



Project Manual

For construction contracts greater than \$20,000

RE-BID

NEUBERGER MUSEUM SOUTH WEST COURTYARD SU-111320

Dated March 19, 2021

**RE-BID Proposal Due Date
March 30, 2021**

State University of New York, Purchase College
735 Anderson Hill Road
Purchase, New York 10577-1402
Elizabeth Pleva, Interim Director of Procurement & Accounts Payable

Project Number: RE-BID SU-111320
Project Name: Neuberger Museum South West Courtyard
Agency/Div Code: SUNY Purchase College 28260

Date: 3/19/2021

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3. [Exhibit A-1 Affirmative Action Clauses](#)

Attachments –Contractor Documentation

4. [Form 7554-10](#) - Bid Bond and Acknowledgement (*required with bid*)
5. Affirmative Action and Minority & Women Owned Business Enterprises *from SUNY Procedure Item #7557 “Participation by Minority Group Members and Women (MWBEs) with Respect to State University of New York Contract” (applies >\$100,000)*
 - a. [Form 7557-121b](#) – MWBE Prospective Bidders Notice
 - b. [Form 7557-107](#) - M/WBE Utilization Plan (*required within seven days of the bid*)
 - c. The Contractor’s EEO Policy Statement or [Form 7557-104](#) (*required within seven days of the bid*)
 - d. [7557-108](#) - M/WBE-EEO Work Plan or EEO Staffing Plan (*required within seven days of the bid*)

Note: In accordance Procedure Item #7557 MWBE Utilization Plans, EEO policy statements and EEO Work Plans are due within seven days of submittal of the bid.

6. Service Disabled Owned Business Enterprise *from SUNY Procedure Item #7564 “Participation by Service-Disabled Veteran-Owned Business (SDVOBs) with Respect to State University of New York Contracts” (applies >\$100,000)*
 - a. [Form 7564-121b](#) – SDVOB Prospective Bidders Notice
 - b. [Form 7564-107](#) - SDVOB Utilization Plan (*required within seven days of the bid*)

Attachments –Additional Contractor Documentation (required after bid opening from the low bidder)

7. State Finance Law §§139-j and 139-k *from SUNY Procedure Item #7552 “Procurement Lobbying Procedure for State University of New York” (applies >\$15,000)*
 - a. [Form A](#) - Summary: Policy and Procedure of the State University of New York Relating to State Finance Law §§139-j and 139-k
 - b. [Form B](#) - Affirmation with respect to State Finance Law §§139-j and 139-k
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- Bidder’s Certifications (State Finance Law §139-l, Non-collusive bidding, Executive Order 177)
8. *from SUNY Procedure Item #7554 “Construction Contracting Procedures*
 - a. [Form 7554-20](#) Bidder’s Certifications
9. Procurement Forms *from SUNY Procedure Item #7553 “Purchasing and Contracting (Procurement)*
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10. Bonds and Certificate of Insurance *from SUNY Procedure Item #7554 “Construction Contracting Procedures*
 - a. [Form 7554-11](#) Labor & Materials and Performance Bonds (*applies >\$50,000*)
 - b. [Form 7554-12](#) Certificate of Insurance (*applies to all contracts*)
 - c. NYS Workers Compensation and Disability Insurance (*applies all contracts*)

11. Vendor Responsibility
 - a. OSC's [Vendrep - Online System](#) or [Link to paper forms](#) (*form applies \geq \$100,000*)
12. NYS Labor Law, Section 220-a
 - a. [Form 7554-13](#)
 - i. Form AC 2947, Prime Contractor's Certification
 - ii. Form AC 2948, Subcontractor's Certification
 - iii. Form AC 2958, Sub-subcontractor's Certification

Notice to Bidders

The State University of New York at **Purchase College** will receive sealed bids for project number **SU-111320** titled ***RE-BID* Neuberger Museum South West Courtyard** until **2:00 p.m.** local time on **Tuesday, March 30, 2021** at **Purchasing & Accounts Payable Office, Campus Center South – 3rd floor, Purchase College, 735 Anderson Hill Road, Purchase New York 10577-1402**, where such proposals will be publicly opened and read aloud.

All work on this Contract is to be completed within **(120)** calendar days, starting ten (10) calendar days after the contract approval date of the New York State Comptroller.

A Pre-Bid Conference and site walk-through for prospective Bidders will be held at **11:00AM on March 24, 2021** at the Capital Facilities Planning Building conference room, 2nd Floor at Purchase College, 735 Anderson Hill Road, Purchase New York 10577-1402.

*Please note: potential bidders must RSVP to Sayim Malik, Project Manager, Capital Facilities Planning (email Sayim.malik@purchase.edu) no later than **Tuesday, March 23rd, by 2:00 PM** in order to receive the required COVID-19 release to come to campus.

For directions to Purchase College, see
<https://www.purchase.edu/admissions/travel-and-transportation/#Directions>

For a campus map, see
<https://www.purchase.edu/live/files/220-campus-map>

Purchase College is dedicated to environmentally sustainable practices and 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:
<https://www.purchase.edu/PurchaseMeansBusiness>

There will be a Question Period from **March 22th, 2021 – March 25th by noon**. During this time any questions must be submitted in writing (no telephone calls) to the following email address sayim.malik@purchase.edu. The email should reference the project in the subject line and include prospective bidder contact information and email address. A response to all questions submitted within the Question Period and any required Addenda will be posted no later than the close of business on **March 26, 2021**.

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

It is the policy of the State of New York and the State University of New York to encourage minority business enterprise participation in this project 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 **23%** for MBEs and **7%** for WBEs. The service disabled veteran owned business (SDVOB) subcontractor participation goal is **6%**.

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:

<https://labor.ny.gov/workerprotection/publicwork/OWSaccess.shtm>

The Prevailing Rate Case (PRC) Number assigned to this project is 2020012505.

Pursuant to State Finance Law §§139-j and 139-k, this solicitation includes and imposes certain restrictions on communications between Purchase College and an Offer or/Bidder during the procurement process. An Offer or/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:

Sayim Malik
Project Manager, Capital Facilities Planning
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The State University of New York reserves the right to reject any or all bids.

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

Drawings and Specifications will be issued by the Consultant upon request after payment of the deposit specified in the Notice to Bidders.

Section 3 Proposals

- (1) Proposals must be submitted in duplicate on the forms provided 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. The University accepts no responsibility for Proposals that may be delivered by any courier or other messenger service that does not contain all of the above-noted information on the outside of a sealed envelope. Facsimile or email copies of the Proposal will not be accepted.
- (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 contains 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 rejected as 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 of bids designated in the Bidding and Contract Documents or prior to the time of opening as extended by Addendum.
- (7) Bids may be modified, withdrawn or canceled only in writing or by email notice received by the University prior to the time of opening of bids designated in the Bidding and Contract Documents. A written or email 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. Upon

receipt by the University a duly authorized employee of the University, who shall note thereon the date and time of receipt and shall thereupon attach said written or email notice of modification, withdrawal or cancellation to the envelope submitted by the bidder pursuant to subdivision (1) of this

- (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 Consultant (with a copy thereof 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 Consultant as an Addendum, which will be sent to each person recorded as having received a copy of the Bidding and Contract Documents from the Consultant, and which also will be available at the places where the Bidding and Contract Documents are available for inspection by prospective bidders. Upon such emailing or delivery and making available for inspection, 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. Prospective bidders are responsible for ensuring that all addenda have been incorporated into the bid. 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.

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 of 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) Unit prices may be inserted in the Proposal by the University or the bidder at the discretion of the University. 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 Notice of Award. In the event the Proposal contains blank spaces for unit prices or the bidder 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) Alternates, if any, listed in the Proposal shall be accepted in the order indicated and will be used in combination with the Base Bid to determine the low bidder. Unit prices will not be used to determine the low bidder.
- (4) If a tie bid should occur the University reserves the right to use one of the following methods to determine the successful bidder. For tie bids between two contractors the University representative shall flip a coin, both affected contractors must be present for the coin toss. For tie bids between three or more contractors the University representative shall pull names from a bowl, hat or other container. The affected contractors must be present for the drawing.

Section 6 Payment of Bid Security

- (1) Each Proposal must be accompanied by the required amount of the bid security, which is 5% of the Total Bid, 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 a form approved by the University, 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 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 attorney.
- (2) The University will return, without interest, bid securities in accordance with the following procedure:
 - a. 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 as a replacement for a previously provided 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) A bidder must demonstrate, to the satisfaction of the University, that it has successfully completed three (3) contracts similar in size, scope and complexity to this contract within the last five (5) years.
 - a. For scope and complexity, similar work is defined as **exterior renovation of Neuberger Museum South West Courtyard, including demolition and new finishes, new plumbing, electrical etc.** work, of as further described in the General Requirements, Description of Work.

- b. The determination of relevant contract experience in terms of size, scope and complexity will be at the sole discretion of the University.
 - c. The above three projects shall be submitted on Attachment A of the Proposal (Form 7554-07), "List of Completed Similar Construction Projects" (the List). If the List is not provided or is missing information, and/or is found to have erroneous information or information that is no longer current, a Proposal may be rejected as not responsive. If requested by the University, the bidder may be permitted to add missing information, modify and/or explain erroneous information or information that is no longer current on the List. Modifications and/or explanations of the List must be received within 48 hours of receipt of the University's request.
- (2) All prospective bidders must demonstrate to the satisfaction of the University that they have the skill and experience, as well as the necessary facilities, ample financial resources, ability to manage staff and subcontractors effectively, ability to anticipate and plan construction work for optimal progress, ability to create, strive for and maintain working environments and relationships that are constructive, communicative and cooperative, 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.
 - (3) Each bidder must demonstrate 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 Base Bid plus 10 percent of the next \$900,000 plus 5 percent of the remainder of its Base 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.
 - (4). The University may make such investigation as the University deems necessary to determine the ability of any bidder to perform the Work. Bidders shall furnish to the University all information and data required by the University, including complete financial data, within the time and in the form and manner required by the University. The University reserves the right to reject any bid if the evidence submitted by or an investigation of such bidder fails to satisfy the University that such bidder is properly qualified to carry out its obligations of the contract and to complete the work contemplated therein. Conditional bids will not be accepted.
 - (5) At the time of the bid opening, all bidders and subcontractors, domestic and foreign, must be in compliance with New York State business registration requirements. Contact the NYS Department of State regarding compliance.

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. Evidence of a completed New York State Uniform Contracting Questionnaire (Vendor Responsibility Questionnaire For-Profit Construction (CCA-2)). Either email confirmation that the bidder's CCA-2 is current and certified in the New York State VendRep System (VendRep) within the last six months from the bid date, or deliver a certified paper format

CCA-2, including all attachments, to the University.

The University recommends that vendors file the required CCA-2 online via the VendRep. To enroll in and use the VendRep, see the VendRep Instructions at https://www.osc.state.ny.us/vendrep/info_vrsystem.htm or go directly to the VendRep online at <https://portal.osc.state.ny.us>. To request assistance, contact the Office of the State Comptroller's ("OSC") Help Desk at 866-370-4672 or 518- 408-4672 or by email at ciohelpdesk@osc.state.ny.us.

The paper format CCA-2 and accompanying definitions are available on the OSC website at the following location:

http://www.osc.state.ny.us/vendrep/forms_vendor.htm

- b. A working plan and schedule showing clearly, in sequence and time-scale, all significant activities of the work. 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 for the anticipated time of commencement and completion of the work and its significant phases and activities and the interrelationship between such significant activities and other items pertinent to the work. This requirement is in addition to and not a substitute for the schedule requirements of section 3.02 (Time Progress Schedule) of the Agreement. Although the working plan and schedule submitted shall not be used in determining the lowest responsible bidder, failure to submit the working plan and schedule may result in the rejection of the Proposal as not responsive.
- c. The names and addresses of the bidder's proposed subcontractor for the Asbestos Abatement work of any value, and proposed subcontractors for Electrical Work, the Heating, Ventilating and Air-Conditioning Work and the Plumbing Work for each of said work categories valued at \$100,000 or more.
 - i. For each proposed subcontractor named, provide a completed "List of Completed Similar Construction Projects (the List)." If the List is not provided or is missing information, and/or is found to have erroneous information or information that is no longer current, a proposed subcontractor may be rejected. If requested by the University, the bidder may be permitted to add missing information, modify and/or explain erroneous information or information that is no longer current on the List; modifications and/or explanations of the List must be received promptly after receipt of the University's request.
 - ii. Only one proposed subcontractor should be named for each of such trades. Proposed subcontractors of the bidder may not be changed except with the specific written approval of the University.
 - iii. The naming of the bidder itself for any of such work is not acceptable and may result in rejection of the bidder unless the bidder can demonstrate to the University that it has successfully completed or substantially completed three (3) contracts similar in size, scope and complexity for the designated work within the last five (5) years. The determination of relevant contract experience in terms of size, scope and complexity will be at the sole discretion of the University.
 - iv. The bidder will be required to establish, to the satisfaction of the Consultant and the

University, the reliability and responsibility of each of their said proposed subcontractors to furnish and perform the work described in the sections of the Specifications pertaining to each of such proposed subcontractors' respective trades. By submission of the "List of Completed Similar Construction Projects," a proposed subcontractor must be able to demonstrate that they have successfully completed or substantially completed three (3) contracts similar in size, scope and complexity for the designated work within the last five (5) years. The determination of relevant contract experience in terms of size, scope and complexity will be at the sole discretion of the University.

- v. For each of the proposed subcontractors, the bidders must submit to the University, within seven (7) calendar days after the bid opening, evidence of a completed New York State Uniform Contracting Questionnaire (Vendor Responsibility Questionnaire For-Profit Construction (CCA-2)). Either email confirmation that the subcontractor's CCA-2 is current and certified in the New York State VendRep System (VendRep) within the last six months from the bid date, or deliver a certified paper format CCA-2, including all attachments, to the University.
 - vi. In the event that the University and the Consultant reject any of said proposed subcontractors, the bidder, within two (2) working days after receipt of notification of such rejection, shall again submit to the University and the Consultant the name of another proposed subcontractor in place of the one rejected and it will be required to establish to the satisfaction of the University and the Consultant the reliability and responsibility of said proposed subcontractor; When naming another proposed subcontractor, the bidder must promptly submit the proposed subcontractor's completed "List of Completed Similar Construction Projects" and their completed CCA-2.
 - vii. The bidder will not be permitted to submit another proposed subcontractor if it designated itself for any of the aforesaid categories of work.
 - viii. Proposed subcontractors of the bidder, approved by the University and the Consultant, must be used on the work for which they were proposed and approved and they may not be changed except with the specific written approval of the University.
- d. A breakdown of the amount of the bidder's Proposal. Such breakdown shall be prepared in accordance with industry standards and include the Scope Review Appendix. 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) Except for Contracts of \$100,000 or less, within seven (7) calendar days after the opening of bids, unless otherwise directed by the University, the three low bidders shall submit to the University for its approval, a Minority and Women-owned Business Enterprise Utilization Plan ([Form 7557-107](#)).
 - (3) Except for contracts of \$100,000 or less, within seven (7) calendar days after the opening of bids, the three low bidders shall submit to the University for its approval, an Equal Employment Opportunity Statement and EEO Plan ([Form 7557-105](#)) to ensure equal employment opportunities without discrimination because of race, creed, color, sex or national origin. Such Statement and plan should demonstrate the bidder's intent to comply with the provisions of Article VI of the

Agreement. The EEO plan should include the methods that the bidder will use to address nondiscrimination and affirmative action so that minorities and women will be included in the work force. The Equal Employment Opportunity ("EEO") Policy Statement that shall contain, but not necessarily be limited to, a provision that the bidder, as a precondition to entering into a valid and binding Contract with the University, shall during the performance of the Contract, agree to the following:

- a. It will not discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, age, disability or marital status, will undertake or continue existing programs of affirmative action to ensure that minority group membership 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 the Contract.
 - b. It shall state in all solicitations or advertisements for employees that, in the performance of the 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.
 - c. At the request of the University, it shall request each employment agency, labor union or authorized representative of workers, with which it has 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 bidder's obligations herein.
 - d. After the award of the contract, it shall submit to the University a work force utilization report, in a form and manner required by the University, of 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 and any proposed subcontractors. 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 and any proposed subcontractors. Failure to comply with the latter may result in the rejection of the Proposal as not responsive. All information required to be furnished to the University under this Section shall be sent to the State University at {insert address or email address}.

Section 9 Award of Contract

- (1) The award of the Contract shall be made to the bidder submitting the lowest bid that is responsive to the solicitation and who, in the sole opinion of the University, is qualified to perform the work. The University shall determine the lowest bid by adding to or deducting from the Base Bid of the bidders the additive or deductive alternates, if any, the University elects to accept after the opening of the Proposals. Alternates 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.

The lowest base bid shall not exceed the amount of funds then estimated by the University as

available to finance the contract. If the lowest bidder exceeds such amount, the University may reject all bids, or may award the contract on the base bid combined with deductive alternates applied in the order they are set forth in the Proposal as produces the net amount which is within the available funds.

- (2) 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 as not responsive if the bidder fails to furnish the required bid security or to submit the data required with or after its Proposal and this Information for Bidders.
 - b. A Proposal may be rejected as not responsive if the bidder cannot show to the satisfaction of the University: (i) that it has the necessary qualifications and capital; 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 as not responsive if it does not provide for the completion of the work by the date of completion specified in the Proposal.
- (3) The University also expressly reserves the right to reject any Proposal as not responsive 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.
- (4) 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.

Section 10 Required Bonds and Insurance

- (1) Unless otherwise agreed to by the University, within ten (10) working days after the receipt of Letter of Intent, the Contractor shall procure, execute and deliver to the University and maintain, at its own cost and expense:
 - a. 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.
 - b. 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.
- (2) Prior to the commencement of work the Successful Bidder will provide, at its sole cost and expense, Certificates of Insurance in accordance with Section 5.06 and 5.07 of the Construction Agreement,

which shall remain in force throughout the term of the agreement, or any extension thereof. Such Certificates of Insurances shall be from an insurance company licensed by the New York State Department of Insurance with a rating of at least "A-" as published with Standard & Poor's, and a liability insurance policy with limits no less than **\$2,000,000.00** per claim. If during the term of the policy, the carrier's rating falls below "A-", the liability insurance must be replaced no later than the renewal date of the policy with an insurer acceptable to the State of New York. Such policies shall name the STATE UNIVERSITY OF NEW YORK as an additional insured. The policy shall designate the State University of New York as the loss payee and shall contain a provision that the State University of New York shall receive at least thirty (30) days' notice prior to material change, cancellation or expiration of any such policy.

- (3) **Workers Compensation Insurance & Disability Benefits Coverage**
All employees of the Successful Bidder shall be adequately and properly covered by Workers' Compensation Insurance and Disability Benefits coverage for all work related to the resultant contract. Such policies shall name the STATE UNIVERSITY OF NEW YORK as an additional insured and are to be written by recognized and well-rated insurance companies authorized to transact business in the State of New York. The Successful Bidder shall deliver certificates of such coverage, or proof that such coverage is not required, in the required format, as required by the Workers' Compensation Board, to the following when the agreement is signed by the parties and thereafter not less than thirty (30) days prior to material change or cancellation of such coverage.
- (4) **Proof of insurances with the specific coverage and limits required in Article V of the Agreement.**
Acceptable documents are:
- a. Proof of NYS Worker's Compensation is only accepted on the C-105.2 or U-26.3 form.
 - b. Proof of Disability insurance is only accepted on the DB-120.1 form. Use the link below for a description of the required forms for Workers Compensation and Disability:
<http://www.osc.state.ny.us/agencies/guide/MyWebHelp/Content/XI/18/G.htm>
 - c. All other proof of insurance must be on the Acord 25 Certificate of Liability Insurance form.
- (5) **A 120-day schedule**
- a. After receipt of the Letter of Intent but before receipt of the Contract is Awarded, the Contractor, unless otherwise directed by the University, shall update the working plan and schedule previously submitted in accordance with the Information for Bidders to define the contractor's planned operations during the first 120 days and submit it to the University and the Consultant for their acceptance. The updated 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. When updated, 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. The Notice to Proceed may be withheld until this schedule is received and is deemed responsive to the project requirements.
 - b. After Contract Award, but before processing second progress payment application, the Contractor, unless otherwise directed by the University, shall submit to the University and

the Consultant for their acceptance its proposed working plan and project time schedule for all the work covered by the Contract, and shall include activities for preparation and submission of all Shop Drawings and Samples. Said proposed working plan and schedule shall be prepared in accordance with the form and requirements set forth in the preceding paragraph.

