainers, and on branch lines close to the connection, and to terminal connections.
7. Vertical runs of pipe over 15 feet long shall be supported by hangers placed not less than one foot from the elbows on the connecting horizontal runs.
8. Where practical, riser pipe shall be supported independently of the connected horizontal piping.
9. Pipe support attachments to the riser piping shall be riser clamps of a design equal to Grinnell Hanger Standard 40.
10. The design loads for rigid riser supports shall be as follows:
 - a. Water-Filled Lines - Design shall be based on the maximum operating load. Selection of riser clamp stock size shall be based on MSS-SP-58 and ANSI B31.1 Section 121.1.2.
11. Where changes in direction of the piping occur between supports, the distance between supports shall be a maximum of three-fourths the span listed in ANSI B 31.1, or above (whichever is smaller).
12. Rod hanger attachments (clevises, turnbuckles, etc.) shall be secured with locking nuts. At least 1/4" of thread of rod shall be left exposed.
13. Holes in support steel for rods and bolts up to 15/16" diameter shall be 1/16" larger than the rod or bolt diameter, and holes for rods and bolts over 1" diameter shall be 1/8" larger than the rod or bolt diameter, unless otherwise noted.
14. Bolts shall have hexagonal regular heads and conform to ANSI B 18.2.
15. All nuts and jam nuts shall be hexagonal and conform to ANSI B 18.2.
16. All threads on any threaded parts such as hanger rods, nuts, turnbuckles, bolts, etc. shall conform to ANSI B 1.1 for the Coarse Thread Series with a Class 2 fit.
17. Hanger rods shall be subjected to tensile loading only. At hanger locations where lateral or axial movement is anticipated, suitable linkage shall be provided to permit swing.

18. Where horizontal piping movements are such that the hanger rod angularity from the vertical is greater than four degrees from the cold to hot position of the pipe, the hanger pipe and structural attachments shall be offset in such a manner that the rod is vertical in the hot position.
19. Sliding supports shall provide for the expected thermal movement of the pipe. The design of the support shall include the load due to frictional resistance.
20. Small bore piping and instrument tubing, two-inch and under, running in banks shall be supported by tray type assemblies where feasible.
21. Saddles, bases or suitable metal shields shall be used at points of bottom support on insulated pipe and accommodate the full thickness of the insulation. The space between saddles and pipe shall be filled with insulation of the same type and thickness as the adjacent pipe.
22. Flexible piping runs shall be stabilized and controlled by suitable anchors, restraints, and guides preferably located at points of zero thermal movement. Standard U-Bolts shall be used as guides on 2" diameter, and smaller piping. All guides shall have clearance of 1/16 to 1/8 inch.

B. Anchors

1. Piping shall be anchored where noted on the Contract Drawings and where required to localize expansion or to prevent undue strain on piping, branches, or equipment.
2. Pipe anchors shall consist of heavy forged or welded construction of approved design with steel collars, lugs, and bolts for clamping and attaching anchor braces, unless otherwise shown on the Contract Drawings.
3. Anchor braces shall be installed in the most effective manner to obtain the desired results. No supports, anchors, or stays shall be attached in locations where their installation or the weight or expansion of the pipe lines will result in damage to the building construction.
4. Restraining pipe supports shall be provided wherever excessive pipe movement occurs.

C. Concrete Inserts

1. Cast in place spot concrete inserts shall be used where applicable, either steel or malleable iron body, B-Line B2500 or B3014. Spot inserts shall allow for lateral adjustment and have means for attachment to forms. Select inserts to suit threaded hanger rod sizes, N2500 or B3014N series.
2. Continuous concrete inserts shall be used where applicable. Channels shall be 12 gauge, ASTM A570 Grade 33 structural quality carbon steel, complete with styrofoam inserts and end caps with nail holes for attachment to forms. The continuous concrete insert shall have a load rating of 2,000 lbs./ft. in concrete, B-Line B221, B321, or B521. Select channel nuts suitable for strut and rod sizes.