Section 11 Minority and Women-Owned Business Enterprises

- (1) Pursuant to New York State Executive Law Article 15-A, the University recognizes its obligation under the law to promote opportunities for maximum feasible participation of certified Minority and Women-Owned Business Enterprises and the employment of minority group members and women in the performance of University contracts.
- (2) For purposes of this solicitation, the University hereby establishes an overall goal of **30%** for MWBE participation, **23%** for Minority-Owned Business Enterprises ("MBE") participation and **7%** for Women-Owned Business Enterprises ("WBE") participation (based on the current availability of qualified MBEs and WBEs). For additional information please refer to the MWBE requirements outlined in the Prospective Bidders Notice ([Form 7557-121b](#)) and Exhibit A-1.
- (3) For guidance on how the University will determine a Contractor's "good faith efforts," refer to 5 NYCRR §142.8.
- (4) Please note the forms identified in the Prospective Bidders Notice ([Form 7557-121b](#)) must be submitted within seven days of the bid opening. Required forms include the MWBE-EEO Policy Statement ([Form 7557-104](#) or equivalent), the MWBE Utilization Plan ([Form 7557-107](#)) and the EEO Staffing Plan ([Form 7557-108](#)).
- (5) Upon contract award and prior to contract execution the selected awardee will enter its Statewide Utilization Management Plan (SUMP) and document its good faith efforts to achieve the applicable MWBE participation goals by submitting evidence through the New York State Contract System, which can be viewed at: <http://ny.newnycontracts.com>, provided however, that the selected awardee may arrange to provide such evidence via a non-electronic method by contacting the SUNY Office of Diversity, Equity, and Inclusion.
- (6) Any modifications or changes to the MWBE Utilization Plan after the Contract award and during the term of the Contract must be reported on a revised MWBE Utilization Plan and submitted to the University. The University will review the submitted MWBE Utilization Plan and advise the Bidder of the University's acceptance or issue a notice of deficiency within 30 days of receipt.
- (7) If a notice of deficiency is issued, Awardee agrees that it shall respond to the notice of deficiency within seven (7) business days of receipt by submitting to SUNY [address phone and fax information], a written remedy in response to the notice of deficiency. If the written remedy that is submitted is not timely or is found by SUNY to be inadequate, SUNY shall notify the Awardee and direct the Awardee to submit, within five (5) business days, a request for a partial or total waiver of MWBE participation goals on [Form 7557-114](#). Failure to file the waiver form in a timely manner may be grounds for disqualification of the bid or proposal.

SUNY may disqualify a Bidder as being non-responsive under the following circumstances:

- i. If a Bidder fails to submit a MWBE Utilization Plan;
- ii. If a Bidder fails to submit a written remedy to a notice of deficiency;

- iii. If a Bidder fails to submit a request for waiver; or
- iv. If SUNY determines that the Bidder has failed to document good faith efforts.

Section 12 Equal Employment Opportunity Requirements

- (1) Pursuant to Article 15 of the Executive Law (the "Human Rights Law"), and all other State and Federal statutory and constitutional non-discrimination provisions, the Bidder will not discriminate against any employee or applicant for employment because of race, creed, color, sex, religion, national origin, military status, sexual orientation, gender identity or expression, age, disability, predisposing genetic characteristics, domestic violence victim status, familial status or marital status. The Bidder shall also follow the requirements of the Human Rights Law with regard to non-discrimination on the basis of prior criminal conviction and prior arrest. The Bidder will state in all solicitations or advertisements for employees that, in the performance of this Contract, all qualified applicants will be afforded equal employment opportunities without discrimination.
- (2) The Bidder 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, if awarded a Contract pursuant to this solicitation, will make and document its conscientious and active efforts to employ and utilize minority group members and women in its work force during its legal engagement with SUNY.
- (3) By submission of a bid or proposal in response to this solicitation, the Bidder agrees with all of the terms and conditions of SUNY Exhibit A including Clause 12 - Equal Employment Opportunities for Minorities and Women and acknowledges that, if the Bidder is awarded a Contract, The Contractor is required to ensure that it and any subcontractors awarded a subcontract over \$25,000 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, shall undertake or continue programs to ensure that minority group members and women are afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status. For these purposes, equal opportunity shall apply in the areas of recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff, termination, and rates of pay or other forms of compensation. This requirement does not apply to: (i) work, goods, or services unrelated to the Contract; or (ii) employment outside New York State.
- (4) The Bidder further agrees, where applicable, to submit with the bid a staffing plan ([Form 7557-108](#)) identifying the anticipated work force to be utilized on the Contract and, if awarded a Contract, will, upon request, submit to SUNY a workforce utilization report identifying the workforce actually utilized on the Contract if known. Forms are available in SUNY Procurement Policies and Procedures Document 7557 online at: http://www.suny.edu/sunypdp/documents.cfm?doc_id=611.

Please Note: Failure to comply with the foregoing requirements may result in a finding of non-responsiveness, non-responsibility and/or a breach of the Contract, leading to the withholding of funds, suspension or termination of the Contract or such other actions or enforcement proceedings as allowed by the Contract.

Section 13 Executive Order 162 (EO162)

- (1) Governor Cuomo's Executive Order 162 requires state contractors to disclose data on the gender, race, ethnicity, job title, and salary of employees performing work on state contracts.
- (2) Bidder agrees to submit Workforce Utilization Report ([Form 7557-110](#)) and to require the same

information to be submitted by any of their subcontractors on the state contract, in such format as shall be required by SUNY on a monthly basis for all construction contracts and quarterly basis for all other contracts during the term of the contract. Empire State Development has provided specific details on this requirement at <https://esd.ny.gov/doing-business-ny/mwbe/mwbe-executive-order-162>.

Section 14 Executive Order 177 (EO177)

- (1) The New York State Human Rights Law, Article 15 of the Executive Law, prohibits discrimination and harassment based on age, race, creed, color, national origin, sex, sexual orientation, gender identity, disability, marital status, military status, or other protected status.
- (2) The Human Rights Law may also require reasonable accommodation for persons with disabilities and pregnancy-related conditions. A reasonable accommodation is an adjustment to a job or work environment that enables a person with a disability to perform the essential functions of a job in a reasonable manner. The Human Rights Law may also require reasonable accommodation in employment on the basis of Sabbath observance or religious practices.
- (3) Generally, the Human Rights Law applies to: (i) all employers of four or more people, employment agencies, labor organizations and apprenticeship training programs in all instances of discrimination or harassment; (ii) employers with fewer than four employees in all cases involving sexual harassment; and (iii) any employer of domestic workers in cases involving sexual harassment or harassment based on gender, race, religion or national origin.
- (4) In accordance with Executive Order No. 177, prior to contract award, selected Awardee must submit a certification that it does not have institutional policies or practices that fail to address harassment and discrimination as described above. SUNY is electing to obtain the certification with the bid documents to avoid unnecessary delay in the contract award process. All Bidders must sign and submit the certification attached to this IFB, SUNY [Form 7554-20](#).

Section 15 Service Disabled Veteran Owned Business Enterprises

- (1) Consistent with the State University of New York's commitment to, and in accordance with, Article 17-B of the New York State Executive Law, contractors are required to ensure that good faith efforts are made to include meaningful participation by Service Disabled Veteran-Owned Business in SUNY's MWBE Program. The requirements apply to contracts in excess of \$100,000.
- (2) To ensure that SDVOB Enterprises are afforded the opportunity for meaningful participation in the performance of the University's contracts, and to assist in achieving the SDVOB Act's statewide goal for participation on state contracts the University hereby establishes an overall goal of 6% for SDVOB participation for this solicitation.
- (3) For additional information please refer to the SDVOB requirements outlined in the Prospective Bidders Notice ([Form 7564-121b](#)). Please note the SDVOB Utilization Plan ([Form 7564-107](#)) must be submitted within seven days of the bid opening.

Section 16 Encouraging Use of New York State Business Businesses in Contract Performance

- (1) New York State businesses have a substantial presence in State contracts and strongly contribute to the economies of the state and the nation. In recognition of their economic activity

and leadership in doing business in New York State, bidders/proposers for this contract for commodities, services or technology are strongly encouraged and expected to consider New York State businesses in the fulfillment of the requirements of the contract. Such partnering may be as subcontractors, suppliers, protégés or other supporting roles.

- (2) Bidders/proposers need to be aware that all authorized users of this contract will be strongly encouraged, to the maximum extent practical and consistent with legal requirements, to use responsible and responsive New York State businesses in purchasing commodities that are of equal quality and functionality and in utilizing services and technology. Furthermore, bidders/proposers are reminded that they must continue to utilize small, minority and women-owned businesses, consistent with current State law.
- (3) Utilizing New York State businesses in State contracts will help create more private sector jobs, rebuild New York's infrastructure, and maximize economic activity to the mutual benefit of the contractor and its New York State business partners. New York State businesses will promote the contractor's optimal performance under the contract, thereby fully benefiting the public sector programs that are supported by associated procurements.
- (4) Public procurements can drive and improve the State's economic engine through promotion of the use of New York businesses by its contractors. The State therefore expects bidders/proposers to provide maximum assistance to New York businesses in their use of the contract. The potential participation by all kinds of New York businesses will deliver great value to the State and its taxpayers.
- (5) Information on the availability of New York State subcontractors and suppliers is available from: New York State Department of Economic Development, Procurement Assistance Unit, One Commerce Plaza, Albany, New York 12245, Phone: (518) 474-7756, Fax: (518) 486-7577.

Section 17 Single Contract Responsibility

This is a single bid general construction project. The Contractor submitting the bid is responsible for all work associated with this Project.

Section 18 Examination of Site and Conditions of Work

- (1) A pre-bid conference and project walk-through will be held with all contractors assembled at **Purchase College at the office of Capital Facilities Planning on January 19th, 2021 at 11:00AM.** No individual or additional walk-throughs will be provided. Failure to attend a walk-through shall not be the cause for extra payment.
- (2) Each bidder must inform itself fully of the conditions relating to the construction of the project and the employment of labor on the project. Failure to do so will not relieve a successful bidder of their obligation to furnish all material and labor necessary to carry out the provisions of their contract. To the extent possible, the contractor, in carrying out the work, must employ such methods or means as will not cause any interruption of or interference with the work of any other contractor.

Section 19 General Terms and Conditions

- (1) The following items will be incorporated into, and made part of, the formal agreement: (1) the University's Invitation for Bid; (2) the Successful Bidder's proposal; (3) Exhibit A, Standard Contract Clauses; (4) Exhibit A-1, Affirmative Action Clauses; and, (5) Forms A and B

Procurement Lobbying Forms.

- (2) In the event of any inconsistency in or conflict among the document elements of the agreement described above, such inconsistency or conflict shall be resolved by giving precedence to the document elements in the following order: (1) Exhibits A and A-1; (2) Forms A and B Procurement Lobbying Forms, (3) the Agreement; (4) this IFB; and (5) the Successful Bidder's proposal.

Section 19.1 Vendor Debriefing and Contract Award Protest Procedure

- (1) Upon being notified of their unsuccessful bids, unsuccessful bidders may request in writing a debriefing within 15 calendar days of such notice. The 15 day period starts once unsuccessful bidders are notified. Once a request is made by the bidder, the University must schedule a debriefing within a reasonable time of such request. Unless the campus and bidder mutually agree to use another method such as by telephone, video conference or another type of electronic communication the debriefing must be conducted in person with the bidder.
- (2) This procurement is subject to SUNY Procedure Item 7561, Contract Award Protest Procedure.

Section 19.2 Proposal Confidentiality

- (1) All proposals and qualifications submitted for the University's consideration will be held in confidence. However, the resulting contract is subject to the New York State Freedom of Information Law (FOIL). Therefore, if an Bidder believes that any information in its proposal constitutes a trade secret or should otherwise be treated as confidential and wishes such information not to be disclosed the Bidder shall submit with its proposal a separate letter to the designated contact. The letter shall specifically identify the page number(s), line(s) or other appropriate designation(s) containing such information, explaining in detail why such information is a trade secret and formally requesting that such information be kept confidential. Failure by an Bidder to submit such a letter will constitute a waiver by the Bidder of any rights it may have under Section 89(5) of the Public Officers' Law relating to protection of trade secrets.
- (2) The proprietary nature of the information designated confidential by the Bidder may be subject to disclosure if ordered by a court of competent jurisdiction. A request that an entire proposal be kept confidential is not advisable since a proposal cannot reasonably consist of all data subject to FOIL proprietary status.

Section 19.3 Information Security Breach and Notification Act

- (1) The Bidder shall comply with the provisions of the New York State Information Security Breach and Notification Act (General Business Law Section 899-aa and State Technology Law, Section 208). The Bidder shall be liable for the costs associated with such breach if caused by its negligent or willful acts or omissions, or the negligent or willful acts or omissions of its agents, officers, employees or subcontractors.

Section 19.4 State Finance Law §§ 139-j and 139-k

- (1) State Finance Law §§139-j and 139-k imposes certain restrictions on communications between the University and a Bidder during the procurement process. During the restricted period the Bidder is restricted from making contacts to other than designated contact unless it is a contact that is included among certain statutory exceptions set forth in State Finance Law §139-j(3)(a).

The restricted period is from the earliest notice of intent to solicit offers through final award and approval of the Contract.

- (2) University employees and their designated representatives are also required to obtain certain information when contacted during the restricted period and make a determination of the responsibility of the Bidder pursuant to these two statutes. Certain findings of non-responsibility can result in rejection for contract award and in the event of two findings within a 4 year period the Bidder is debarred from obtaining government procurement contracts.

Section 19.5 State Finance Law §§ 139-I

- (1) Pursuant to N.Y. State Finance Law §139-I, every bid made on or after January 1, 2019 to the State of any public department or agency thereof, where competitive bidding is required by statute, rule or regulation, for work or services performed or to be performed or goods sold or to be sold, and where otherwise required by such public department or agency, shall contain a certification that the bidder has and has implemented a written policy addressing sexual harassment prevention in the workplace and provides annual sexual harassment prevention training to all of its employees. Such policy shall, at a minimum, meet the requirements of N.Y. State Labor Law §201-g.
- (2) N.Y. State Labor Law §201-g provides requirements for such policy and training and directs the Department of Labor, in consultation with the Division of Human Rights, to create and publish a model sexual harassment prevention guidance document, sexual harassment prevent policy and sexual harassment training program that employers may utilize to meet the requirements of N.Y. State Labor Law §201-g. The model sexual harassment prevention policy, model sexual harassment training materials, and further guidance for employers, can be found online at the following URL: <https://www.ny.gov/combatting-sexual-harassment-workplace/employers>.
- (3) Pursuant to N.Y. State Finance Law §139-I, any bid by a corporate bidder containing the certification required above shall be deemed to have been authorized by the board of directors of such bidder, and such authorization shall be deemed to include the signing and submission of such bid and the inclusion therein of such statement as the act and deed of the bidder.
- (4) If the bidder cannot make the required certification, such bidder shall so state and shall furnish with the bid a signed statement that sets forth in detail the reasons that the bidder cannot make the certification. After review and consideration of such statement, SUNY may reject the bid or may decide that there are sufficient reasons to accept the bid without such certification.
- (5) All Bidders must sign and submit the certification attached to this IFB, SUNY [Form 7554-20](#).

Section 20 Additional Terms and Conditions

- (1) The terms and conditions of the State University of New York Construction Agreement (Form 7554-09) shall apply and is provided as an attachment to this IFB.
- (2) The resulting agreement shall be binding upon its execution by both parties and, if required by New York State law, upon the approval of the Attorney General and the Office of the State Comptroller.
- (3) The agreement may be revised at any time upon mutual consent of the parties in writing. Such

written consent will not be effective until signed by both parties and, if required by New York State law, approved by the Attorney General and the Office of the State Comptroller.

- (4) The relationship of the Successful Bidder to the University shall be that of independent contractor.
- (5) Compliance with the post-employment restrictions of the Ethics in Government Act is required.
- (6) The submission of a proposal constitutes a binding offer to perform and provide said services.
- (7) In the event the Successful Bidder uses partners, subcontracts or subcontractors, the Successful Bidder will remain responsible for compliance with all specifications and performance of all obligations under the contract resulting from this IFB. For the resulting agreement, the Successful Bidder will be the prime contractor.
- (8) The University will not be liable for any costs associated with the preparation, transmittal, or presentation of any proposals or materials submitted in response to this IFB.
- (9) Public announcements or news releases regarding this IFB or any subsequent award of a contract must not be made by any Bidder without the prior written approval of SUNY.
- (10) The Successful Bidder is responsible for compliance with all applicable rules and regulations pertaining to cities, towns, counties and State where the services are provided, and all other laws applicable to the performance of the resulting contract. The Successful Offeror shall provide all necessary safeguards for safety and protection as set forth by the United States Department of Labor, Occupational Safety and Health Administration.
- (11) The Successful Bidder will be responsible for the work, direction and compensation of its employees, consultants, agents and contractors. Nothing in the resulting agreement or the performance thereof by the Successful Bidder will impose any liability or duty whatsoever on the University including, but not limited to, any liability for taxes, compensation, commissions, Workers' Compensation, disability benefits, Social Security, or other employee benefits for any person or entity.
- (12) In the event the Successful Bidder is required to be reimbursed for travel, Bidder shall be reimbursed at rates not to exceed the current NYS Schedule of Allowable Reimbursable Travel Expenses. Refer to the U.S. Government Administration Rates for Travel at: <http://www.gsa.gov>
- (13) In addition, the University reserves the right to:
 - a. Not accept any and all proposals received in response to this IFB, waive requirements or amend this IFB upon notification to all bidders, waive minor irregularities or adjust or correct cost or cost figures with the concurrence of the bidder if mathematical or typographical errors exist.
 - b. To terminate any resulting contract for: (1) unavailability of funds; (2) cause; (3) convenience; (4) in the event it is found that the certification filed by the Bidder in accordance with State Finance Law §§139-j and 139-k are found to be intentionally false or intentionally incomplete; and if applicable, the Department of Taxation and Finance Contractor Certification Form ST-220CA was false or incomplete. Upon such finding the University may exercise its termination right by providing written notification to the Bidder in accordance with the written notification terms of the contract.

- c. Request certified audited financial statements for the past three (3) completed fiscal years and/or other appropriate supplementation including, but not limited to, interim financial statements and credit reports.
- d. Contact any or all references.
- e. Request clarifications from Bidders for purposes of assuring a full understanding of responsiveness, and further to permit revisions from all Bidders determined to be susceptible to being selected for contract award, prior to award.
- e. Advise Bidder of any objectionable employee(s) and/or subcontractor(s) and request their removal from the project. Such removal shall not be reasonably withheld by the Bidder.

Section 21 Requirements for Construction Activities To Address Public Health or Safety

- (1) The Bidder agrees it is responsible for complying with any and all requirements issued by federal, state or local entities, including but not limited to New York State Governor Office Executive Orders, New York State Department of Health rules, regulations and guidance, and other New York State or State University of New York laws, rules, regulations or requirements that may be issued and/or amended during the bidding and/or performance of work on this Project.
- (2) With respect to the COVID-19 pandemic, Bidder specifically acknowledges and agrees that the NYS Interim COVID-19 Guidance for Construction Projects is made a part of the contract work for this Project, as set forth in General Requirements. Bidder affirms that all costs and time associated with compliance with the current guidance are included in its bid. The current NYS Interim COVID-19 Guidance for Construction Projects is available at the following website: <https://forward.ny.gov/industries-reopening-phase#phase-one-construction>. Notwithstanding the foregoing, Bidder agrees to comply with the Guidance as it may be amended or superseded in the future.

NAME OF BIDDER

ADDRESS OF BIDDER

PROPOSAL FOR

Project Number: SU-111320
Project Name: **RE-BID Neuberger Museum Southwest
Courtyard**

Date:

TO THE STATE UNIVERSITY OF NEW YORK:

1. The Work Proposed Herein Will Be Completed Within **120** Calendar Days, Starting **10** Calendar Days After The Contract Approval Date Of The New York State Comptroller. 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.

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, modified by such additive or deductive alternates, if any, as are accepted by the University.
4. The bidder further agrees to accept the unit prices, if any, set forth in paragraph (5) of this proposal, 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. BID CALCULATION

a. **BASE BID** (*does not include allowances*)

\$ _____
(in numbers)

(in words)

b. **ALLOWANCES:** In accordance with the Schedule I and Section 4.05 of Agreement, the bidder further agrees to the following additions to the Base Bid:

Work or Materials Description	Amount in Words	Amount in Figures
N/A		

c. **TOTAL BID** (*base bid + allowances = total bid*)

\$ _____
(in numbers)

(in words)

d. **ALTERNATES:** In accordance with Section B of the General Requirements the bidder proposes the following additions to or deductions from the Total Bid for the alternates listed below:

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

e. **UNIT PRICES:** In accordance with Section (5) paragraph (2) of the Information to Bidders and Section 4.04 of the Agreement the bidder or the University may insert unit prices for the

work or materials listed below for clarification.

Work or Materials Description	Amount in Words	Amount in Figures

6. 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 induce 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 therefor. 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 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.

7. 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.
8. 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
_____	____/____/____	_____	____/____/____
_____	____/____/____	_____	____/____/____
_____	____/____/____	_____	____/____/____

9. 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.
10. 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.
11. The bidder affirms that it understands and agrees to comply with the procedures of the Fund relative to permissible contacts as required by Sections 139-j(3) and 139-j-(6)(b) of the State Finance Law.
12. The bidder certifies that all information provided or to be provided to the University in connection with this procurement is, as required by Section 139-k of the State Finance Law, complete, true and accurate.

Dated ____ / ____ / ____

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

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

By _____
(signature)

Title _____

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

Attachment A – List of Completed Similar Construction Projects

Bidder Name:

Project No.:

Bidders must provide three (3) example projects completed in the past five (5) years in which the Bidder served as the prime contractor. Example projects must be of similar size, scope and complexity to the project currently being bid, as further described in the Description of Work. Each project must include the Owner/Agency, Award Date, Contract Amount, Date Completed, Contact Person, Telephone number of the contact, Architect and/or Engineer's Name, Contract Number, Contact Email, and the Project Title and a brief scope description. Reference contacts may be used to verify project size, scope, dollar value, percentages and quality of performance.

1.	Agency/Owner			Award Date	Contract Amount	Date Completed
	Agency/Owner Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Contact Email	Project Title & Scope			
2.	Agency/Owner			Award Date	Contract Amount	Date Completed
	Agency/Owner Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Contact Email	Project Title & Scope			
3.	Agency/Owner			Award Date	Contract Amount	Date Completed
	Agency/Owner Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Contact Email	Project Title & Scope			
Completed By:				Phone Number: Email: 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-111320, titled **RE-BID Neuberger Museum Southwest Courtyard** and carry out all of the duties and obligations imposed upon the Contractor by the Contract Documents.

The main features of the work shall include, but not be limited to the following:

All labor, materials, and services necessary to complete the courtyard renovations as shown on the drawings and technical specifications.

- Remove materials indicated and in manner outlined in drawings and technical specifications.
- Providing New Water proofing system and pavers as per technical drawings and specification.
- Restore adjacent surfaces impacted by demolition and construction work back to original condition (unless otherwise noted) as outlined on drawings and technical specifications.

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. Time Progress Schedule

- a. The Contractor shall schedule the Work for expeditious completion in accordance with Section 3.01(2) of the Agreement. The proposed schedule must be established in cooperation with the Campus and account for Campus calendar restrictions listed in this section that affect the Contractor's access to the work areas and construction activities. At each periodic meeting, the

Time Progress Schedule required by Section 3.02 of the Agreement shall be reviewed for compliance with phasing requirements. Revise and update the Time Progress Schedule to properly depict the work required to maintain continuity of campus operations.

After the beginning of construction, the Contractor shall submit a two-week look-ahead, outlining the upcoming construction activities, at every scheduled construction meeting. This is to help coordinate scheduled construction activities, required shutdown, and items that will impact the use of the building the active programs inside.

- b. First phases of work shall include appropriate time in the schedule for: (1) understanding Campus operations, training crews, acclimating trades and Campus to sequence and apportionment of activities; (2) additional meetings (up to twice a week during the first twelve weeks after the Notice to Proceed) with the Owner, consultant and the Contractor's principals, project manager and those of its significant subcontractors; (3) re-sequencing activities to recover from start-up delays in the progressive operation of interrelated work and (4) other activities commonly associated with the start-up of field work.
- c. Academic Calendar: The Contractor is advised that the Campus intends to maintain a full institutional program throughout the Project duration. The Campus will make continuous use of adjacent spaces, buildings and site, except where work is scheduled or specified to occur. All Contract work must be scheduled and performed without causing unscheduled interruption of the normal institutional activities and processes. The Contractor shall coordinate his work with the following Campus Calendar, and No Utility shutdowns will be permitted during Registration, Study Periods, Exam Periods, or Commencement, or other times without notification to and approval of the Campus' assigned project representative for this project.
- d. The work site will be available to begin construction on **April 1st 2020**. Unless otherwise indicated, normal working hours on the campus are between 7:00 AM and 4:00 PM. Sequence the work in phases to meet the following interim milestones dates:
- e. On the Date of Substantial Completion in the Proposal, access to the work area for any uncompleted work and for punch list items shall be restricted to after 5:00 PM and prior to 7:00 AM and comply with the following:
 - 1. Methods of performing work shall not hinder or disrupt the Campus' occupancy, reduce Campus provided levels of cleanliness and ambient environmental conditions and affect building systems, services, and utilities serving the building unless, upon completion of each shift's work that is performed outside of normal Campus work hours, the Contractor provides cleaning to return the work areas to a similar level of cleanliness as normally provided by the Campus, returns spaces to their normal ambient environmental conditions and restores building systems, services, and utilities serving the occupancy.
 - 2. No material or equipment shall remain inside the building unless in the active use and control of Contractor personnel.
 - 3. The Contractor shall provide all utility relocations and re-routings necessary to maintain the existing utilities at their current level of service, including limiting their shutdowns for tie-ins and cutovers to those periods specified. All new work shall be in place, tested and accepted prior to performing a shutdown for the required tie in.
- f. Time Delay Allowance: In addition to the requirements of Article III of the Agreement, the base bid contract duration to perform the work specified in the proposal shall include not less than five (5) consecutive and/or non-consecutive eight hour working days in the Time Progress Schedule for delays that are of no fault of the Contractor or any of its subcontractors or suppliers, or caused by events or conditions that could not be reasonably anticipated. Provide notice of delay per Section 3.04 and request use of this time allowance. When approved by Consultant, the time

allowance is expended for each work day that the contractor is unable to work and all delay time used is tracked in the Time Progress Schedule. After this base bid time allowance for delay is expended, comply with the requirements of Article III for any additional delays.

2. 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.

3. 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.

4. Temporary Access and Parking

See Campus Special Conditions for Construction

5. 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.

6. 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.

7. 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.

8. 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.

9. Sanitary Facilities

The Contractor will **not** be permitted to use existing toilet and janitor closet facilities, and will need to provide (at its own costs) temporary sanitary facilities at an approved location. 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.

10. 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.

11. 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.

12. 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.

13. 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.

14. 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.

15. 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.

16. 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

17. 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.

18. 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:

- Site furniture
- Tree grates
- Light fixtures

College will walk site with contractor and tag items prior to the start of demolition work

19. 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.

20. 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])

21. 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.

22. 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.

23. 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.

24. 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.

25. 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.

26. 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.

27. 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 - 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 currently amended, and applicable federal and state regulations.

The Owner shall be responsible for hiring and paying an independent third party firm to perform the requirements of air monitoring as called for in 12 NYCRR Part 56 and as permitted in Section 2.17 of the Agreement.
- 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 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.

28. COVID-19 Contractor Requirements and Guidance for Construction Jobsites

The Contractor will comply with NYS DOH Interim COVID-19 Guidance for Construction Projects, "Guidance", as may be amended or superseded, which is made a part of the contract work for this Project. All costs and time associated with compliance with the current Guidance are included in the Contract consideration in Article IV of the Agreement. The current Guidance for Construction Projects is available at the following website:

<https://forward.ny.gov/industries-reopening-phase#phase-one-construction>

29. Wage Rates and Supplements

The following are 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:

Wage Schedules can be accessed online using PRC # **2020012505** at <https://labor.ny.gov/workerprotection/publicwork/OWSaccess.shtm>. If the Contractor is unable to access the prevailing wage schedule for the PRC# listed above, please contact the University for a copy of the wage rate schedule.

Special Conditions for Construction

Part 1 – Use of Premise

1.1 General

- A. Contractor shall confine operations at the site to areas permitted by law, ordinances, permits and the Contract Documents and shall not unreasonably encumber the site with materials or equipment. *For purposes of this provision, "site" shall include all existing structures.*
- B. The Building in which the Work is to be performed is currently occupied by residential areas, offices and/or classrooms. Each Contractor shall have limited use of premises for construction operations, including use of Project site, during the construction period. Each Contractor's use of premises is limited only as outlined in this section and/or any other section of the specifications, or at the College's discretion, to perform work or to retain other contractors on portions of Project.
- C. Coordination with Other Contractors:
 - 1). The Contractor will need to have their portion of the Work coordinated with other Contractors working on the site so that their work conforms to the progressive operation of all the work covered under other contracts that the College has let on this site.
 - 2). Each Contractor shall afford other Contractors reasonable opportunities for the introduction and storage of their supplies, materials, equipment, and execution of their work.
 - 3). If the Contractor or such other contractors contend that their work of the progress thereof is being interfered with by the acts or omissions of the 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 College of such contention. Upon receipt of such notification or on its own initiative, the College shall investigate the situation and issue such instructions to the Contractor or such other contractors with respect thereto as it may deem proper. The College shall determine the rights of the Contractor and of such other contractors and the sequence of work necessary to expedite the completion of the work covered by said other contracts.
- D. All work is to be conducted in such a manner as to cause a minimum degree of interference with the College's operations and academic schedule. Contractor is to coordinate their work with the College's classroom schedule.
- E. The Contractor and its employees shall comply with all College regulations governing conduct, access to the premises, and operation of equipment.
- F. Maintain all paths of egress and keep clear of all materials and debris.
- G. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, and other adjacent occupied or used facilities without written permission from College.
- H. Should it become necessary, in the judgment of the College, 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 College shall move them or cause them to be moved at its sole cost and expense; provided, however, if materials and equipment that have been stored or placed by the Contractor at a location on the site expressly approved, in writing, by the College and the same are moved or caused to be moved by the Contractor at the College's request, such removal shall be deemed extra work and the Contractor shall be compensated.

1.2 Campus Regulations

- A. The contractor and his/her employees, subcontractors, etc., will not fraternize with any building or campus occupants. This includes but is not limited to students, faculty, and employees of the State other than those designated, visitors and guests. At no time will it be appropriate to say anything derogatory to the above referenced individuals. Harassment, verbal or otherwise, of the above referenced individuals will **not** be tolerated. If an incident arises, the Contractor will be directed to **permanently remove** the employee from the site.

- B. No drugs are permitted on campus.
- C. No smoking is permitted in the buildings.
- D. The contractor, employees and sub-contractors are required to stay within the construction boundary lines at all times.
- E. The contractor, employees, and sub-contractors must recognize the fact that this is an institute for learning. Flexibility will be required during certain times of the academic year.

1.3 Use of Permanent Utilities

- A. As the building is still under construction, when each permanent utility is operational, it may be used for construction purposes, if acceptable, in writing, by the College. The written request for permission for use of the system from the College shall include, as a minimum, the conditions and reasons for use and provisions for and effect on equipment warranties. In the event that the College accepts the Contractors use of the permanent utility for the balance of the Work, the Contractor shall be fully responsible for it, and shall pay all costs for operation, power, restoration and maintenance of same.
- B. If the existing facilities are not adequate for the Contractor, locate temporary facilities where they will serve Project adequately and result in minimum interference with performance of the Work and disruption to the College. Any temporary facilities location is to be reviewed and approved by College's Representative.

1.4 Storage and Staging of Materials

- A. The following shall apply to this project
 - 1). The Contractor shall store materials and equipment within areas designated by the College.
 - 2). Security for stored equipment and materials shall be the responsibility of the Contractor.
 - 3). No vehicles will be permitted on the Plaza. Any and all materials and/or equipment brought or stored on the Plaza shall not exceed the maximum weight limit of 150 psf.
 - 4). Access to the construction site for delivery of materials and equipment is limited. Temporary parking for the loading and unloading of the same shall be arranged only with prior approval of the College.
 - 5). The Contractor shall at all times keep access routes, and parking and staging areas clean of debris and other obstructions resulting from the work.

1.5 Temporary Power for Construction Activities

- A. Electrical energy, as it exists within the work area, will be available at **no** cost to the Contractor from existing outlets or panels from locations approved by the College. As this site is still under construction, if electrical power is not available in the area of work, it is the Contractor's responsibility to provide necessary power to perform the Work. Typically available power may be used for small power tools (not exceeding ½ HP).

1.6 Temporary Lighting / Heating & Cooling / Water

- A. Electrical lighting, as it exists within the work area, is available to the contractor at **no** cost. As this site is still under construction, if electrical lighting is not available in the area of work, it is the Contractor's responsibility to provide necessary temporary equipment to perform the Work at its cost.

1.7 Temporary Sanitary Facilities

- A. Toilet, Water, and Drinking Water Facilities: The Contractor shall make arrangements with the College for use of the existing toilet, water, and drinking water facilities. It is the Contractor's responsibility to maintain the facility during the construction and restore to original state upon completion of the project.

1.8 Temporary Parking

A. Contractor is to abide to the following:

- 1). The Contractor and its employees shall be subject to all the rules and regulations of the College, including parking regulations. The College is regulated by New York State Vehicle and Traffic Laws.
- 2). The Contractor and its employees shall only park in the designated areas in Lot #W-2. There shall be no parking in other areas of the campus (unless prior written authorization is provided by the College Chief of Police).
- 3). Parking violations are subject to fines and are the sole responsibility of the Contractor or its employees. Vehicles that are parked illegally may be towed at the expense of the owner/driver.
- 4). All vehicles are required at all times to register with the College's Public Safety Unit.
- 5). There is \$35.00 fee for parking permits. The fee is per vehicle and permits need to be display whenever the vehicle is parked on campus.

1.9 Temporary Support Facilities

- A. Construction Aids: Provide all items, such as lifting devices, all scaffolding, staging, platforms, runways, ladders; and all temporary flooring, as required by the various trades for the proper execution of the Work. Provide such construction aids with proper guys, bracing, guards, railings and other safety devices as required by the governing authorities and OSHA.
- B. Elevator and Loading Dock Usage: The Contractor shall make all arrangements with the College's Representative for the use of elevators as required for transporting material and workmen to the work areas and for the disposal of rubbish and waste materials.

1.10 Safety and Protection of Facilities

- A. The Contractor shall provide the necessary safeguards to prevent accidents, to avoid all necessary hazards and protect the public, the Faculty and Staff, students, the work, and the property at all times, including Saturdays, Sundays, holidays, and other times when no work is being done. The Contractor shall submit a safety plan which shall be certified by a Certified Safety Professional from the Board of Certified Safety Professionals (www.bcsp.org).
- 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 the users of the project area, adjoining areas, 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.
- C. Fire safety during construction:
- 1). The Contractor shall provide all temporary equipment, labor and materials required for compliance with the applicable provisions of Chapter 14, Fire Safety during Construction and Demolition, of the Fire Code of New York State.
 - 2). For areas and spaces under their control, the Contractor shall comply with Chapter 14 of the Fire Code of New York State, titled "Fire Safety during Construction and Demolition". Subject to approval by the College's Consultant and the College, the Contractor shall designate one person as the **fire prevention program superintendent**. This superintendent shall be responsible for the fire prevention program required by Section 1408 of the Fire Code of New York State and implementing the minimum safeguards for construction, alteration, and demolition operations that provide reasonable safety to life and property from fire during the Contractor's operations. Responsibilities also include developing and maintaining pre-fire plans per 1408.2, the training of the Contractor's workforce per 1408.3, maintenance of the fire protection equipment per 1408.4, supervising hot work operations per 1408.5, and implementing temporary impairment to existing fire protection systems per 1408.6 & 1408.7. This superintendent shall also provide periodic written reports at the field meetings and respond to questions raised concerning compliance with Chapter 14 of the Fire Code of New York State.

D. Contractor shall comply with Labor Law Section 220-h; provide workers certified as having successfully completed the OSHA 10-hour construction safety and health course; and comply with applicable NYS DOL rules and regulations for monitoring and reporting compliance.

E. Temporary Fire Protection:

- 1). If the existing building is to be partially occupied during the course of the project, all existing exits and fire protection systems shall be continuously maintained in the occupied spaces/phases, or other measures must be taken which in the opinion of the College's Consultant and/or College will provide equal safety. Those portions occupied by the College must be available for their use 24hours a day, seven days a week during the contract period unless otherwise scheduled in these documents. Comply with all applicable State and Federal codes and regulations. The cost of all labor, fire watches, variances, materials, installations, maintenance and removal of such temporary fire protection systems or modifications to the existing systems are the responsibility of the Contractor.

F. Fire Watch Requirements:

- 1). If any of the work of the Contractor;
 - a) Disables any fire suppression systems, standpipes systems, fire alarm systems, fire detection systems, smoke control systems and/or smoke vents as defined in Chapter 9 of the Fire Code of New York State (FCNYS).
 - b) Involves welding, cutting, open torches and other hot work as defined in Chapter 26 of the FCNYS and/or involves demolition activities that are hazardous in nature as defined in Chapter 14 of the FCNYS.

Then the Contractor shall provide a fire watch or perform the work during the hours where the building is scheduled by the College to be closed, in accordance with Section 901.7 of the FCNYS, for structures that have campus occupancy.

- 2). If a fire watch is required, the Contractor shall provide all labor that is required. The Contractor shall:
 - a) Contact the New York State Department of State Office of Fire Prevention and Control (OFPC) at 41 State Street, Albany, NY 12231-0001, Phone: (518) 474-6746, Fax: (518) 474-3240, e-mail: fire@dos.state.ny.us and obtain its currently amended recommendation for fire watch procedures. Review the OFPC recommendations and notify the College's Consultant and/or College Representative if there are significant discrepancies with the requirements of this section.
 - b) Review the fire watch procedures with the College's alarm monitoring staff (University Police – 914-251-6900) and the fire department prior to disabling a fire protection system. Submit a plan for the fire watch for approval by the College's Consultant and/or College Representative, and schedule a pre-system shutdown meeting with the College's Consultant and/or College Representative.
 - c) Employ, instruct and maintain competent fire watch personnel. Provide the sufficient number of dedicated personnel that are required to patrol all portions of the means of egress system in the facility in the period of time required.
 - d) Notify University Police (UPD) prior to and at the conclusion of the fire watch.
 - e) Employ competent personnel to fix the fire protection system (see section 1.11 below).
- 3). Fire Watch Duties: Personnel serving as a fire watch have the following duties:
 - a) Conduct periodic patrols of the entire facility as specified below.
 - b) Identify any fire, life or property hazards.
 - c) Notify the UPD if a fire is discovered by call (914-251-6911), with the exact address and type of emergency.
 - d) Notify occupants of the facility of the need to evacuate. If sirens or public address function of the alarm system are still functional, use them to assist with evacuation of the building.
 - e) Have access to at least one means of direct communication with UPD. A cell phone is acceptable.
 - f) Maintain a written log of fire watch activities.

- g) Have knowledge of the location and use of fire protection equipment, such as fire extinguishers. (Note: The fire watch will not perform fire-fighting duties beyond the scope of the ordinary citizen).
 - h) Perform no other duties that are not directly part of the fire watch duties.
- 4). Frequency of Inspections: Fire watch personnel should patrol the entire facility patrol every 30 minutes except in the following situations, where patrols shall be every 15 minutes:
 - a) The facility has people sleeping.
- 5). Record Keeping: A fire watch log should be maintained at the facility. The log should show the following:
 - a) Address of the facility.
 - b) Times that the patrol has completed each tour of the facility.
 - c) Name of the person(s) conducting the fire watch.
 - d) Records of communication(s) to the University Police.
 - e) Record of other information directed by the College's Consultant and/of the College Representative.

1.11 Modifications / Alterations to Campus Existing Fire Alarm Systems

- A. The Campus standard for its fire alarm is the Edwards Fire Alarm System. Any contractor working on the Campus fire alarm system must be a licensed fire alarm installer. Any contractor working on adding to or modifying the existing fire alarm system's programming, must be certified to work on an Edwards Fire Alarm System and provide proof of that certification.
- B. A Pre-Fire Alarm construction meeting will be required between the Contractor, their fire alarm sub-contractors, and the College's Representative prior to any fire alarm work occurring.
- C. Contractor shall coordinate all modifications and/or alternations to the existing building's fire alarm systems with the College's Representative. If the work shall affect the existing fire alarm system in adjoining areas, the contractor must submit, in writing, their plan to protect and maintain the systems in the adjoining spaces, to the College's Representative for the College's review and approval, at least 72 hours in advance.
- D. Where demolition and dust may impact existing fire alarm smoke heads, the contractor shall protect these heads prior to beginning any work and follow the College's protocol listed below. If smoke heads are protected during the day, while work is occurring, the Contractor must uncover these heads at the end of each work day before leaving the site. The area protected by covered smoke heads must be continuously monitored while the heads are covered. The fire alarm systems must be operational at all times during construction. In the event that there is a need to shut down the system, the Contractor must notify the College in writing at least 72 hours in advance and provide a Fire Watch for all of the areas affected by the shutdown during the times the systems are non-operational.
- E. Where work will impact the existing fire alarm system, the contractor's site supervisor must follow the following protocol:
 - 1) Contractor Supervisor to contact the College's University Police (251-6900) prior to beginning work for the day and let them know where work is occurring and which smoke heads are being covered or device made inoperable.
 - 2) Cover smoke heads and make scheduled devices inoperable. Call University Police once heads are covered.
 - 3) Contractor to perform scheduled work. The area must be continuously monitored while the smoke heads are covered.
 - 4) At the end of the work day, Contractor Supervisor to College's University Police and let them know smoke head covers are being removed. It's strongly recommended that Contractor let's day's dust settle and clean around the devices prior to removing protective covers to avoid unintended activation.

Part 2 – Party Responsibilities

2.1 Information and Services Required of the College

- A. Furnished Information: College shall furnish (if available) surveys, existing plans, or other required information describing physical characteristics, legal limitation and utility locations for the site of the Project, and a legal description of the site. These documents are for information purposes only. They are to be field verified by the Contractor for accuracy. The College will not be responsible if actual conditions vary from what is indicated on the documents. Plans will be released to awarded Bidder in PDF electronic format.
- B. College's Right to Stop the Work: If Contractor fails to correct Work which is not in accordance with the requirements outlined, or fails to carry out Work in accordance with the Contract Documents, the College, by written order signed personally or by an agent specifically so empowered by the College in writing, may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the College to stop the Work shall not give rise to a duty on the part of the College to exercise this right for the benefit of Contractor or any other person or entity.
- C. College's Right to Carry Out the Work: If Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten (10) business-day period after receipt of written notice from College to commence and continue correction of such default or neglect with diligence and promptness, College may, without prejudice to other remedies College may have, correct such deficiencies. *College may offset* from payments then or thereafter due Contractor the cost of correcting such deficiencies, including compensation for Consultant's additional services and expenses made necessary by such default, neglect or failure. If payments then or thereafter due Contractor are not sufficient to cover such amounts, Contractor shall pay the difference to the College.