D. Hanger and Support Spacing

1. Unless otherwise shown, specified or calculated hangers for horizontal pipe shall be adjustable clevis type. Hanger spacing and rod sizes for individually supported horizontal straight piping shall be in accordance with the following unless otherwise specified in the Specifications or on the Contract Drawings.
2. Horizontal steel piping shall be supported in accordance with MSS SP-69 Tables 3 and 4, excerpts of which follow below:

NOMINAL PIPE SIZE	ROD DIAMETER	MAXIMUM SPACING
1/2" to 1-1/4"	3/8"	7'
1-1/2"	3/8"	9'
2"	3/8"	10'
2-1/2"	1/2"	11'
3"	1/2"	12'
3-1/2"	1/2"	13'
4"	5/8"	14'
6"	3/4"	17'

3.03 TESTING

- A. Tests for all new piping shall be performed by the Contractor in accordance with ANSI B31.9, Power Piping Code, and the requirements noted in this Section of this Specification. All materials and equipment required to perform the hydrostatic test shall be furnished by the Contractor. All tests shall be performed satisfactorily prior to insulation or backfilling.
- B. Where water is used for hydrostatic tests, only sanitary water of a potable quality shall be used. Test pressures shall be maintained in the systems for at least 30 minutes with no visible leaks or appreciable loss of pressure.
- C. Unless otherwise specified, all piping shall be subjected to a pressure equal to 1-1/2 times the normal working pressure, or to 100 psig, whichever is greater.
- D. All tests shall be certified and documented by qualified representatives of the Owner.
- E. Fabricated piping shall not be connected to equipment until testing has been completed. Prior to the application of pressure, restraining devices shall be applied to prevent distortion during pressure testing. All chips, dirt and debris shall be removed from piping before testing. All air shall be expelled from lines prior to applying hydrostatic test pressure.
- F. Any defective joints in new work shall be repaired and retested by the Contractor.

3.04 INSPECTION AND EXAMINATION

A. General

1. The Owner or his designated representative will provide his own specification compliance inspection and examination of the Contractor's work. This does not relieve the Contractor of his responsibility to fully inspect and examine all of his work prior to the facility's review.
2. At minimum, all portions of materials, components, joints, supports and other piping elements that are assembled or erected during the project shall be given a full visual examination for compliance to the specification and procedures.
3. In addition to the items listed in No. 2 above, the minimum evaluation criteria on the limitations on imperfections in pipe joining indicated in ASME/ANSI B31.9 Chapter VI, Paragraph 936.6 shall be strictly adhered to.

B. Visual Inspection

1. Visual examinations will be performed by the Owner on 100% of all field joints to detect deficiencies in assembly.

3.05 CLEANING

- A. The Contractor shall thoroughly clean all new piping systems, equipment and components of all contaminants such as oil, grease, loose mill scale, dirt, corrosion product, or any other foreign substances. The contractor shall install drains with isolation valves on all new piping to permit flushing of the pipe. Temporary strainers shall be furnished at all connected equipment where draining and flushing can not be performed. The Contractor shall remove the temporary strainers after the fluid has been circulated through the system.
- B. All cleaning of piping and components shall be performed to the satisfaction of the Owner's designated representative. If not satisfactory, the Contractor shall bear all costs for disassembly, recleaning, and reassembly.
- C. Piping shall be clean inside and outside at time of shipment. All waste, such as metal chips and filings, waste, rags, debris, shall be removed from the interior of each piping unit. All mill scale, rust, oil, grease, chalk, crayon, paint marks, sand and other deleterious material shall be removed from interior and exterior surfaces.
- D. All ferritic materials shall be descaled on exterior and interior surfaces by mechanical or chemical means. When chemical cleaning is employed, material shall exhibit no evidence of pitting or other excessive attack.
- E. The Contractor shall install temporary bypass piping around all control valves, coils and equipment where piping system is not flushed prior to connection. After flushing the Contractor shall remove all temporary piping.
- F. All carbon steel piping for lube oil system shall be thoroughly cleaned to remove grit, mill scale, rust, debris and other deleterious material. After cleaning, flushing and dosing, the pipes shall be fogged with lube oil to keep it in a clean, rust-proof condition until installation.

3.06 PIPING IDENTIFICATION

- A. General
 - 1. The Contractor shall identify all equipment and material provided under this Contract.
- B. Piping Identification
 - 1. All piping shall be provided with identification and flow arrows to further identify the service carried.
 - 2. Positive identification of the contents of a piping system shall be by lettered legend giving the name of the contents in full or abbreviated form.
 - 3. Contents shall be identified by legend with sufficient additional details such as temperature, pressure etc. necessary to identify the hazard.
 - 4. Legend shall be brief, informative, pointed, and simple for greatest effectiveness. Legends shall be applied close to valves or flanges and adjacent to changes in direction, branches, and where pipes pass through walls or floors; and at intervals on straight pipe runs sufficient for identification.
 - 5. Attention shall be given to visibility with reference to pipe markings. Where pipelines are located above or below the normal line of vision, the lettering shall be placed below or above the horizontal centerline of the pipe.
 - 6. Marker Types:

- a. Snap-on Marker: One piece wrap around type constructed of precoiled acrylic plastic with clear polyester coating, integral flow arrows, legend printed in alternating directions, 3/4 inch adhesive strip on inside edge, and 360 degree visibility.
 - b. Strap-On Marker: Strip type constructed of precoiled acrylic plastic with clear polyester coating, integral flow arrows, legend printed in alternating directions, factory applied grommets, and pair of stainless steel spring fasteners.
 - c. Stick-On Marker: Pressure sensitive adhesive backed type constructed of vinyl with clear polyester coating, and integral flow arrows for applications where flow arrow banding tape is not being used.
 - d. Banding Tapes: Pressure sensitive adhesive backed type constructed of vinyl with clear polyester coating.
 - (1) Plain Tape: Unprinted type; color to match pipe marker background.
 - (2) Flow Arrow Tape: Printed type with integral flow arrows; color to match pipe marker background.
 - e. Pipe Size Labels: Pressure sensitive adhesive backed type constructed of vinyl with clear polyester coating, vertical reading pipe size in inches, and legend size matching adjacent pipe marker.
7. Contrast shall be provided between color field and legend for readability, legend shall be in English using standard style of letters. Utilize the following tables in determining legend criteria:

<u>Outside Dia. of Pipe or Covering (in)</u>	<u>Legend of Color Field (in)</u>	<u>Letter Size(in)</u>
3/4 - 1-1/4	8	1/2
1-1/2 - 2	8	3/4
2-1/2 - 6	12	1-1/4

8. For identification of materials in pipes of less than 3/4 inch in diameter use permanently legible tags similar to required valve tags.
9. All underground piping shall have a bright colored continuously printed plastic ribbon tape of not less than 6 inch wide by 4 mil thick installed above the pipe and not greater than 8 inches from the surface of the ground.
10. Installation
 - a. Install the Work of this Section in accordance with the manufacturer's printed installation instructions, unless otherwise specified.
 - b. Stick-On Pipe Markers:
 - (1) Install minimum of 2 markers on each run of pipe, 90 degrees apart on visible side of pipe.
 - (2) Encircle ends of pipe markers around pipe or insulation with banding tape with one inch lap. Use plain banding tape on markers with integral flow arrows, and flow arrow banding tape on markers without integral flow arrows.

- c. Pipe Size Labels: Install labels adjacent to each marker and upstream from flow arrow. Install a minimum of 2 pipe size labels on each run of pipe, 90 degrees apart on visible side of pipe.
- d. Pipe Service Identification Tags: Attach tags to piping being identified with "S" hooks or jack chains.

11. Piping Identification Schedule

- a. Piping Identification Types:
 - (1) Piping or Insulation under 3/4 inch O.D.: Pipe identification tags.
 - (2) Piping or Insulation 3/4 inch to 5-7/8 inch O.D.: Snap-on marker or stick-on marker.
 - (3) Piping or Insulation 6 inch O.D. and Larger: Strap-on marker or stick-on marker.
- b. Identify exposed piping, bare or insulated, as to content, size of pipe and direction of flow, with the following exceptions:
 - (1) Piping in non-walk-in tunnels or underground conduits between manholes.
 - (2) Piping in furred spaces or suspended ceilings, except at valve access panels where valves and piping shall be identified as specified for exposed piping systems.
 - (3) Piping in finished spaces such as offices, class rooms, wards, toilet rooms, shower rooms and spaces as specified.
- c. Locate piping identification to be visible from exposed points of observation.
 - (1) Locate piping identification at valve locations; at points where piping enters and leaves a partition, wall, floor or ceiling, and at intervals of 20 feet on straight runs.
 - (2) Where 2 or more pipes run in parallel, place printed legend and other markers in same relative location.

- 12. Acceptable Manufacturers of pipe labels and valve tags include W.H. Brady Company and Seton Pipe Marking Products.

C. System Identification

- 1. The Contractor shall provide 1/2 scale drawings of the flow diagrams at the project completion. The drawings shall represent "as built" drawings of the respective system.
- 2. The Contractor shall provide the drawings with a matted frame and glare resistant glass.

3.07 PIPING SYSTEM SPECIFICATIONS

- A. The following Piping Material Data Sheets specify the piping fabrication requirements and are an integral part of this Specification. The Data Sheets are included in Attachment A at the end of this Section.
 - 1. Valves numbers specified on the Data Sheets refer to Valve Specification Sheets included in Attachment A of in specification Section 23 05 23 – "General Duty Valves".

END OF SECTION