2.2 Information and Services Required of the Contractor

- A. Review of Contract Documents: Contractor shall carefully study and compare the Contract Documents with each other and with the information furnished by the College, and shall at once report to the College Representative errors, inconsistencies or omissions discovered.
- B. Review of Field Conditions: Contractor shall, *sufficiently in advance of undertaking the Work*, take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to Contractor with the Contract Documents. Errors, inconsistencies or omissions discovered shall be reported to the College Representative at once. *If Contractor performs any construction activity which involves an error, inconsistency or omission which Contractor knew of or should reasonably have known of, without notice to College, Contractor shall assume responsibility for such performance and shall bear all costs of correction.*
- C. Construction Schedule: Contractor, promptly after being awarded the Contract, shall prepare and submit for College Representative, a Contractor's construction schedule for the Work.

Project Schedule shall include the following:

- 1). Contractor's work plan and/or 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. The Notice to Proceed may be withheld until this schedule is received and is deemed responsive to the project requirements.
- 2). The proposed working plan and schedule shall be revised by the Contractor until they are satisfactory to the College and the Consultant, and the same shall be periodically updated bi-weekly thereafter. Whether or not the Consultant and the College have accepted the Project Schedule, submit the Project Schedule to the College and the Consultant for acceptance at such time or times as the College or the Consultant may request.
- 3). The proposed working plan and schedule, including any revision or revisions thereof, when accepted by both the College and the Consultant will become the Schedule of Record (SOR). The SOR, as the same may be revised as stated above by the Contractor and accepted by the College and the Consultant, shall be strictly adhered to by the Contractor.

Milestone Dates & Summary Activities (example)

- 1) Notice to Proceed (Milestone Date)
- 2) Mobilization
- 3) Site Preparation & Foundations
- 5) Natural Gas Piping Installation
- 6) Natural Gas Main Tapping
- 7) Regulator Station Installation
- 8) Gas Pipe Testing
- 9) Backfill
- 10) Restoration
- 11) Substantial Completion (Milestone Date)
- 12) Start of Guarantee Period
- 13) Contract Completion Date (if different from above)
- 14) Final Completion - All punch list/outstanding items satisfied (Milestone Date)

D. Supervision:

- 1). Contractor shall supervise and direct the Work, using Contractor's best skill and attention. Contractor shall be solely responsible for and have control over *construction means*, methods, techniques, sequences and procedures *including safety programs and procedures*, and for coordinating all portions of the Work under the Contract.
- 2). Contractor shall enforce strict discipline and good order among Contractor's employees and other persons carrying out the Contract. Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.
- 3). Contractor shall be responsible for inspection of related portions of Work already performed, *as well as existing conditions*, to determine that such are in proper condition to receive subsequent Work.

E. Contractor shall be responsible to College for acts and omissions of Contractor's employees, Subcontractors and their agents and employees, and other *persons or entities directly or indirectly employed by them* performing portions of the Work under a contract with Contractor

F. Cutting and Patchwork:

- 1). Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly.
- 2). Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying or load-deflection ratio.
- 3). Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety (i.e., mechanical systems, plumbing, fire alarm, etc.).
- 4). Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
- 5). Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
- 6). Dispose of demolished items and materials promptly.
- 7). Return elements of construction and surfaces that are to remain to condition existing before selective demolition operations began.
- 8). Existing utilities services to the College must be maintained at all times. If the Contractor is required to affect these services in order to complete the Work, Contractor must obtain written permission from the College prior to this work (also see Special Requirements Section). Any damage or disruption of services shall need to be repaired immediately and at the Contractor's expense.

G. Hot Work Permits:

- 1) If the work requires any Hot Work (including cutting, welding, Thermit welding, brazing, soldering (except soldering electronics or electrical components with an electric soldering iron or gun), grinding, thermal spraying, thawing pipe, installation of torch-applied roof systems or any other similar situation), the

Contractor shall be required to obtain a Hot Work Permit issued by the College. The Contractor shall request this through the College Representative, and be given a copy of the College's "Hot Work Guidelines and Permit Process" and the permit forms to be filled out. The Contractor must request, submit, and be given a permit before any Hot Work begins.

H. Cleaning Up:

- 1). Contractor shall *at all times* keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work Contractor shall remove from and about Project waste materials, rubbish, Contractor's tools, construction equipment, machinery and surplus materials.
- 2). If Contractor fails to clean up as provided in the Contract Documents, College may do so and the cost thereof shall be charged to Contractor.
- 3). If a dispute arises among Contractor, separate contractors and College as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish as described above, College may clean up and allocate the cost among those responsible

I. Access to Work: Contractor shall provide College access to *all portions of* the Work in preparation and progress wherever located.

J. Contractor's Coordination with the Utility Companies:

- 1). The Contractor shall coordinate and cooperate with utility companies, including scheduling the work of other trades to sequence with the work schedule required by the utility companies.
- 2). The Contractor shall pay all costs associated with the work of the utility companies for extension and connection to their services on both a temporary and permanent basis. For gas services, standard fees and special fees for the specified pressure are required.
- 3). The Contractor shall accept the form of contract proposed by the utility companies without exception.
- 4). The Contractor shall provide any riders, amendments, etc. to its own insurance policies that it deems proper to cover the work of utility companies in accordance with the agreement or to cover other liabilities that may arise from the contractor's relationship with the utility companies on this project.
- 5). The Contractor shall provide prompt payments to utility companies as required to advance their work, but accept payment for such work from the College in accordance with the Agreement.
- 6). This project includes work to be performed by the following utility companies:

NAME	Contact	Telephone number
Con Edison	Steven Bell	914-925-6157

2.3 Communications Protocol for Contract Administration

- A. Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, Contractor shall communicate through the College Representative to the College. Communications by and with College's consultants shall be through College Representative. Communications by and with Subcontractors and material suppliers shall be through Contractor.

Part 3 – Construction Administration Management

3.1 Project Meetings

- A. 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.
- 1) In addition to the requirements of the Agreement, the Contractor shall submit bi-weekly reports to the Consultant summarizing the last two weeks of work and next two weeks of work anticipated, listing the

percent of work complete by trade, tabulating manpower utilized / projected, relevant shop drawing and submittals progress, relevant offsite fabrication progress and providing other information which may be reasonably required to understand the progress of the work.

- 2) In addition to the above referenced meetings, the Contractor shall schedule and manage periodic coordination meetings at the site between it and all its trades, subcontractors, suppliers, manufacturers, etc. to settle the allotment of work per the Agreement and to review progress on submittals and shop drawing, progress on installation of the work, conflicts between work of trades, compliance with the design intent, adherence to the Contractor's schedule, quality control, planning for commissioning and training of campus personnel, and other items which require coordination and sharing of information. Representatives of the Consultant and the University may attend these meetings to observe and make comments. These meetings shall be held a minimum of once per month and more frequently where required to effectively coordinate the construction. The Contractor shall prepare and distribute summary minutes of these meetings within (5) five working days of the meeting, in accordance with the "Document Tracking and Change Control Paragraph" of this section. Distribution of the coordination meeting minutes shall be to all attendees with copies to the University and Consultant whether they are in attendance or not.
- 3) The personnel representing the Contractor and its principal subcontractors shall have the authority to make decisions directly affecting the work.
- 4) In addition to the above meetings, meet to review fire safety periodically during the work and, starting approximately (16) sixteen weeks prior to the scheduled date of substantial completion, the Contractor's principals, project manager and those of its significant subcontractors shall attend additional weekly meetings with the Owner and its consultant(s) to review the progress on preparing close out deliverables, including those in Sections Operating Instructions and Manuals, Warranties, and Training of Campus Personnel.

3.2 Requests for Information

- A. In the event that the Contractor determines that some portion of the Drawings and Project Manual for the project requires clarification or interpretation by the Consultant, the Contractor shall submit a Request for Information (RFI) in writing to the Consultant. The Contractor shall create an RFI log in a format approved by the Consultant. Submit the RFI log to the consultant prior to each periodic Field Meeting. Update the RFI log to reflect comments received at the Field Meetings. The Contractor shall define the issue that requires clarification or interpretation in clear and concise language as follows:
 - 1) The Contractor shall customize RFI forms and logs for this project and submit them to the Consultant for review and approval prior to submission of any RFIs.
 - 2) Forms should include provisions for the Consultant's response, Contractor acceptance of response or rephrasing of question, and the Consultant's additional response if requested.
 - 3) Forms should include provisions for locating the issue within the building, by room number, name and nearest columns.
 - 4) RFIs shall confirm that reasonable locations for the information required have been reviewed and document those locations by specific references to the Drawings and Project Manual on the RFI.
 - 5) The Contractor shall review the RFI for systemic or global implications, including review of other pending RFIs and work of other phases, so that the final RFI submitted represents a reasonable consolidation of similar requests.
 - 6) The Contractor shall coordinate and review the RFIs originating from its trades, subcontractors, suppliers, manufacturers, etc. for compliance with this process, including polling them and meeting with them onsite to review the issue prior to its submission as an RFI. The Consultant may attend such meetings.
 - 7) Contractor to coordinate response from Consultant with subcontractors.

- 8) The RFI shall contain a description of what the Contractor believes to be the intent of the design documents, with due regard to the Agreement, along with reasons why the RFI is required.
 - 9) RFIs shall only be submitted on the approved forms.
 - 10) RFIs that do not comply with the above requirements will be returned to the Contractor for revision and resubmission.
- B. The Consultant will review all RFIs to determine whether they are RFIs within the meaning of this term as defined above. If the Consultant determines that the document submitted is not an RFI, it will be returned to the Contractor un-reviewed as to content, for resubmission in the proper manner and it will be removed from the RFI log.
- C. The Consultant will respond to all RFIs within (10) ten business days of its receipt, unless the Consultant determines that a longer time is required for an adequate, coordinated response. If the longer response time is deemed necessary, the Consultant will notify the Contractor of that necessity and indicate when the response will be completed within (10) ten business days of its original receipt.
- D. Based on projects of similar complexity, it is anticipated that there may be up to (15) fifteen RFIs on this project and that multiple responses may be required to adequately answer each RFI.
- E. Responses to RFIs shall not change any requirements of the documents.

3.3 Notice of Non-Compliance

- A. In the event the Consultant views the work or some portion thereof and finds that it has not been performed in accordance with the requirements of the contract documents, a Notice of Non-Compliance will be issued to the Contractor for action. Payment shall not be made for any portion of the work for which a Non-Compliance Notice has been issued and the work not corrected to the satisfaction of the Consultant.
- B. Upon receipt of a Non-Compliance Notice the Contractor shall provide a written response to the Notice within ten (10) working days after receipt of the Notice. The Contractor's response shall detail either:
- 1) Why they believe that the work was performed in accordance with the contract documents, or,
 - 2) What corrective action they intend to take, at their sole expense, to correct the non-conforming work.
- C. Refer to the Agreement for Contractors contention to the decision.

3.4 Warranties

- A. Provide warranties for products, equipment, systems and installations required by other technical sections of Contract Documents for duration indicated. Warranties shall be individually listed in the project specific submittal log required by Shop Drawings and Samples.
- 1) All warranties required by Contract Documents shall commence on date of Substantial Completion shown on Page a-1 of the Agreement.
 - a). At no additional cost to the College, for products, equipment, systems and installations completed prior to the date of Substantial Completion, obtain and pay for warranty extensions that cover the additional time between the earlier date of their completion and the date of Substantial Completion.

- 2) Provide a list of all Contractor provided warranties that are specified in Divisions 1 through 48, inclusive, and list who will inspect the work covered by the warranty (if applicable), when it will be done, who witnessed it and when, results (pass/fail), follow up action, comments and other information requested by the Consultant.
 - a) Unless otherwise approved by the College, all inspections must be witnessed and signed off by the Consultant prior to acceptance of Contractor provided warranties that are specified in Divisions 1 through 48, inclusive.
 - b) The Consultant will reject a Warranty issued prior to or without the manufacturer's field inspection of the work, if required in Divisions 1 through 48, inclusive.
- 3) Unless otherwise approved by the Consultant and if required in Divisions 1 through 48, inclusive, the scheduled value of a Contractor provided warranty in the Contract Breakdown required by the Agreement shall be 5% of the amount of the work being warrantied.
- 4) Furnish and organize original warranties in a separate binder with a durable plastic cover. Organize the binder into separate sections by CSI number based on the table of contents of the project manual. Internally subdivide the binder contents with permanent page dividers, logically organized as described below, with tab titles clearly printed under reinforced laminated plastic tabs. Provide a printed Table of Contents.
 - a) Warranties shall be in the form required by the applicable technical sections of Contract Documents. Include procedures to follow and required notifications for warranty claims.
 - b) Warranty Certification: Written certification from the warrantor that the warranty is in effect and non-retractable due to any of the specified conditions. Warranties submitted without warranty certification will not be accepted.
 - c) Deliver the binder to the Consultant with the written notice of Substantial Completion required by the Agreement.
- 5). For uncompleted work delayed beyond date of Substantial Completion, provide updated binder submittal within (10) ten days after acceptance, indicating date of acceptance as start of warranty period for any work delayed beyond date of Substantial Completion.

Applications for payment after the date of Substantial Completion may not be approved until the warranty certification and warranty documents are delivered to the Consultant.

End of Special Conditions for Construction

SECTION 02070
SELECTIVE REMOVALS & DEMOLITION

PART 1 - GENERAL**1.01 DESCRIPTION OF WORK****A. Extent of Work**

Removal and demolition of selected items from selected areas of the building as indicated on the Drawings; items to be removed include, but are not limited to, the following:

1. Removal of existing metal gate.
2. Temporarily remove metal grating around the existing trees, or temporarily protect plants from damage.
3. Removal of existing compound wall.
4. Removal of existing concrete pavers and built-up roof as shown in construction drawings.
5. Saw cut and remove existing roof drains and plug them in the basement level as directed by the Engineer.

B. Recycling and disposal of non-hazardous waste shall be performed in accordance with Section S01524 - Construction Waste Management.

1.03 SUBMITTALS**A. Shop Drawings**

For that part of the Work that is not considered minor alterations or ordinary repairs, submit shop drawings and associated calculations. Demolition drawings and sequencing shall be signed and sealed by a Professional Engineer licensed in the State of New York and Design Drawings of such shall be filed with the Building Department.

B. Schedule

Submit a schedule indicating proposed methods and sequence of operations for selective removals and demolition Work, prior to commencement of operations. The sequence of operations shall be planned, in detail, to ensure uninterrupted progress of school sessions.

C. Submit details and procedures for dust and noise control.

D. Signed receipt for salvaged items delivered to the Department of Education.

E. Quality Control Submittals

1. Contractor Qualifications

- a. Provide proof of Contractor and Professional Engineer qualifications specified under "Quality Assurance".
- b. Provide proof of Refrigerant Recovery Technician qualifications

1.04 RESPONSIBILITY, PROTECTION, DAMAGES, RESTRICTIONS

A. Condition of Space

The Authority assumes no responsibility for actual condition of the space in which removals and demolition Work is performed.

B. Protections

Provide temporary barricades and other forms of protection required to protect Authority and Department of Education property, personnel, students and general public from injury due to selective removals and demolition work.

1. Provide protective measures as required to provide free and safe passage of students, Authority personnel, Department of Education personnel, and the general public.
2. Protect from damage existing finish work that is to remain in place and which becomes exposed during operations.
3. Protect floors with building paper or other suitable covering.

C. Damages

Promptly repair any and all damages to all property and finishes caused by the removals and demolition work; to the Authority's satisfaction and at no extra cost to the Authority.

D. Explosives

The use of explosives is prohibited.

E. No Power-driven Tools for removals and demolition.

1.05 QUALITY ASSURANCE**A. Qualifications**

1. Company specializing in performing the Work of this Section shall have a minimum of 3 years experience and shall have worked on 3 projects of similar size.
2. Preparation of details of demolition of items not constituting minor alterations or ordinary repairs shall be under the direct supervision of and bear the seal of a Licensed Professional Engineer of the State of New York experienced in the design of such work, who shall also be responsible for construction supervision of such.
3. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.

B. Regulatory Requirements

1. Work of this Section shall conform to all requirements of the NYC Building Code and all applicable regulations and guidelines of all governmental authorities having jurisdiction, including, but not limited to, safety, health, and anti-pollution regulations. Where more stringent requirements than those contained in the Building Code or other applicable regulations are given in this Section, the requirements of this Section shall govern.
2. Conform to the requirements of "Safety and Health Standards, Subpart P - Excavations, Trenching and Shoring" - OSHA.

PART 2 - PRODUCTS - NOT APPLICABLE**PART 3 - EXECUTION****3.01 INSPECTION**

- A. Prior to commencement of the selective removals and demolition Work, inspect the areas in which the Work will be performed. Determine and list the existing conditions of area, surfaces and equipment. After the Work in each respective area is completed, determine if adjacent surfaces or equipment have been damaged as a result of the Work; if so, the damage shall be corrected immediately at the Contractor's expense.

- B. Create a safety zone around the demolition area as per Section BC 3306.2.1 of the 2014 NYC Building Code. Fences/barriers shall be erected to prevent persons other than workers from entering.

3.02 REMOVALS AND DEMOLITION WORK

- A. The Contractor shall engage the services of a third party Registered Professional Engineer (not a direct employee) to prepare the details and sequencing of the demolition, complying with all items included in Section BC 3306.5, for that part of the Work that does not constitute a minor alteration or ordinary repair (Refer to Section §28-105.4.2 of the NYC Administrative Code for the items that do not constitute minor alterations or ordinary repairs i.e. items that affect structural, fire or health safety). The Contractor's Engineer shall file Form PW-1 with the Building Department, thereby becoming the Engineer of Record for such demolition work. These submittal documents must be kept at the site as per Section BC 3306.5.2.
- B. Perform selective demolition Work in a systematic manner and use such methods as are required to complete the Work indicated, and in accordance with the Specifications and governing City, State, and Federal regulations.
- C. When walls, partitions, floors, and ceilings (or portions thereof) are indicated to be removed; unless indicated otherwise:
 - 1. Remove all items attached to the surfaces of the construction to be removed.
 - 2. Remove all plumbing piping, fixtures, accessories and rough-in occurring on or in the construction to be removed; cap piping and/or re-route lines as indicated or required.
 - 3. Cap piping and ductwork as indicated or required by the Engineer.
 - 4. Remove all electrical wiring, to include, but not limited to, lighting, communications, alarms and all related appurtenances, conduits, devices, fixtures, and other electrical items and accessories occurring on or in the construction to be removed; disconnect power and remove wiring and conduit back to source.
- D. Carefully remove items, equipment and materials to be retained by the Department of Education and deliver

them to locations indicated in the Article titled "Ownership of Materials".

3.03 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove debris, rubbish and other materials resulting from the removals and demolitions from the building immediately; transport and legally dispose of materials off-site. Disposal method shall be in accordance with City, State, and Federal regulations. Items to be retained by the Department of Education shall be delivered to locations indicated in the Article titled "Ownership of Materials".
- B. Burning of removed materials is not permitted on the job site.

3.04 CLEAN-UP AND REPAIR

- A. Upon completion of removals and demolition Work, remove tools, equipment and all remaining demolished materials from the site.
- B. Repair all damaged areas caused by the removals and demolition Work. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.
- C. All areas in which Work was performed under this Section shall be left "broom-clean."

3.05 OWNERSHIP OF MATERIALS

- A. All equipment, materials, and items removed shall remain the property of SUNY College Purchase, if desired; equipment, material and items not desired to be re-used or retained shall be removed from the site by the Contractor. The Engineer's Representative will designate which equipment, materials and items will be retained.

END OF SECTION

* * *

LIST OF SUBMITTALS

<u>SUBMITTAL</u>	<u>DATE SUBMITTED</u>	<u>DATE APPROVED</u>
Shop Drawings: for work not Considered minor alterations or Ordinary Repairs	_____	_____
Schedule: 1. Schedule of proposed Methods 2. Sequence of operations:	_____	_____
Details & procedures for dust & noise control:	_____	_____
Receipt for salvaged items:	_____	_____
Qualifications: 1. Contractor 2. Professional Engineer 3. Refrigerant Recovery Technician.	_____	_____

* * *

SECTION 02100
SITE PREPARATION

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Remove any existing vegetation. Strip grass, topsoil, and grub all roots in the area shown in the drawings. Perform Work in conjunction with Section 02200.

1.02 DEFINITIONS

- A. Improvements

Man-produced items such as concrete, brick, asphalt, piping, etc. Those items not naturally occurring.

1.03 SUBMITTALS

- A. Existing Conditions Survey

- 1. Notification of discrepancies in existing site conditions as compared to the survey and pre-bid inspections.

- 2. Notification of damaged salvage items.

- B. Contractor Qualifications

Provide proof of Contractor qualifications specified under "Quality Assurance".

1.04 QUALITY ASSURANCE

- A. Qualifications

Company specializing in the Work of this Section shall have a minimum of 3 years experience.

- B. Regulatory Requirements

Work of this Section shall conform to all requirements of the NYC Building Code and all applicable regulations of governmental authorities having jurisdiction, including safety, health, and anti-pollution regulations. Where more severe requirements than those contained in the Building Code are given in this Section, the requirements of this Section shall govern.

1.05 EXISTING CONDITIONS

- A. Obtain all Building Department data available on the lot and those adjacent lots affecting or being affected by the project construction.
- B. Prior to clearing and removal or abandonment of improvements, ascertain the exact locations of all existing underground utilities. Protect these during subsequent operations.

1.06 SEQUENCING AND SCHEDULING

- A. Perform work in such a manner to ensure a minimum interference with roads, walks, adjacent properties, and facilities to remain open. Do not close or obstruct these items without obtaining permits from the agencies having jurisdiction or the permission of the adjacent owners.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION**3.01 VERIFICATION OF CONDITIONS**

- A. Verify existing site conditions match those of the survey and pre-bid inspections. Notify the Engineer in writing prior to commencement of Work of any discrepancies.

3.02 PROTECTION

- A. Provide adequate protection measures to protect workmen and pedestrians at the site.
- B. Provide for surface drainage during construction to avoid creating a nuisance to adjacent buildings and properties. Provide for sedimentation and erosion control as specified in Section 02200.
- C. Existing Improvements
 - 1. Prevent damage to existing improvements designated to remain. If they are damaged during construction, restore improvements to their original condition.
 - 2. Prevent damage to improvements on adjoining properties. Restore damaged improvements to their original condition to the satisfaction of their owner.

D. Existing Trees and Vegetation

1. Hire a qualified horticulturist or arborist to supervise the protection of and the repair or replacement of damaged trees or other vegetation.
2. Protect existing trees and other vegetation designated to remain from damage due to construction to the satisfaction of the Engineer.
 - a. The Contractor shall be responsible for the protection of tops, trunks, and root systems of existing trees on the project site that are to remain. Existing trees subject to construction damage shall be boxed, fenced, or otherwise protected before any work is started; remove boxing when directed. Do not permit heavy equipment or stockpiles within branch spread. Under the direction of the horticulturist, remove interfering branches without injury to trunks and cover scars with tree paint.
 - b. Where excavating, filling, or grading is required within the branch spread of trees that are to remain, the work shall be performed under the direction of the horticulturist.
 - c. Water trees and vegetation as required to maintain their health until project is finished.
 - d. When trenching occurs around trees to remain, the tree roots shall not be cut but the trench shall be tunneled under or around the roots by careful hand digging and without injury to the roots.
 - e. Protect roots over 1¹/₂" in diameter that are cut during construction. Coat surfaces with an acceptable coating and cover exposed roots with wet burlap.
 - f. When existing grade at the tree is below the new finished grade and fill not exceeding 16" is required, clean washed gravel graded from 1" to 2" in size shall be placed directly around the tree trunk. The gravel shall extend out from trunk on all sides a minimum of 18" and finish approximately 2" above the finished grade at the tree. Install gravel before any earth fill is

placed. New earth shall not be left in contact with the trunks of any trees requiring fill.

- g. Existing trees in areas where the new finished grade is to be lowered shall have regrading work done by hand to elevation indicated. Roots, as required, shall be cut cleanly 3" below finished grade and scars covered with tree paint.

- 3. Repair or replace damaged trees or vegetation to the satisfaction of the Engineer.

E. Salvageable Improvements

- 1. Carefully remove and protect all items to be saved and reused as indicated on Drawings. Replace any items which are damaged by removal at own cost.
- 2. Notify the Engineer in writing of any item which is damaged prior to removal so that they may ascertain the item's condition.

3.03 CLEARING OF SITE

A. General

Remove all trees, vegetation, stumps, roots, foundation walls, improvements, rubbish, site debris, and all other materials and encumbrances of every name and nature visible to sight or found in excavating unless designated to remain or be abandoned. Remove abandoned improvements in part or whole that interfere with construction.

B. Clearing and Grubbing of Organic Matter.

- 1. Completely remove stumps, roots, and other organic matter. Grub roots to 18" below existing grade for new planted areas.
- 2. Grub inside dripline of trees designated to remain by hand methods only.
- 3. Fill depressions caused by removal in accordance with Section 02200.

C. Top Soil

- 1. Strip top soil to full depths encountered (minimum 6") or to levels indicated. Prevent top soil from mixing with subsoil.

2. Leave existing top soil in place within driplines of existing trees to remain.

D. Removal and Abandonment of Improvements

1. Remove all existing above and below grade improvements, unless they are designated to remain or be abandoned.
2. Remove portions of improvements to remain where necessary to facilitate new construction.
3. Abandonment or removal of existing water, gas, or sewer lines is part of the Work of Divisions 15 and 16. Removal of portions of these abandoned lines to facilitate new construction is part of the Work of this Section or Section 02200.
4. Clean out, disinfect, and fill any existing wells, cesspools, or privy vaults designated to be abandoned.

E. Disposal

1. Remove and dispose of away from the premises all excavated material of every kind, in a legal manner and in conformance with the requirements of Section 02200.
2. Burning of material on the site is not permitted.

END OF SECTION

LIST OF SUBMITTALS

<u>SUBMITTAL</u>	<u>DATE SUBMITTED</u>	<u>DATE APPROVED</u>
Existing Conditions Survey:	_____	_____
1. Notification of discrepancies in existing site conditions, if applicable.		
2. Notification of damaged salvage items, if applicable		
Qualifications	_____	_____
1. Contractor		

SECTION 02201
EARTHWORK

PART 1 - GENERAL**1.01 DESCRIPTION OF WORK**

- A. Remove all items designated to be removed and excavate for new construction, fill and backfill as required, prepare subgrades and place aggregate bases for slabs, walks, and pavements. Protect existing vegetation and all adjoining properties and existing structures from damage.

1.02 RELATED SECTIONS

- A. Concrete Work.....Section 03005
- B. Unit Concrete Pavers.....Section 02515

1.03 REFERENCES

References and industry standards listed in this Section are applicable to the Work. Unless more restrictive criteria or differing requirements are explicitly stated in the Specifications, or mandated by governing codes or regulations, the recommendations, suggestions, and requirements described in the referenced standards shall be deemed mandatory and applicable to the Work.

- A. American Society of Testing and Materials (ASTM) standards, latest editions.
- B. New York State Department of Environmental Conservation

STARS Memo #1 Petroleum-Contaminated Soil Guidance Policy (entire part except Sections III and IV), last revised August 1992

CP-51: Soil Cleanup Guidance Policy, Issued 10/21/2010 (effective 12/3/2010)

DER-10 Technical Guidance for Site Investigation and Remediation, Issued 5/3/2010 (effective 6/18/2010)
- C. New York Code of Rules and Regulations (NYCRR):
 - 6 NYCRR Part 360, Solid Waste Management Facilities
 - 6 NYCRR Part 364, Waste Transporter Permits
 - 6 NYCRR Part 370, Hazardous Waste Management System - General

- 6 NYCRR Part 371, Identification and Listing of Hazardous Wastes
- 6 NYCRR Part 372, Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities
- 6 NYCRR Part 373, Hazardous Waste Management Facilities
- 6 NYCRR Part 375, Environmental Remediation Programs
- D. United States Department of Transportation (USDOT):
 - 49 CFR 172, Subpart C - Shipping Papers
 - 49 CFR 172, Subpart D - Marking
 - 49 CFR 172, Subpart E - Labeling
 - 49 CFR 172, Subpart F - Placarding
 - 49 CFR 172, Subpart G - Emergency Response Information
 - 49 CFR 173, General Requirements for Shipments and Packagings
 - 49 CFR 177, Carriage by Public Highway
- E. United States Environmental Protection Agency (USEPA):
 - 40 CFR Part 261, Identification and Listing of Hazardous Waste
 - 40 CFR Part 262, Standards Applicable to Generators of Hazardous Waste
 - 40 CFR Part 263, Standards Applicable to Transporters of Hazardous Waste
 - 40 CFR Part 264, Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
 - 40 CFR Part 265, Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
- F. United States Department of Labor (USDOL), Occupational Safety and Health Administration (OSHA):
 - 29 CFR 1910, Occupational Safety and Health Standards
- G. All Applicable New York City Department of Environmental Protection (NYCDEP) Rules and Regulations

- H. All applicable New York City Department of Transportation (NYCDOT), Department of Sanitation (NYCDOS), Department of Buildings (NYCDOB), and Transit Authority (NYCTA) Rules and Regulations

1.04 DEFINITIONS

A. Excavation

Excavation is considered unclassified and consists of removal of material encountered to contract level, stockpiling, testing, loading, handling, transporting and subsequent legal disposal of such.

B. Improvements

Man-produced items such as concrete, brick, asphalt, piping, etc. Those items not naturally occurring.

C. Non-Hazardous Excavated Material

Material that may include or contain mixtures of the following: soil (including, but not limited to, natural undisturbed material), debris, concrete and concrete products (including steel or fiberglass reinforcing rods that are embedded in the concrete), asphalt pavement, brick, glass, rock, municipal solid waste, refuse, and incidental ash. This material includes material defined in Title 6 New York Code of Rules and Regulations 360-7.1(b)(1)(i) and will exceed 6 NYCRR 375-6 Unrestricted Use and Restricted Use Soil Cleanup Objectives and NYSDEC CP-51: Soil Cleanup Guidance Supplemental Soil Cleanup Objectives.

All material excavated from the site is assumed to meet the definition of non-hazardous excavated material.

D. Petroleum-Contaminated Material

Material (soil, concrete, sediment, UST contents, fill, debris, etc.) that meets the NYSDEC STARS Memo #1 definition of petroleum-contaminated material from known source areas. Petroleum-contaminated material shall be evidenced by the following observations and be from a known source area: producing higher than background responses on a portable vapor meter such as a photo ionization detector or flame ionization detector, petroleum-like odor, visual impacts (e.g., staining or discoloration), proximity to known releases from existing or historic petroleum storage tanks or systems, and exceed the soil cleanup levels for gasoline and/or fuel oil contaminated soil provided in the NYSDEC CP-51: Soil Cleanup Guidance. The determination as to whether the excavated material is petroleum-contaminated or is non-petroleum contaminated material will be made by analytical testing of representative material samples.

All sampling shall be performed under the supervision of the Engineer's IEH Division or its representative. The Contractor shall provide the Engineer's IEH Division with qualitative and quantitative information, and the IEH Division shall make the final determination as to whether or not the material is petroleum-contaminated and the appropriate disposal.

E. Hazardous Waste

Material meeting the definition of a Resource Conservation and Recovery Act hazardous waste as defined in 40 CFR Part 261, New York State ECL Section 27-09 or 6 NYCRR Part 371.

F. Environmentally Clean Fill and Backfill

1. For fill and backfill proposed for use as cover material (landscaped areas of the site within 2 vertical feet of the final surface grade elevation), environmentally clean fill is defined as soil that has been tested utilizing methods which yield laboratory reporting limits that are below the regulatory comparison criteria and found to contain:
 - a. No detectable concentrations of volatile organic compounds;
 - b. No other organic compounds or inorganic analytes at concentrations above 6 NYCRR 375-6 Unrestricted Use Soil Cleanup Objectives; and
 - c. No other organic compounds or inorganic analytes at concentrations above the lower of the NYSDEC CP-51: Soil Cleanup Guidance Residential Use, Protection of Ecological Resources, and Protection of Groundwater Supplemental Soil Cleanup Objectives.
 - d. For sites with no ecological resources (as described in CP-51, Section V.C.) the Supplemental Soil Cleanup Objectives for Ecological Resources shall not apply. The determination regarding whether ecological resources are present shall be made by the IEH Division of the Engineer.
2. For fill and backfill proposed for use below cover material (as defined in the previous paragraph) and underneath areas with no potential for public contact (e.g., floor slabs and pavement), environmentally clean fill is defined as soil that has been tested utilizing methods which yield laboratory reporting limits that are below the

regulatory comparison criteria and found to contain:

- a. No detectable concentrations of volatile organic compounds;
- b. No other organic compounds or inorganic analytes at concentrations above the lower of DER-10 Technical Guidance for Site Investigation and Remediation, Appendix 5, "Allowable Constituent Levels for Imported Fill or Soil" Restricted Residential Use and Ecological Resources Soil Cleanup Objectives; and,
- c. No other organic compounds or inorganic analytes at concentrations above the lower of the NYSDEC CP-51: Soil Cleanup Guidance Residential Use, Protection of Ecological Resources, and Protection of Groundwater Supplemental Soil Cleanup Objectives.
- d. For sites with no ecological resources (as described in CP-51, Section V.C.) the Soil Cleanup Objectives for Ecological Resources shall not apply. The determination regarding whether ecological resources are present shall be made by the IEH Division of the Engineer.

1.05 SUBMITTALS

A. Product Data

Provide manufacturer's information on the compaction equipment to be used on each type of material for review.

B. Shop Drawings

Submit shop drawings and associated calculations for sheeting, shoring, and bracing. Shop drawings and calculations shall be signed and sealed by a New York State licensed professional

C. Samples

Provide a 15 pound bag of each material used for fill, backfill, aggregate base, and crushed stone to the Engineer's testing laboratory.

D. Quality Control Submittals

1. Design Data:

Provide the following information:

- a. Gradation analysis for fill materials.
- b. Gradation analysis for aggregate bases.
- c. Gradation analysis for crushed stone.
- d. Material composition analysis of recycled concrete material.

2. Existing Conditions Survey

Submit existing conditions survey and monitoring plan consisting of various data described in Article 3.02 of this Section. Monitoring Plan shall be prepared in accordance with Section BC 3309.16 of the 2014 NYC Building Code.

3. Certificates

- a. Provide certificate guaranteeing fill and backfill material used for construction conforms to the samples supplied and the requirements of this section.
- b. Provide certificate guaranteeing aggregate materials used for construction conform to the gradation supplied and the requirements of this section.
- c. Provide facility permits, material acceptance requirements, and waste analytical requirements for each proposed off-site disposal facility that conform to the requirements of this section.
- d. Provide a certification, along with the testing results indicated below under "Testing", to the IEH Division for review and approval from each proposed borrow area stating that the imported fill and aggregate are environmentally clean and each meet the requirements of this section of the specifications and the test data is representative of the source. The letter shall also provide for each borrow area site: street address; section, block and lot numbers; and, a description of the current and former uses of each borrow area site.
- e. Provide a certification at the time of delivery of each load of environmentally clean fill that the load was shipped to the site directly from the Engineer approved source of environmentally clean fill. This certification shall show the name and address

of the source of each load, the license plate number of the vehicle transporting the load, and the time of departure of the load from the source.

4. Contractor Qualifications

Provide proof of Contractor and Professional Engineer qualifications specified under "Quality Assurance".

5. Testing

a. Provide analytical testing of:

- 1) Existing material to be removed to satisfy requirements of disposal facilities.
- 2) Borrow (imported fill) material to verify it is environmentally clean fill for use as cover material and for use below cover material or underneath areas with no potential for public contact. Samples shall be collected at a frequency of no less than one sample per 500 cubic yards and shall be analyzed for the full list of 6 NYCRR Part 375 and NYSDEC CP-51 Supplemental Soil Cleanup Objectives Parameters (as defined above) using acceptable laboratory reporting limits (below the regulatory comparison criteria) to demonstrate that the soil complies with the requirements for environmentally clean fill.
- 3) Existing material to be reused on-site to verify that the material meets the definition of environmentally clean fill for use as cover material and for use below cover material or underneath areas with no potential for public contact. Samples shall be collected at a frequency of no less than one sample per 500 cubic yards and shall be analyzed for 6 NYCRR Part 375 and NYSDEC CP-51 Supplemental Soil Cleanup Objectives Parameters (as defined above) using acceptable laboratory reporting limits (below the regulatory comparison criteria) to demonstrate that the soil complies with the requirements for environmentally clean fill.

- b. Analytical testing shall be performed by a New York State Department of Health Environmental Laboratory Approval Program (ELAP) certified laboratory engaged by the Contractor. Laboratory reporting limits shall be acceptable to the Engineer (i.e., below the regulatory comparison criteria). Utilize "Template 1A or "Template 1B" as directed by the Engineer's IEH Division provided at the end of this section. The Contractor shall strictly adhere to the format and content guidance of the IEH Division template tables.

6. Documentation of Proper Disposal

Documentation acceptable to the Engineer that material removed from the site for disposal has been disposed of at a facility approved by the Engineer.

- E. Excavated Material Disposal Plan

Excavated Material Disposal Plan prepared in accordance with Article "Disposal of Excavated Material" of this Section and good engineering practices. Utilize "Template 2" provided at the end of this section.

1.06 QUALITY ASSURANCE

- A. Qualifications

1. Company specializing in performing the Work of this Section shall have a minimum of 3 years experience and shall have worked on 3 projects of similar size.
2. Preparation of details of sheeting, shoring, and bracing as well as monitoring plans shall be under the direct supervision of and bear the seal of a Licensed Professional Engineer of the State of New York experienced in the design of such work, who shall also be responsible for filing such documents and the construction supervision of such.

- B. Regulatory Requirements

1. Work of this Section shall conform to all requirements of the NYC Building Code and all applicable regulations and guidelines of all governmental authorities having jurisdiction, including, but not limited to, safety, health, and anti-pollution regulations. Where more stringent requirements than those contained in the Building Code or other applicable regulations are given in

this Section, the requirements of this Section shall govern.

2. Conform to requirements of "Safety and Health Standards, Subpart P - Excavations, Trenching and Shoring" - OSHA.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Imported fill and aggregate materials to be used for project are to be stockpiled separately at the producer's facility and shall be accessible to inspection and quality control (QC) testing by the Engineer.
- B. Stockpile material brought to the site prior to placing in order to allow for testing by the Engineer's testing laboratory. Stockpile material in such a manner as to prevent erosion and dust. Provide silt curbs if necessary.
- C. Testing and certification of all imported environmentally clean fill and aggregate are the responsibilities of the Contractor.

1.08 PROJECT/SITE CONDITIONS

- A. Obtain all Building Department data available on the lot and those adjacent lots affecting or being affected by the project construction.
- B. Prior to clearing and removal or abandonment of improvements, ascertain the exact locations of all existing underground utilities. Protect these during subsequent operations.
 1. Demolish and remove underground utilities designated to be removed. Coordinate with utility companies for shut-off of services if lines are active.
 2. Consult immediately with the utility owner for directions should uncharted or incorrectly charted piping or other utilities be encountered during excavation. Cooperate with the utility owner, the Board of Education, and owners of lots serviced by the utilities in keeping their respective services and facilities in operation. Repair damaged utilities to the satisfaction of the Utility Owner.
 3. Do not interrupt existing utilities serving facilities occupied and used by the Board of Education or others during occupied hours, except when permitted in writing by the Department of Education and the affected lot owners, and only after acceptable temporary utility service has been

provided. Do not proceed with interruption of services without providing a minimum of 48 -hours notice to the affected parties and receiving their written approval.

C. Coordination

Examine drawings to determine sequence of operations, and relation to work of other trades. Start of work will signify acceptance of field conditions and will acknowledge coordination with other trades.

1.09 SEQUENCING AND SCHEDULING

- A. Perform work in such a manner to ensure a minimum interference with roads, walks, adjacent properties, and facilities to remain open. Do not close or obstruct these items without obtaining permits from the agencies having jurisdiction or the permission of the adjacent owners.
- B. There shall be no petroleum-contaminated material and/or hazardous waste excavation and handling activities performed when the existing building is in use by the Department of Education or others during occupied hours, except when permitted in writing by the Engineer.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Restricted Excavated Material

Remove all debris not explicitly designated to be salvaged (to remain) from improvements and soil excavated during construction from premises and legally dispose of away from premises as part of the base bid. Any environmentally clean fill (as defined in Paragraph 1.04F of this Section and tested to meet such requirement) meeting the gradation requirements of Paragraph B below may be reused on the site pending credit to the Engineer.

B. Fill and Backfill

Only environmentally clean fill (as defined in Paragraph 1.04F of this Section) shall be used as fill and backfill. All fill and backfill shall be material classified as controlled fill by the New York City Building Code. Composition shall consist of a mixture of angular sands and gravels. Flat structured material such as mica (the main component of "mole" rock) falling into the acceptable gradation or other material affecting the permeability and structural characteristics of the sand material shall be no more than .4% of the total material. Material shall not

contain salts or foreign materials of any kind and the material shall show a percentage of wear by the Los Angeles wear test (ASTM C131) of not more than 35%. These fill materials shall contain no particles exceeding 3" in the largest dimension. No more than 30% of the material by weight shall be retained on a 3/4" sieve. No more than 10% shall pass the No. 200 sieve by weight. The Contractor shall provide the Engineer with laboratory data on material proposed for use as fill/backfill. Samples shall be collected from imported material and material proposed for reuse on-site. The Contractor shall collect and analyze one representative sample of each material for every 500 cubic yards of imported fill/backfill brought to the site or material proposed for reuse on site for the complete list of 6 NYCRR Part 375 and NYSDEC CP-51 Supplemental Soil Cleanup Objectives Parameters as defined in Paragraph 1.04F.

C. Aggregate Base

1. Aggregate base course, to be used under pavements, driveways, and slabs, shall be composed of crushed ledge rock (blue stone) or talus, roughly cubical or pyramidal in shape, and sand meeting the gradation and soundness requirements of New York State DOT, Item 3.04.02, Type 2. Material shall be uniform in quality and free of wood, loam, clay, dirt, roots, bark, and any other extraneous material. Material shall not contain salts or foreign materials of any kind. The aggregate shall be produced from material showing a percentage of wear by the Los Angeles wear test (ASTM C131) of not more than 35%.

2. Stone shall have the following gradation:

Sieve	Percent Passing by Weight
2"	100
1/4"	25-60
No. 40	5-40
No. 200	0-10

D. Crushed Stone

1. Crushed stone, to be used under interior slabs on grade and backfill at narrow excavations, shall be composed of crushed ledge rock (blue stone) or talus, roughly cubical or pyramidal in shape, with a gradation conforming to ASTM C33 No. 57 stone. Material shall be uniform in quality and free of wood, loam, clay, dirt, roots, bark, and any other extraneous material. Material shall not contain salts or foreign materials of any kind. The aggregate shall be produced from

material showing a percentage of wear by the Los Angeles wear test (ASTM C131) of not more than 35%.

2. Stone shall have the following gradation:

Sieve	Percent Passing by Weight
1 1/2"	100
1"	95-100
1/2"	25-60
No. 4	0-15
No. 8	0-5

E. Recycled Concrete Aggregate

1. As an option, recycled concrete aggregate may be used instead of ledge rock for aggregate base, crushed stone, and broken stone ballast (meeting the indicated gradations for each), depending on the soundness of aggregates, which are at the Engineer of Record's option. The material must be clean, with no deleterious material visible (wood, brick, metal, or other friable material) and meet the following criteria:
 - a. Material shall consist of at least 99% by weight of Portland cement concrete or ledge rock.
 - b. Material making up the remaining 1% shall be as follows:
 - 1) Wood - 0.1% maximum
 - 2) Brick, mica schist, metal, or other friable stone material - 0.4% maximum
 - 3) Asphaltic Concrete - 1% maximum
 - c. Material shall be environmentally clean (as defined in Article 1.04F of this Section).

2.02 EQUIPMENT

- A. Provide proper compaction equipment to properly compact subgrade, fill and backfill, aggregate base, crushed stone and broken stone base. Subgrade compaction requirements are indicated in those sections. Employ a Licensed Professional Engineer to determine soil type and which equipment will give the proper compaction.

2.03 SOURCE QUALITY CONTROL**A. Tests**

The Engineer 's Testing Laboratory will perform the following laboratory tests:

1. Sieve Analysis: Performed in accordance with ASTM D422 on submitted fill samples to verify material meets gradation requirements.
2. Moisture Density Curve: Optimum moisture content obtained from submitted fill samples, tested in accordance with ASTM D1557.

B. Inspection**1. Testing Laboratory**

- a. The Engineer will engage an approved Testing Laboratory or Special Inspection Agency to perform laboratory tests and field compaction testing on the fill/backfill materials and subgrade.
- b. The Laboratory will be responsible to and under the supervision of a Special Inspector.

2. Special Inspection

The Engineer will assign, under the requirements as defined in Chapter 1 Title 28 of the NYC Administrative Code and Section BC 1704.7 of the 2014 NYC Building Code, a Special Inspector to supervise the testing of the controlled filling operations and approval of the subgrade bearing capacity, as well as and inspection of shoring operations as per Section BC 1704.20.2.

3. Contractor's Responsibility

Inspections and testing performed by the Engineer's agent(s) shall not relieve the Contractor of responsibility for performing all other testing and inspection specified herein or otherwise necessary to meet the quality control and quality assurance requirements of this Section.

PART 3 - EXECUTION**3.01 EXAMINATION****A. Verification of Conditions**

Verify existing site conditions match those of the Drawings and pre-bid inspections. Notify the Engineer

in writing prior to commencement of Work of any discrepancies.

B. Preparation

1. Before starting any excavation work for new construction, ascertain the exact locations of all existing underground drain lines, piping, and conduits. Consult with the Mechanical Trades.
2. At location where any of the above services interfere with the excavation work, notify the Engineer and Mechanical Trade under whose jurisdiction such work falls before continuing with any more excavation.

3.02 PREPARATION AND PROTECTION

A. General

1. Provide adequate protection measures to protect workmen and pedestrians at the site.
2. Prevent damage to existing improvements designated to remain. If they are damaged during construction, restore improvements to their original condition.
3. Prevent damage to improvements on adjoining properties. Restore damaged improvements to their original condition to the satisfaction of their owner. Restore grades and vegetation to their original condition or better.
4. Hire a qualified horticulturist or arborist to supervise the protection of and the repair or replacement of damaged trees or other vegetation, including those of adjacent properties. Vegetation damaged during construction shall be replaced with same size and type.
5. Salvable Improvements
 - a. Carefully remove and protect all items to be saved and reused. Replace any items which are damaged by removal at own cost.
 - b. Notify the Engineer in writing of any item which is damaged prior to removal so that they may ascertain the item's condition.

B. Condition Survey

1. General: The Contractor shall perform a condition survey of the adjoining properties and existing

school building prior to beginning excavation. Note damage to existing structures.

2. Photographs: Take photographs of the building walls of the adjoining properties and existing school so that the surfaces may be examined during construction and compared with the pre-work condition. If any cracks or other stress signs are exhibited by the buildings, halt operations until corrective action has been provided and is acceptable to the Engineer. Take photographs of existing vegetation to record condition, size, and type.
3. Monitoring
 - a. Retain a Licensed Surveyor to provide a survey of existing conditions of adjoining properties and existing school (if applicable). Engage a Licensed Professional Engineer to develop a monitoring plan, which is to be implemented by the Contractor, as required by Sections BC 3309.6 and BC 3309.4.4. Monitoring Plan shall be in accordance with Section BC 3309.16.
 - b. Survey adjacent structures and improvements, establishing exact elevations at fixed points to act as benchmarks.
 - c. Clearly identify benchmarks and record existing elevations. Locate datum level used to establish benchmark elevations sufficiently distant so as not to be affected by movement resulting from excavation operations.
 - d. All work shall be laid out giving all points, lines, and levels from established points on the Drawings. Elevations shall be verified from existing benchmarks by the Surveyor.
 - e. During excavation, resurvey benchmarks weekly, employing a Licensed Land Surveyor or Licensed Professional Engineer. Maintain accurate log of surveyed elevations for comparison with original elevations.
 - f. Should benchmark readings indicate displacement, halt operations until corrective action has been provided and is acceptable to the Engineer.

C. Shoring, Sheeting, and Bracing

1. General

- a. Inspect site, examine existing conditions and make all necessary preparations for the safe and proper sequence of work.
- b. Properly guard and protect excavations so as to prevent them from becoming dangerous to person or property.
- c. Properly slope sides of excavation or provide shoring, sheeting and bracing to prevent caving, erosion, or gullyng of sides of excavations. The sides of all excavations that are 5 feet or greater in depth measured from adjacent ground surface to the deepest point, shall be protected to prevent the sides from caving in. Alternatively, excavation sides may be sloped not steeper than 45 degrees.
- d. Brace, shore, and protect existing structures when excavations are made adjacent to the existing structures or within a distance that they will be affected by the excavation.
- e. Maintain sides and slope of excavation in safe condition until backfilling or other work is complete. Maintain shoring and bracing in place till completion of work. Ensure that after all rainstorms all sides or slopes of excavations are inspected as per Section BC 3304.5.1 and safe conditions restored.
- f. Provide materials for work in good serviceable order.
- g. All shoring, bracing, etc. is to be removed upon completion of the work where they are installed, including any portion thereof, outside of street and lot lines. Within the lot, remove all wood and cut steel elements at a minimum to 4 feet below grade. Where they interfere with new work and utilities, remove elements in their entirety.

2. Inspection and Code Requirements

- a. Sheeting, shoring, and bracing for protection of excavations and protection of adjacent structures and the public is the responsibility of the Contractor and shall

comply with the requirements of Section BC 3309, Protection of Adjoining Property.

- b. The most stringent requirements of the Building Code, Contract Drawings, Specifications, or any authorities having jurisdiction shall govern this Work.
- c. Coordinate Work of this Section with Work of all other Divisions so as to properly, and completely, install all Work as drawn or specified.
- d. The Contractor shall engage the services of a third party Registered Professional Engineer (not a direct employee) to prepare details of bracing, sheeting, shoring, party wall stabilization, and other construction as well as preparation of the monitoring plan required for protection of excavations and support of adjacent properties or buildings as per Sections BC 1704.20.7, BC 3309.6 and BC 3309.4.4. These drawings shall be submitted to the Engineer of Record for general review, which does not relieve the Contractor's Engineer of responsibility for the adequacy of the design.

D. Water Control - Dewatering

- 1. Prevent surface water from flowing into excavations and from flooding the project site and surrounding area in order to keep the site and foundation subgrades dry.
- 2. Provide and maintain pumps and other dewatering system components necessary to convey water out of excavations and demolitions, as well as removing away all surface water. Remove all water from the area of Work.
- 3. The Contractor shall utilize methods that minimize drawdown and pumping rates, and comply with dewatering permit.
- 4. The Contractor shall be responsible for all remedial action due to problems arising from improper/illegal dewatering. The Contractor shall obtain all permits from governing regulatory agencies, including but not limited to New York City Department of Environmental Protection (DEP) and New York State Department of Environmental Conservation (DEC), for dewatering and the off-site disposal of water.

5. Dispose of water from site in such manner as will not cause injury to the public health, nor to public or private property, nor to the work completed or in progress, nor to the surface of the streets, nor cause any interference with the use of the same by the public. Contaminated water generated from dewatering activities shall not be disposed of on site. At a minimum, a fractionation tank, oil/water separator, and granular activated carbon adsorption system shall be provided for treatment of contaminated water. Prevent silting of storm sewers by using settling tanks or other devices approved by the DEP. Clean sewer lines that are to be used for disposal of water and waste during construction. The Contractor is responsible for obtaining all necessary permits for disposal of liquids generated during dewatering operations and for the pretreatment of all liquids as required for disposal in accordance with all applicable rules and regulations.

E. Frost Protection

1. Furnish all facilities and materials needed to prevent the earth and/or rock at bottom of excavation from becoming frozen or unsuitable to receive footings, etc.
2. When excavations for footings, etc. have been brought to the bottom elevations indicated on the Drawings and the bottoms of these excavations become frozen or otherwise unsuitable in the opinion of the Special Inspector because of inadequate protection by the Contractor, these excavations shall be carried to lower depths sufficient to provide stable bearings as determined by the Special Inspector and subject to approval by the Engineer of Record and without additional cost to the Engineer.

F. Use of Explosives

The use of explosives is prohibited.

G. Workability of Excavation Subgrade

1. Take all steps necessary to prepare or improve existing conditions for proposed foundation work, including general excavation throughout the project site.
2. Properly grade site and perform operations to avoid disturbing the existing subgrade and any intermediate subgrade.

3. If subgrade conditions are disturbed that prevent earthwork operations or safe operation of foundation installation equipment, the Contractor shall take steps to improve subgrade conditions at own expense. Many types of soils are sensitive to disturbances such as water saturation or construction traffic and become unworkable.

3.03 EXCAVATION - GENERAL

- A. Excavate all earth, rock, and materials of every kind to the Contract elevations and dimensions required by the Drawings and Specifications and any additional required for safe slope of excavation, regardless of the character of materials and obstructions encountered. Prior to excavation, perform GPR survey of area of excavation to determine location of any unknown buried utilities.
- B. Remove trees, vegetation, and improvements designated on the Drawings to be removed. Remove abandoned improvements and those found during construction in part or whole that interfere with construction.
- C. No additional compensation will be allowed for excavation or foundation work carried below the levels shown on Drawings unless same has been authorized in writing by the Engineer. Contractor is responsible for all remedial work due to unauthorized excavation.
- D. Level off and grade bottoms of excavations to receive footings, slabs, pavements, etc.
- E. For pavements and slabs on grade, excavate to depths required for installation of aggregate base or pavement as specified herein or shown on Drawings.
- F. All excavations for foundations and footings must be completed and the underlying soil or rock material approved by the Special Inspector before concrete foundation work is started. The Contractor may, with the written approval of the Engineer, proceed with concrete foundation work before the entire building excavation has been completed. In addition, excavation for foundations and footings shall conform to Section BC 3304 unless more severe requirements are given in this Section.
- G. Remove all excavated material from the site and legally dispose of away from the premises, in accordance with the requirements specified in this section. Burning of material on the site is not permitted.
- H. Trenching for pipes and conduits is described under "Excavation of Trenches."

3.04 EXCAVATION - ROCK

Not Used

3.05 EXCAVATION OF TRENCHES

- A. Trenching shall be accomplished with an appropriate trenching machine, except hand trenching shall be used where machine may damage existing underground pipe, conduit, or other objects to remain.
- B. Excavate trenches to elevations required to install pipes and conduits at required inverts, as required by governing regulatory agencies, as shown on Drawings, as specified herein, and to allow encasement in concrete when indicated on Drawings. All items shall have full bearing when placed.
- C. Remove loose material and proofroll trench subgrade with a vibratory plate or jumping compactor (a minimum of 6 passes, 3 in each direction, if material is fill) in the presence of the Special Inspector. Remove any soft spots and replace with controlled fill, compacting material in 4" lifts to 92% (95% in vehicular areas) of maximum dry density by ASTM D1557 at optimum moisture content.
- D. Excavate trenches of sufficient width to allow for proper installation of the require item.
- E. Prevent trench bottoms from freezing until items are placed and the trench backfilled.
- F. Fill trench with concrete to a depth even with the bottom of footings when excavations pass within 18" of the footings at a depth below the footing. Continue concrete 2'-0" each side of the footing.
- G. Trenches shall be dry when trench bottom is prepared and, where applicable, when bedding concrete is placed.
- H. At water pipe, line trenches with non-woven geotextile filter fabric immediately before pipe laying to prevent soil contamination in the pipe.

3.06 DISPOSAL OF EXCAVATED MATERIAL

A. Description of Work

- 1. Deliver material excavated from the site to an approved off-site disposal facility identified in the Excavated Material Disposal Plan. The Excavated Material Disposal Plan must be prepared in accordance with Paragraph B utilizing Template 2 of this Section and must be submitted and approved by

the Engineer's Industrial and Environmental Hygiene Division (IEH) prior to the start of excavation. No claims of delay shall be permitted due to the Contractor's failure to obtain approval of the Excavated Material Disposal Plan from the IEH Division. All required sampling and testing are part of the Work and are to be done by the Contractor as part of this project at no additional cost to the Engineer. The resulting sampling data is to be submitted to the Engineer as an addendum to the Excavated Material Disposal Plan.

2. Non-Hazardous Excavated Material, as defined in Paragraph 1.04C, that has been excavated as part of the construction project, shall be transported to an off-site disposal facility meeting the requirements of 6 NYCRR Part 360 or equivalent out-of-state facility approved by the appropriate regulatory agency of that State with a permit to receive non-hazardous excavated material. All petroleum-contaminated material, as defined in Paragraph 1.04D, if discovered, shall be transported to an off-site disposal facility permitted to receive petroleum-contaminated material from known source areas. All hazardous waste, as defined in Paragraph 1.04E, if discovered, shall be transported to an off-site disposal facility meeting the requirements of 40 CFR Part 265 and 6 NYCRR Part 373 or equivalent out-of-state facility approved by the appropriate regulatory agency of that State with a permit to receive hazardous waste. All material excavated from the site is assumed to meet the definition of non-hazardous excavated material as defined in Paragraph 1.04C. If any petroleum-contaminated material or hazardous waste, as defined in Paragraphs 1.04D. and E., is found during the excavation, notify the Engineer for directions on disposal.

B. Excavated Material Disposal Plan

An Excavated Material Disposal Plan shall be prepared by the Contractor and approved by NYCSCA IEH for non-hazardous excavated material at a minimum of four weeks prior to the start of excavation. A separate Excavated Material Disposal Plan for any additional categories of material, as defined in Paragraphs 1.04D and E, encountered during the excavation, shall be prepared by the Contractor and approved by NYCSCA IEH prior to removing the material off-site. The Excavated Material Disposal Plan shall be prepared and signed by a Certified Hazardous Materials Manager approved by the Institute of Hazardous Materials Management in Rockville, Maryland, or Qualified Environmental Professional, approved by the Institute of Professional

Environmental Practice, Pittsburgh, Pennsylvania, or similar board-certified professions. The Excavated Material Disposal Plan shall be prepared in accordance with the IEH Division template attached to this Section.

The Contractor shall strictly adhere to the format and content guidance of the IEH Division template. In the Excavated Material Disposal Plan, the Contractor shall, at a minimum:

1. Indicate how buried utilities (e.g. electric, gas, water, sewers, telephone, etc.) will be located and provide copies of the resulting information to the Engineer.
2. Confirm appropriate contact will be made with underground facilities protective organizations -in accordance with applicable laws and regulations.
3. Provide a to-scale figure indicating the quantities of excavated material and proposed locations where discrete soil samples shall be collected and which discrete soil samples shall make up each composite sample.
4. Define the acceptance and waste characterization requirements of each proposed disposal facility and define the sampling rates (e.g., one composite sample / 500 cubic yards) along with the estimated quantity of material to be disposed for each proposed disposal facility.
5. Define the sampling methods (e.g. backhoe, Geoprobe®, drill rig, etc.) to be used.
6. Define the analytical parameters and analytical methods for analyzing all samples.
7. Define how chain-of-custody will be maintained and recorded.
8. Define how the QA/QC of the Excavated Material Disposal Plan will be maintained and how it will be subject to audit by both the Engineer and the Contractor.
9. Provide a listing, including company name, name of owner, and address of facility, of the off-site disposal facility(ies) meeting the requirements listed in Item A above, for the specific material to be disposed and a copy of each facility's permit (NYSDEC and/or equivalent out of state) and a complete listing of the facility's pre-acceptance testing and disposal requirements for the specific material.

10. Health and Safety Plan for handling the material to be excavated.
11. Provide a listing, including company name and address, of proposed waste haulers. Provide for each proposed waste hauler a copy of the valid 6 NYCRR 364 Waste Transporter Permit. Contractor shall furnish a list approved by the Engineer that identifies the make, model, truck number and registration plate number of each of the trucks that shall transport the material to the designated facility(ies). All proposed destination facilities, listed as required by 9 above, shall be listed in the waste transporter permits provided.
12. If applicable, provide a completed waste profile form for the proposed facility(ies) along with a cover letter on Contractor letterhead certifying that the Contractor has provided the disposal facility with the analytical data. Contractor must verify in writing that full disclosure of soil characterization has been provided to the disposal facility.

C. Material Suitability and Construction Methods:

1. All material excavated from the site shall be transported by the Contractor to an approved off-site designated facility. Environmentally clean material meeting controlled fill gradation may be reused pending credit to the Engineer. When the Engineer orders the Contractor to excavate during other than normal construction hours, the material shall be stockpiled on the site until the material can be delivered to the facility identified in the approved Excavated Material Disposal Plan. Stockpiled excavated soil shall be covered with heavy duty tarps, secured with sand bags. If there is no room on the site for stockpiling, provide containers for stockpiling or other means.
2. Provide all labor, equipment and material necessary to excavate, stockpile, load, handle, and transport excavated material from the site to the facility(ies) designated in the approved Excavated Material Disposal Plan, as described herein, and conditioned on the following:
 - a. Comply with all rules and regulations of the body governing the facility(ies) listed in the approved Excavated Material Disposal Plan.
 - b. Any sorting of the excavated material required by the designated facility(ies) is

part of the Work and is the responsibility of the Contractor.

- c. Prior to commencing off-site disposal, the Contractor shall furnish a list approved by the Engineer that identifies the make, model, truck number and registration plate number of each of the trucks that shall transport the material to the designated facility(ies) defined in the Excavated Material Disposal Plan. Any change of trucks, or additional trucks, shall have prior approval at least 24 hours in advance. The Contractor shall also furnish a list, approved by the Engineer, of the water-level volume of each truck, regardless of whether or not the truck possesses a DOT truck permit number indicating truck volume.
- d. The Contractor agrees and warrants that each load of such material has originated only from the Project Site described in this Project and has not been mixed with material from any other site.
- e. On a daily basis the Contractor shall provide originals of all dump tickets to the Engineer.

D. Excavated Material

- 1. The excavated material may consist of one or more of the following: non-hazardous excavated material, petroleum-contaminated material and/or hazardous wastes. For the purpose of the base bid, the Contractor shall assume that all material excavated from the site meets the definition of non-hazardous excavated material, and will exceed 6 NYCRR 375-6 Unrestricted Use and Restricted Use Soil Cleanup Objectives and NYSDEC CP-51: Soil Cleanup Guidance Supplemental Soil Cleanup Objectives.
- 2. All excavated material from the site shall be disposed of in one of the following manners.
 - a. In accordance with the approved Excavated Material Disposal Plan developed for this specific material, the Contractor shall transport and dispose of all non-hazardous excavated material at an approved permitted off-site disposal facility meeting the requirements of 6 NYCRR Part 360 or equivalent out-of-state requirements. If material is temporarily stockpiled on-site,

the stockpile shall be covered and silt curbs shall be installed around the stockpile.

- b. If required and directed by the Engineer, the Contractor shall stockpile or stage petroleum-contaminated material, as defined in 1.04D, at the site pending sample analysis and off-site disposal. The stockpile shall be covered and silt curbs shall be installed around the stockpile. The Contractor shall negotiate with an approved off-site disposal facility licensed to receive petroleum-contaminated material. The Contractor shall provide the Engineer with a copy of the off-site disposal facility's permit to receive petroleum-contaminated material as part of the separate Excavated Material Disposal Plan. Prior to disposal of this material, the Contractor shall obtain written authorization from the Engineer. In addition the Contractor shall provide the Engineer with original copies of all shipping papers including manifests, weigh tickets, and original invoices for the disposal of this material. The Contractor shall comply with all applicable federal, state, and local rules and regulations pertaining to the handling, management, loading, transportation, and disposal of petroleum-contaminated material.
- c. If required and directed by the Engineer, the Contractor shall stockpile or stage hazardous waste, as defined in Paragraph 1.04E at the site pending sample analysis and off-site disposal. The stockpile shall be covered and silt curbs shall be installed around the stockpile. The Contractor shall provide the NYCSCA with a copy of the off-site disposal facility's permit to receive hazardous waste as part of the separate Excavated Material Disposal Plan. Prior to disposal of this material, the Contractor shall obtain written authorization from the Engineer. In addition the Contractor shall provide the Engineer with original copies of all shipping papers including manifests, weigh tickets, and original invoices for the disposal of this material. The Contractor shall negotiate with an approved off-site disposal facility meeting the requirements of 40 CFR 265 and licensed to receive hazardous wastes. The Contractor shall comply with all applicable federal, state, and local rules and regulations pertaining to the handling, management, loading, transportation, and disposal of hazardous waste.

3. The Contractor shall provide all labor, equipment and material necessary to excavate, load, handle, and transport excavated material, as described herein, from the site to the designated facility(ies), and in accordance with the following:
 - a. The Contractor shall comply with all applicable federal, state, and local rules and regulations pertaining to the disposal of non-hazardous excavated material, and, if applicable, petroleum-contaminated material, and hazardous waste.
 - b. The Contractor shall use and identify, in the Excavated Material Disposal Plan, only properly licensed and insured off-site disposal facilities that can accept non-hazardous excavated material, and, if applicable, petroleum-contaminated material and/or hazardous waste.
 - c. Prior to commencing off-site disposal, the Contractor shall furnish a list approved by the Engineer that identifies the make, model, truck number and registration plate number of each of the trucks that shall transport the material to the designated facility(ies) defined in the Excavated Material Disposal Plan. Any change of trucks, or additional trucks, shall have prior approval at least 24 hours in advance. The Contractor shall also furnish a list, approved by the Engineer, of the water-level volume of each truck, regardless of whether or not the truck possesses a DOT truck permit number indicating truck volume.
4. The Contractor is responsible for implementing all appropriate dust and/or odor control measures, including, but not limited to, water suppression.
5. Prior to departure from the site, transport vehicles shipping excavated material shall be inspected and cleaned to prevent tracking material off-site. Contractor shall properly collect and properly dispose, at an Engineer -approved facility, all waste generated from cleaning.
6. The Contractor shall provide all required notifications to federal, state and local agencies prior to transporting material off site. Copies of all notifications issued shall be transmitted to the Engineer at the time of issuance.

7. The Contractor shall screen drivers of transport vehicles prior to engagement and prior to departure from the site. Vehicle drivers shall be fully-licensed and possess appropriate training.
8. Vehicles used to transport excavated material shall be designed, equipped, operated and maintained to prevent leakage, spillage and airborne emissions during transport. Only safe, suitable and well-maintained vehicles, which are properly labeled/placarded, manned, permitted and registered to perform the required transportation services, shall be used.

E. Payment

1. All labor, materials, equipment, and incidentals to perform all work under this Section shall be included in the base bid. No separate payment will be made for any Work associated with the disposal of non-hazardous excavated material, as the cost of said work shall be deemed included in the Contract.
2. Reimbursement of payment for transport and disposal of any petroleum-contaminated material and hazardous waste encountered, and approved by the Engineer, shall be reimbursed at negotiated unit rates, exclusive of quantities already provided for elsewhere in the documents that shall be included in the base bid.
3. Payment for the transportation and disposal of petroleum-contaminated material and hazardous waste encountered not part of the base bid shall be contingent upon the Engineer's receipt of original shipping documents (e.g., manifests), weigh tickets, and original invoices. No additional payment will be made for excavating/removing and loading and other requirements of this Section for these materials because it is covered under the base bid.
4. The Contractor shall credit the Engineer for any quantities of excavated material that the Engineer approves for reuse on-site.

3.07 FILLING AND GRADING

A. General

1. Do not commence filling and backfilling operations until proposed fill and backfill have been approved by the IEH Division (in addition to gradation approvals), construction below finish grade has been approved, underground utilities and mechanical items inspected and tested, forms removed,

waterproofing/membranes/coatings and other improvements installed, trash and debris removed, and temporary and permanent bracing installed.

2. Do not commence backfilling, filling and grading until existing subgrades have been compacted.
3. Backfilling of trenches is described under "Backfilling of Trenches".
4. Fill all excavations, backfill against all walls, and do all filling and grading necessary to bring the surfaces to the level required.
5. Do not backfill against concrete elements until the concrete has obtained its specified compressive strength.
6. Take particular care when rolling over areas where trenches or other excavations have been made and backfilled.
7. Fill voids caused by the removal of below grade improvements.
8. Grade bottoms of pavements toward sediment pits or catch basins to maintain uniform thickness of the slabs.
9. A minimum of 24" of environmentally clean fill (as defined in Paragraph 1.04F) that has been tested utilizing laboratory reporting limits which are acceptable to the Engineer (i.e., below the regulatory comparison criteria) shall be used on all exposed ground surfaces, including landscaped areas (grass, sod, groundcover, shrub areas, tree areas, including tree pits, etc.). Provide environmentally clean fill to bring soil to depth below the required amount of top soil required for each type of planting as described in Section 02900.

B. Compaction of existing subgrade

1. Surface Preparation: Existing subgrade shall be free from stumps, bushes, roots, sod, topsoil, rubbish, garbage, and any other material that may decay.
2. Grading
 - a. Prior to placing fill or backfill in any area, grading is to be performed as required to provide for drainage. Ditching or filling around the area shall be performed to intercept or divert all surface water.

- b. On completion of grading as specified above, closely examine to determine whether excessive wetness, springs, or other seepage of water can be observed at any point. If such conditions exist, positive drainage in suitable form, such as french drains or tilling, must be provided before placement of fill is undertaken.
- c. When the fill area has been prepared as specified above, compact the natural ground surface by methods indicated in 3 below.

3. Method of Compaction

- a. Natural undisturbed material shall be graded and compacted to attain a uniform surface. These areas shall be determined by the Special Inspector.
- b. Existing subgrade shall be proofrolled in the presence of the Special Inspector for the following conditions:
 - 1) Subgrade consists of uncontrolled fills.
 - 2) Identification of shallow loose zones of material or identification of soft/spongy material at surface.
- c. Proofrolling shall be accomplished with a minimum of four passes using a compactor of minimum static weight of 19,000 lbs, a minimum dynamic force of 40,000 lbs, and a total applied force of not less than 7,500 per foot of drum width. In areas inaccessible to the heavy equipment, provide a minimum of six passes with a vibratory plate or jumping compactor. Fill shall not be placed until the subgrade is approved by the Special Inspector.

4. Soft Areas During Compaction: If any areas show pumping, noticeable weaving, or which are otherwise unsatisfactory, undercut material within the limits and extent ordered by the Special Inspector. These areas shall be replaced with controlled fill, compacted to 92% of maximum dry density by ASTM D1557 at optimum moisture content (95% for vehicular areas), unless otherwise directed by the Engineer of Record.

C. Placement and Compaction of Fill and Backfill

1. Placement

- a. General: Begin fill and backfilling in the lowest section of the area. Spread material evenly by mechanical equipment or by manual means above the approved compacted subgrade in lifts not exceeding 6" to 8". Build layers as horizontally as practical to prevent thickness of lift from exceeding that specified but provide with sufficient longitudinal and transverse slope to provide for runoff of surface water from every point.
 - b. Moisture Control: The moisture-density curve for the fill use shall be supplied to the Contractor as a guide in controlling moisture to achieve the required degree of compaction. If, in the opinion of the Special Inspector, fill material becomes too wet for the required compaction, the fill shall be dried by a method approved by the Special Inspector prior to commencing or continuing compaction operations. Likewise, if, in the opinion of the Special Inspector, the fill material becomes too dry for the required compaction, the fill shall be moistened by a method approved by the Special Inspector prior to commencing or continuing compaction operations.
2. Compaction: Compact each lift to the degree of compaction indicated below. The degree of compaction shall be checked by the Special Inspector and each successive lift shall not be placed or compacted until the previous lift is inspected and approved by the Special Inspector. Compact the fill and backfill to elevations and limits shown on Drawings and is subject to final inspection and approval by the Special Inspector. Extend the compacted fill beyond the berm lines on a slope downward at a maximum slope of two horizontal to one vertical to intersect the approved stripped subgrade. Maintain the fill slopes at all times.
 - a. Areas to receive heavy vehicular traffic or footings: 95% of the maximum dry laboratory density by D1557 at optimum moisture content.
 - b. All other areas: 92% of the maximum dry laboratory density by D1557.
3. Drainage During Fill Operation: At all times, maintain and operate proper and adequate surface and subsurface drainage to the satisfaction of the Special Inspector in order to keep the construction site dry and in such condition that

placement and compaction of fill may proceed unhindered by saturation of the area. Submit method of dewatering to the Engineer for prior approval. Such approval shall not relieve the Contractor of his responsibility to maintain the site dry during the compaction operation. See Article 3.02.

4. Frost: Do not place fill materials when either the fill materials or the previous lift (or subgrade) on which it is placed is frozen. In the event that any fill which has already been placed on the surface shall become frozen, it shall be scarified and recompact, or removed, to the approval of the Special Inspector before the next lift is placed. Remove or recompact any soft spots resulting from frost to the satisfaction of the Special Inspector before new fill is placed.

D. Placement and Compaction of Aggregate Bases and Crushed Stone

1. Provide aggregate base under all exterior pavements and wherever else indicated on the Drawings or specified herein. Provide crushed stone under all interior slabs. Provide 6" minimum unless specified otherwise elsewhere.
2. Verify finished subgrade is at proper level.
3. Prior to placement of material, reroll subgrade with a two-ton roller or hand tamper.
4. Place aggregate base and crushed stone in layers of uniform thickness, but not exceeding 6". Compact material to either 80% of relative density or 92% (95% for heavy vehicular traffic) of maximum dry density at optimum moisture in accordance with ASTM D1557. Maintain optimum moisture content for compacting the material. Place material in single layer for aggregate courses 6" or less. Alternate blading and rolling to obtain a smooth, even, and uniformly compacted course.

3.08 BACKFILLING OF TRENCHES

- A. Do not backfill trenches until tests and inspections have been made and the backfilling authorized by the Engineer. Use care to avoid damage or displacement of pipe or conduit.
- B. Backfill with controlled fill and compact each layer to 92% (95% for vehicular areas) of its maximum density as per ASTM D1557 using a vibratory plates, jumping compactors, or other approved means.

3.09 FIELD QUALITY CONTROL**A. Tests**

1. Sieve Analysis: The Engineer 's Laboratory will perform sieve analysis in accordance with ASTM D422 on fill and aggregate materials at the site prior to placement in order to verify conformance with the submitted samples. The laboratory will take one sample at a minimum for every 100 CY placed (or portion thereof) each day. If material appears to vary from approved material, more frequent testing will be done and if results indicate material varies from that approved, costs of such testing will be paid by the Contractor.
2. Field density tests: The Engineer 's Laboratory will perform in-place field density tests in accordance with either of the three following procedures; ASTM D1556, ASTM D2167, or ASTM D2922.
 - a. Existing subgrade. One field density test for each 2000 ft², but in no case less than three tests.
 - b. Fill areas - For each lift, one field density test for each 2000 ft², but in no case less than three tests.
 - c. Backfill areas - For each area, two field density tests per lift at locations determined by Special Inspector and one test per lift for every 50 linear feet of trench.
3. Environmentally Clean Fill/Backfill Tests
 - a. The Engineer, as a quality assurance measure, may perform applicable analysis of fill/backfill material samples to verify that the material meets the environmentally clean fill requirements.
 - b. The Contractor shall notify the IEH Division of the Engineer a minimum of two business days prior to collection for environmental testing of each sample of environmentally clean fill, and, if requested by the Engineer, shall arrange for a representative of the IEH Division to observe collection of each sample.
 - c. The Engineer will require that the Contractor provide the certifications required by this specification at the time of delivery of each and every load of environmentally clean fill showing that the load was shipped to the site

directly from the approved source of environmentally clean fill.

- d. The Contractor shall be required when requested by the Engineer to arrange for access for a representative of the Engineer to observe the loading of trucks at the source of environmentally clean fill.

B. Inspection

1. Fill and Backfill Compaction: The Special Inspector will give approval for each lift in accordance with Sections BC 1704.7.2 and BC 1704.7.3. In the event that the compaction requirements are not satisfied, the lift shall be rerolled or removed and again tested until the required compaction is obtained.
2. Footing Subgrade: The Special Inspector is responsible for approval of bearing capacity for all footings in accordance with Section BC 1704.7.1.
3. Excavation - Sheet piling, Shoring, and Bracing: The Special Inspector is responsible for inspection of underpinning in accordance with Sections BC 1704.20.2 and BC 3304.4.1. Contractor's licensed professional engineer is to file all design documents as specified in Article 3.02 of this Section.
4. Contractor's Responsibility: The Contractor shall notify the Engineer at least 48 hours prior to filling operations, pouring of footings, and installation of excavation support to allow for the Engineer to have the appropriate personnel at the site.
5. Contractor's Inspections: Inspections and testing performed by the Engineer shall not relieve the Contractor of responsibility for performing all other testing and inspection specified herein or otherwise necessary to meet the quality control and quality assurance requirements of this Section.

C. Responsibility

1. All required testing and/or analysis not specifically defined as being provided by the Engineer shall be provided by the Contractor as part of the included Work and costs of this Project.
2. No testing and/or analysis by the Engineer shall relieve the Contractor of the responsibility of

conforming to the requirements of these specifications.

3. Time for conducting the tests and/or inspections defined in these specifications shall be considered as part of the Work of this Project and neither extension of time nor additional costs shall be accepted as a result.

3.10 PROTECTION

- A. Protect graded and compacted areas from traffic and erosion. Keep free of trash and debris.
- B. When completed compacted areas are disturbed by subsequent construction or weather, scarify surface, re-shape, and compact to required density prior to further construction.
- C. Where settling is measurable or observable at excavated areas during general project warranty period, remove surface (pavement, lawn or other finish), add backfill material, compact, and replace surface treatment. Restore appearance, quality, and condition of surface or finish to match adjacent work, and eliminate evidence of restoration to greatest extent possible.
- D. A guardrail or solid enclosure at least 3'-6" high shall be provided along the open sides of excavations, except if the side slopes are one vertical to three horizontal or flatter.

END OF SECTION

LIST OF SUBMITTALS

<u>SUBMITTAL</u>	<u>DATE SUBMITTED</u>	<u>DATE APPROVED</u>
Product Data:	_____	_____
1. Compaction equipment		
Shop Drawings:	_____	_____
1. Sheeting/Shoring/Bracing		
Samples:	_____	_____
1. Fill and backfill		
2. Aggregate base		
3. Crushed stone		
Design Data:	_____	_____
1. Fill and backfill		
2. Aggregate base		
3. Crushed stone		
4. Recycled concrete material composition		
Existing Condition Survey:	_____	_____
1. Project photographs		
2. Survey logs and bench marks		
3. Monitoring Plan		
Certificates:	_____	_____
1. Fill and backfill		
2. Aggregate base		
3. Crushed Stone		
4. Recycled concrete material composition		
5. Facility permits		
6. Environmentally clean fill Certificate for borrow site		
7. Environmentally clean fill Certificate for each load		
Qualifications:	_____	_____
1. Contractor		
2. Professional Engineer		
Testing:	_____	_____
1. Excavated material classification for disposal		
2. Existing material to remain environmentally clean		

08/21/2020

NEUBERGER MUSEUM SOUTH COURTYARD

3. Environmentally clean fill
and backfill

Documentation of Proper Disposal_____

Excavated Material Disposal
Plan:

1. Non-Hazardous Excavated
Material_____
2. Petroleum-contaminated
material (if required)
3. Hazardous waste (if required)

* * *

Template

Excavated Materials Disposal Plan (EMDP) for Larger Earthwork Projects
(Insert Site Name and Address)
(Date)

General notes regarding this template:

1. The EMDP **must** be signed by a Certified Hazardous Materials Manager approved by the Institute of Hazardous Materials Management in Rockville, Maryland, or Qualified Environmental Professional, approved by the Institute of Professional Environmental Practice, Pittsburgh, Pennsylvania, or similar board-certified profession.
2. Directions to EMDP preparers are provided within this template as ***bold and italicized*** text. In general, bold ***and italicized*** text indicates where information unique to the Site is to be inserted by the writer.

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F. Signature of Certified Preparer	

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Appendix B – Waste Transporter Permits

Appendix C – Disposal Facility Permits and Supporting Documentation (including a copy of the NYSDEC Part 360 Permit or equivalent out of state regulatory agency permit)

Introduction

This Excavated Materials Disposal Plan (EMDP) describes the procedures to be followed for the characterization, excavation, management, transportation and disposal of material excavated at _____ (*insert Site name and location*) in accordance with SCA Specification Section 02201, (*insert Design # and date*). This work will be performed by _____ (*insert name of excavation contractor*) under contract with _____ (*insert name of general contractor, if applicable*).

Project activities associated with this EMDP include the characterization, excavation, management, transportation, and disposal of approximately _____ (*insert amount*) cubic yards of non-hazardous excavated material (*change to appropriate category if the EMDP is being prepared for non-hazardous industrial waste, petroleum contaminated material, and/or hazardous waste*) for the construction of the _____ (*insert project type – new school, addition, flood elimination project, etc.*).

All material excavated from the Site is assumed to meet the definition of non-hazardous excavated material (*change to appropriate category if the EMDP is being prepared for non-hazardous industrial waste, petroleum contaminated material and/or hazardous waste*). According to Specification Section 02201, Section 1.0, the following definitions apply to this project: (*conform below with the project specifications*)

Non-Hazardous Excavated Material

Material that may include or contain mixtures of the following: soil (including, but not limited to, natural undisturbed material), debris, concrete and concrete products (including steel or fiberglass reinforcing rods that are embedded in the concrete), asphalt pavement, brick, glass, rock, municipal solid waste, refuse, and incidental ash. This material includes material defined in Title 6 New York Code of Rules and Regulations 360-7.1(b)(1)(i) and will exceed 6 NYCRR 375-6 Unrestricted Use and Restricted Use Soil Cleanup Objectives and NYSDEC CP-51: Soil Cleanup Guidance Supplemental Soil Cleanup Objectives.

All material excavated from the site is assumed to meet the definition of non-hazardous excavated material.

Petroleum-Contaminated Material

Material (soil, concrete, sediment, UST contents, fill, debris, etc.) that meets the NYSDEC STARS Memo #1 definition of petroleum-contaminated material from known source areas. Petroleum-contaminated material shall be evidenced by the following observations **and** be from a known source area: producing higher than background responses on a portable vapor meter such as a photo ionization detector or flame ionization detector, petroleum-like odor, visual impacts (e.g., staining or discoloration), proximity to known releases from existing or historic petroleum storage tanks or systems, and exceed the soil cleanup levels for gasoline and/or fuel oil contaminated soil provided in the NYSDEC CP-51: Soil Cleanup Guidance. The determination as to whether the excavated material is petroleum-contaminated or is non-petroleum contaminated material will be made by analytical testing of representative material samples. All sampling shall be performed under the supervision of the Engineer's IEH Division or its representative. The Contractor shall provide the IEH Division with qualitative and quantitative information, and the IEH Division shall make the final determination as to whether or not the material is petroleum-contaminated and the appropriate disposal.

Hazardous Waste

Material meeting the definition of a Resource Conservation and Recovery Act hazardous waste as defined in 40 CFR Part 261, New York State ECL Section 27-09 or 6 NYCRR Part 371.

Environmentally Clean Fill and Backfill

Refer to Section 02201 for definition and requirements associated with fill and backfill.

A. PRE-EXCAVATION UTILITY SURVEYS

- 1. Describe how buried utilities (e.g. electric, gas, water, sewers, telephone, etc.) will be located and marked out.*
- 2. Describe how utility mark-out information will be provided to the Engineer.*
- 3. Confirm appropriate contact will be made with underground facilities protective organizations in accordance with applicable laws and regulations.*

B. WASTE CHARACTERIZATION SAMPLING

Waste characterization samples will be collected and analyzed in accordance with the proposed disposal facility(ies) requirements, outlined in Section D.

(Describe the type of soil sampling – i.e., will the sampling be performed in-situ [with a Geoprobe] or will samples be collected from excavated stockpiles.)

Describe the soil sampling frequency and analyte list. For example, use text such as...

A total of ____(*insert number*) soil samples will be collected for analysis. This number of soil samples equates to one sample for every 500 cubic yards (*change as required based on disposal facility requirements*) of excavated material. Each sample will be analyzed for the following parameters:

- Volatile organic compounds (VOCs) by USEPA Method 8260
- Semi-volatile organic compounds (SVOCs) by USEPA Method 8270
- Polychlorinated biphenyls (PCBs) by USEPA Method 8082
- Pesticides via USEPA Method 8081
- Herbicides via USEPA Method 8151
- RCRA Metals via USEPA Method 6010
- Mercury via USEPA Method 7471

In addition, a total of ____(*insert number*) samples, one soil sample for every 5,000 cubic yards (*change as required based on disposal facility requirements*), will be collected and analyzed for the following parameters:

- RCRA Characteristics
- Full TCLP

Introduce and provide a to-scale site plan (Figure 1). Figure 1 shall show the site, an outline of the proposed new construction, proposed excavation areas, and quantities of excavated materials.

Introduce and provide a to-scale sampling plan (Figure 2). Figure 2 shall show the Site, the locations on the Site where soil samples shall be collected, and which discrete soil samples shall make up composite sample(s), as applicable. Note that the Figure should show sampling grids with estimated average depths of excavation in each grid.

Discrete grab samples will be collected for VOCs. A five-point (*change as required based on disposal facility requirements*) composite sample will be collected for all other analytes listed above. Samples will be analyzed by _____ (*insert name and address of laboratory*), a New York State Department of Health Environmental Laboratory Approval Program (ELAP) -certified laboratory.

After sample collection, the soil samples will be shipped to the NYSDOH ELAP certified

laboratory in chilled coolers, and accompanied by appropriate chain of custody records. Analytical results will be provided to the proposed disposal facilities for their review and approval. In addition, the results will be submitted to the Engineer. A letter on _____(*insert excavation contractor name*) letterhead will be provided to the Engineer that states that all available analytical data has been provided to the disposal facility. The disposal facility(ies) will provide an original signed letter indicating that the soil meets the acceptance criteria for their facility(ies) and the excavated material is accepted for disposal. This letter will be forwarded to the Engineer upon receipt.

C. MANAGEMENT OF EXCAVATED SOIL

(Describe the procedures for excavation work – for instance, number and types of excavators? Is there any hand excavation work anticipated?)

On-site personnel involved in excavation activities shall comply with applicable Occupational Safety and Health Administration (OSHA) rules and regulations, New York City Department of Buildings (NYCDOB) requirements, and the Health and Safety Plan (HASP) presented as Appendix A to this EMDP.

Excavated soil, if not directly loaded into trucks for transportation and disposal, will be stockpiled on-site. Stockpiles will be placed on and covered with heavy duty tarps secured by sand bags.

Dust suppression will be performed during work activities where the potential for elevated dust conditions exists. Water will be used to spray/mist excavation areas in these instances. There will be no visible dust emissions from the work areas. Other dust suppression techniques which may be utilized include speed limits for trucks in unpaved areas, maintenance of Site paving as long as practical, and minimization of excavation activities during periods of high winds. *(Note – if a community air monitoring program [CAMP] is required by the specifications, briefly describe the CAMP requirements and implementation.)*

D. DISPOSAL FACILITIES AND WASTE HAULERS

Excavated material transportation will be performed by licensed transporters with valid NYSDEC 6 NYCRR 364 Waste Transporter Permits. All proposed disposal facilities shall be listed on the waste transporter permits. Loaded vehicles leaving the Site will be appropriately cleaned, lined, and covered in accordance with applicable laws and regulations. The proposed licensed transporters with valid 6 NYCRR 364 Permits for this project are as follows:

- *Transporter 1 Name and Address*
NYSDEC Part 364 Waste Transporter Permit # and Date of Expiration –
Disposal Facilities permitted for transport to -
- *Transporter 2 Name and Address*
NYSDEC Part 364 Waste Transporter Permit # and Date of Expiration –
Disposal Facilities permitted for transport to -
- *Transporter 3 Name and Address*
NYSDEC Part 364 Waste Transporter Permit # and Date of Expiration –
Disposal Facilities permitted for transport to -
- *Add additional haulers as necessary*

Please refer to Appendix B for copies of the waste transporter permits.

Non-hazardous excavated material shall be transported to an off-site disposal facility meeting the requirements of 6 NYCRR Part 360 or equivalent out-of-state facility approved by the appropriate regulatory agency of that State with a permit to receive non-hazardous excavated material. (*Note - change to appropriate category if the EMDP is being prepared for non hazardous industrial waste, hazardous waste and/or petroleum contaminated material*).

The proposed disposal facilities meeting the criteria described above for this project are as follows:

- *Disposal Facility 1 Name and Name of Owner*
Address and Phone Number -
Type of Permit (i.e., Part 360?, NJDEP?, etc.)
- *Disposal Facility 2 Name and Name of Owner*
Address and Phone Number -
Type of Permit (i.e., Part 360?, NJDEP?, etc.)
- *Disposal Facility 3 Name and Name of Owner*
Address and Phone Number -
Type of Permit (i.e., Part 360?, NJDEP?, etc.)
- *Add additional disposal facilities as necessary*

Please refer to Appendix C for copies of the disposal facility permits and soil testing requirements, and acceptance criteria for each proposed disposal facility.

Waste characterization data will be provided to the proposed disposal facilities for their review and approval. An original signed approval letter from each disposal facility will be submitted to

the Engineer at least 48 hours prior to transportation and off-site disposal.

If the excavated material is rejected by the above proposed disposal facilities for any reason, an alternate disposal facility (including required documentation) meeting the requirements of the Specification Section 02201 will be proposed for Engineer's consideration.

E. QUALITY ASSURANCE/ QUALITY CONTROL

A qualified person will coordinate and manage the sampling and analysis program, management, transportation, and disposal of excavated materials from the Site. _____ (*insert name of the qualified person and the excavation firm responsible for these activities*) will direct these activities.

Laboratories used will be NYSDOH ELAP certified laboratories. The laboratories will communicate directly with the samplers regarding the analytical results and reporting and will be responsible for providing all labels, sample containers, trip blanks, shipping coolers, and laboratory documentation.

Periodic quality assurance/quality control (QA/QC) audits of the EMDP will be performed by the Contractor, and may also be performed by the Engineer, or the Engineer's auditors. Any items noted to be in non-compliance will be documented and audit findings will be presented to _____ (*insert name of excavation firm*) for resolution (with a copy to the Engineer). Verification of resolution(s) will be determined through re-inspecting or re-auditing the non-compliant item.

All records regarding the removal and disposal of excavated materials shall be maintained by _____ (*insert name of excavation firm*) at the project site. These records will be made available to the Engineer or their designated representatives at their request. Shipping manifests and/or bills of ladings for excavated material will be provided to the Engineer on a daily basis.

F. SIGNATURE OF CERTIFIED PREPARER

_____ (*insert name, certification*) has prepared this EMDP for the
_____ (*insert site name, address, and type of work being
performed*) in accordance with the requirements of Specification Section 02201. Additionally,
_____ (*insert name*) hereby certifies that (*he/she*) is a currently
licensed/certified _____ (*insert correct certification - Certified
Hazardous Materials Manager approved by the Institute of Hazardous Materials Management in
Rockville, Maryland, or Qualified Environmental Professional, approved by the Institute of
Professional Environmental Practice, Pittsburgh, Pennsylvania, or similar board-certified
profession*).

PREPARED BY: _____

Name

Certification and Certification Number

FIGURES

APPENDIX A
HEALTH AND SAFETY PLAN

APPENDIX B
WASTE TRANSPORTER PERMITS

APPENDIX C

DISPOSAL FACILITY PERMITS AND SUPPORTING DOCUMENTATION

(including a copy of the NYSDEC Part 360 Permit or equivalent out of state regulatory agency permit)

Template 2

Excavated Materials Disposal Plan (EMDP) for Smaller Earthwork Projects
(Insert School/Site Name and Address)
(Date)

General notes regarding this template:

1. This template should be used if the net cut is expected to be 100 cubic yards or less.
2. Directions to EMDP preparers are provided within this template as ***bold and italicized*** text. In general, bold ***and italicized*** text indicates where information unique to the Site is to be inserted by the writer

Introduction

This Excavated Materials Disposal Plan (EMDP) describes the procedures to be followed for the characterization, excavation, management, transportation and disposal of material excavated at _____ (*insert Site name and location*) in accordance with Specification Section 02201, (*insert Design # and date*). This work will be performed by _____ (*insert name of excavation contractor*) under contract with _____ (*insert name of general contractor, if applicable*).

Project activities associated with this EMDP include the characterization, excavation, management, transportation, and disposal of approximately _____ (*insert amount*) cubic yards of non-hazardous excavated material for the construction of the _____ (*insert project type – new school, addition, flood elimination project, etc.*).

All material excavated from the Site is assumed to meet the definition of non-hazardous excavated material. According to Specification Section 02201, Section 1.0, the following definition applies to this project: (*conform below with the project specifications*)

Non-Hazardous Excavated Material

Material that may include or contain mixtures of the following: soil (including, but not limited to, natural undisturbed material), debris, concrete and concrete products (including steel or fiberglass reinforcing rods that are embedded in the concrete), asphalt pavement, brick, glass, rock, municipal solid waste, refuse, and incidental ash. This material includes material defined in Title 6 New York Code of Rules and Regulations 360-7.1(b)(1)(i) and will exceed 6 NYCRR 375-6 Unrestricted Use and Restricted Use Soil Cleanup Objectives and NYSDEC CP-51: Soil Cleanup Guidance Supplemental Soil Cleanup Objectives.

Excavation Procedures

Prior to excavation a pre-excavation utility survey will be performed. *Describe how buried utilities (e.g. electric, gas, water, sewers, telephone, etc.) will be located and marked out.*

On-site personnel involved in excavation activities shall comply with applicable Occupational Safety and Health Administration (OSHA) rules and regulations, and New York City Department of Buildings (NYCDOB) requirements.

Excavated soil, if not directly loaded into trucks for transportation and disposal, will be stockpiled on-site. Stockpiles will be placed on and covered with heavy duty tarps secured by sand bags.

Dust suppression will be performed during work activities where the potential for elevated dust conditions exists. Water will be used to spray/mist excavation areas in these instances. There will be no visible dust emissions from the work areas. Other dust suppression techniques which may be utilized include speed limits for trucks in unpaved areas, maintenance of Site paving as long as practical, and minimization of excavation activities during periods of high winds.

Proposed Waste Transporters and Disposal Facilities

Excavated material transportation will be performed by licensed transporters with valid

NYSDEC 6 NYCRR 364 Waste Transporter Permits. All proposed disposal facilities shall be listed on the waste transporter permits. Loaded vehicles leaving the Site will be appropriately cleaned, lined, and covered in accordance with applicable laws and regulations. The proposed licensed transporters with valid 6 NYCRR 364 Permits for this project are as follows:

- ***Transporter 1 Name and Address***
NYSDEC Part 364 Waste Transporter Permit # and Date of Expiration –
Disposal Facilities permitted for transport to -
- ***Transporter 2 Name and Address***
NYSDEC Part 364 Waste Transporter Permit # and Date of Expiration –
Disposal Facilities permitted for transport to -
- ***Add additional haulers as necessary***

Non-hazardous excavated material shall be transported to an off-site disposal facility meeting the requirements of 6 NYCRR Part 360 or equivalent out-of-state facility approved by the appropriate regulatory agency of that State with a permit to receive non-hazardous excavated material.

The proposed disposal facilities meeting the criteria described above for this project are as follows:

- ***Disposal Facility 1 Name and Name of Owner***
Address and Phone Number -
Type of Permit (i.e., Part 360?, NJDEP?, etc.)
- ***Disposal Facility 2 Name and Name of Owner***
Address and Phone Number -
Type of Permit (i.e., Part 360?, NJDEP?, etc.)
- ***Add additional disposal facilities as necessary***

Waste characterization samples will be collected and analyzed in accordance with the proposed disposal facility(ies) requirements. Waste characterization data will be provided to the proposed disposal facilities for their review and approval. An original signed approval letter from each disposal facility will be submitted to the Engineer at least 48 hours prior to transportation and off-site disposal.

If the excavated material is rejected by the above proposed disposal facilities for any reason, an alternate disposal facility (including required documentation) meeting the requirements of the Specification Section 02201 will be proposed for Engineer's consideration.

Please refer to Appendix A for copies of the waste transporter permits, disposal facility permits and soil testing requirements, and acceptance criteria for each proposed disposal facility.

APPENDIX A

**WASTE TRANSPORTER AND DISPOSAL FACILITY PERMITS AND
SUPPORTING DOCUMENTATION**

SECTION 02515
UNIT CONCRETE PAVERS

PART 1 - GENERAL**1.01 DESCRIPTION OF WORK**

A. Provide all unit paver Work as indicated on the Drawings and as specified herein, including, but not limited to the following:

1. Concrete paving systems set on grout.
2. Provide all sealant systems at vertical/horizontal intersections of unit pavers with other construction, including penetrations of the paving surface by work of other trades.

1.02 RELATED SECTIONS

A. Grouting..... Section 03610

1.02 REFERENCES

A. References and industry standards listed in this Section are applicable to the Work. Unless more restrictive criteria or differing requirements are explicitly stated in the Specifications, or mandated by governing codes or regulations, the recommendations, suggestions, and requirements described in the referenced standards shall be deemed mandatory and applicable to the Work.

B. American Society for Testing and Materials (ASTM)

1. ASTM C902...Standard Specification for Pedestrian and Light Traffic Paving Brick
2. D946...Standard Specification for Penetration-Graded Asphalt Cement for Pavement Construction
3. ASTM C136...Standard Test Method for sieve Analysis of Fine and Course Aggregates

1.03 SUBMITTALS

A. Provide sufficient number of full size samples of unit pavers units, matching to existing, to be used on the project, in the same proportion that they will be furnished for the project.

B. Skid resistance test report showing compliance with ASTM C902 for paving brick.

- C. Manufacturers' product data for all pavers, sealants, backer rods, grout mixes and cleaning systems, indicating compliance with specified requirements.
- D. 12" long cured sample of grout for color approval.
- E. Paver unit manufacturer's approval of asphalt adhesive.

1.04 QUALITY ASSURANCE

- A. Requirements given herein may be affected by other related requirements of the Project Specifications. Coordination of Contract requirements is the responsibility of the Contractor.
- B. Manufacturer's Experience: Minimum 5 years successful experience in the manufacture of type products specified.
- C. Installer's experience: Minimum 3 years successful experience in installing type of product specified.
- D. Work shall conform with the regulatory requirements for street pavers as promulgated by the New York City Department of Transportation, Bureau of Highway Operations.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Paver units shall be shipped and stored in suitable cartons or pallets so as to prevent chipping or breaking.
- B. Remove units from containers only when ready to be set.
- C. Each container shall bear the quality label and the name or trademark of the approved manufacturer.
- D. Paver units shall be free of chipped edges, spalls and marks other than those characteristic of the unit selected. Damaged paver units shall be culled and removed from the site.

PART 2 - PRODUCTS

2.01 PAVER UNITS

- A. Pavers shall be matching to existing in shape and size, and meeting the requirements of ASTM C902, Grade SX, Type 1. Size and Color shall be approved by Project Architect.

2.02 BITUMINOUS SETTING BED

- A. The setting bed shall consist of 7% hot asphalt, Ref. ASTM D946, with a penetration at 77° F, 100G. 5 sec. of minimum 85 millimeters and maximum of 100 mm.
- B. Asphalt shall be mixed with clean, hard 1/8" (3.18 mm) grit with durable particles, free from alkali salts and organic matter.
- C. Grit shall be uniformly graded from "coarse" to "fine" and all passing #4 sieve. Ref. test ASTM C136.
- D. Mix bituminous setting-bed materials at an asphalt plant in approximate proportion, by weight, of 7 percent asphalt cement to 93 percent aggregate, unless otherwise indicated. Heat mixture to 300 deg F.

2.03 NEOPRENE-MODIFIED ASPHALT ADHESIVE

- A. Material shall be an asphalt adhesive composed of 75(+/-) 1% solids base with a "Varsol" solvent mixed in. Base composed of 2% neoprene, 10% fibers and 88% asphalt.
- B. Material shall be approved by the manufacturer of the paver unit used in the work of this Section.

2.04 JOINT SYSTEMS

- A. Jointing systems for "hand-tight" paving systems shall be composed of a dry mix of one (1) part of premixed cement to three (3) parts of bagged 30-60 mesh silica in color as selected by the Project Architect.

2.05 EXPANSION JOINTS AND SEALANTS

- A. Expansion joints - premolded non-extruded resilient material.
- B. Sealant - polyurethane base sealant, TYPE IA, for Horizontal and Vertical joints, as applicable, as specified in Section 07900.

2.06 MISCELLANEOUS

- A. Cleaner system for removal of grout film, haze or mortar stains shall be a standard product of a recognized manufacturer such as ProSoCo.

Test patches shall be prepared so as to determine application strength and time.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Examine all work prepared by others to receive work of this Section. Commencement of work will be construed as complete acceptance of preparatory work by others.

3.02 INSTALLATION - BITUMINOUS BED

- A. Lay pavers, in pattern shown on the Drawings, in a bituminous setting bed on the prepared subbase construction.
- B. Place depth control bars 3/4" deep directly over base. If grades must be adjusted, set wood chocks under bars to proper grade. Place setting material between bars and screed and fill until smooth firm surface is obtained. Fill depressions after removal of depth control bars.
- C. Roll setting bed with a power roller while still hot to a nominal depth of 3/4" thickness. Adjust thickness as required to ensure proper line and grade of finished installation.
- D. Apply coating of adhesive over surface by mopping, squeegeeing or troweling over entire top surface to provide a bond for pavers, maximum 1/16" thickness.
- E. Set pavers, level and true to elevations indicated. Install 3/8" expansion joints as shown, not exceeding 20'0" intervals and at perimeters and vertical inter-sections. Seal all expansion joints.

3.03 GROUT AND CLEAN

- A. Grout all joints as applicable. Fog lightly with water. DO NOT PERMIT mortar to set up on finished surface; sweep off with clean dry sand. Remove any remaining cement stains with a suitable solvent but in no case acid-bearing.
- B. Protect newly laid pavers with plywood panels; advance panels as work progresses. Maintain protection in good order in all areas subjected to traffic.
- C. Clean off all surrounding surfaces and leave area in neat, clean condition. Sealants from expansion joints shall be removed by mechanical means.

END OF SECTION

* * *

LIST OF SUBMITTALS

<u>SUBMITTAL</u>	<u>DATE SUBMITTED</u>	<u>DATE APPROVED</u>
Samples:	_____	
1. Full size pavers		
2. Grout		
Test Report:	_____	
1. Skid resistance		
Manufacturers' product data:	_____	
Paver unit manufacturer's approval of asphalt adhesive:	_____	

* * *

SECTION 02723
STORM DRAINAGE SYSTEM

PART 1 - GENERAL

1. GENERAL PROVISIONS FOR PLUMBING AND DRAINAGE WORK

1.01 SCOPE AND INTERPRETATION

- A. These Specifications and accompanying Drawings provide for the furnishing, setting, connection and installation of storm water drainage and element the previous drain system existed.
- B. The specifications and Drawings require the Contractor to provide all labor, materials, equipment and appliances to perform of all Work pertaining or incidental thereto, which is needed to complete the Work shown on the Drawings and called for in the Specifications.
- C. The complete systems and the Work shall be so installed as to give proper and continuous service under all conditions, and shall be in accordance with the requirements of all public authorities and to the complete satisfaction of the Authority. Any Work shown on the Drawings and not particularly described in the specifications, or vice versa or any Work which may be deemed necessary to complete the Contract shall be provided by the Contractor as part of its Contract.
- D. For purposes of clearness and legibility, plumbing Drawings are essentially diagrammatic and size and location of equipment are drawn to scale wherever possible. The Drawings indicate size, connection points and routes of pipe. It is not intended, however, that all offsets, rises and drops are shown. Provide piping as required to fit structure, avoid obstruction, and retain clearances, headroom openings and passageways. Piping installed over any means of egress and access passageways must be 7'-6" clear inclusive of insulation. Also, the installation should comply with the following requirement:
 - 1. Location of items passing through roofing/waterproofing membranes shall be in strict accordance with recommendations of the NRCA (National Roof Contractors Association) Manual to allow for proper flashing of items, including, but not limited to, the following:
 - a. No penetrations shall be made within 12" of any walls, parapets, roof curbs, expansion

joints or any other projections (clear distance between penetration or equipment curb face shall be 12" minimum). Clearances for certain items (such as drains) may be specified elsewhere in the specifications and are to be followed, as the 12" indicated above is a minimum for items not specifically indicated.

- b. Provide manufactured curb chases where multiple small pipes enter at one location.
 - c. Piping/equipment supports that penetrate membranes shall be round or square/rectangular to allow proper flashing. Use of "kindorf" type supports is not permitted to penetrate membranes.
2. Piping at equipment must be done in a manner such that access around equipment is not impeded, such as at equipment platforms.
- E. Fixtures shown and described on the Drawings shall be connected with waste, vent and water supply piping in accordance with the requirements of New-York City Building Code, despite the omission of indication of such piping on the plans. Any question involving the installation of such piping shall be referred to the Authority or the designer for resolution.
- F. Fixtures, piping and other plumbing items which are shown and described on the Drawings shall be provided by the Contractor. Related Work necessary for the proper installation shall be performed by the Contractor.
- G. Scope of Work: The plumbing and drainage work of this contract shall include but shall not be limited to the following systems, equipment and services:
- 1. Complete piping system including curb valve, box from connection to town mains and ending within building with a service header valve, check valves, connection to fire service, water service meter assembly and an approved backflow preventer device.
 - 2. Sanitary Drainage/Vent piping: Complete piping system; soil, waste, drain and vent piping, building house drain and building house sewer including sewage ejector, sump pumps, floor drains, from all fixtures and equipment to connection into public sewer, and vent extensions through roofs. Vent piping shall include

required roof openings, pipe sleeves and flashing.

3. Storm Water Drainage Piping: Complete piping system including roof drains, area drains, catch basins, piping and connection to detention basins and from detention basins to public sewer.
4. Piping, Equipment Supports, and seismic restraints: To comprise all restraints, hangers, pipe guides, rods, beam clamps, brackets, pipe anchors, other attachments, floor flanges, masonry anchors, bolts, nuts, washers, and other items as required to fully support all piping, gas venting, and equipment installed under this contract inclusive of spring hangers, seismic restraints, and vibration mounts where recommended by equipment manufacturers, where required to meet noise abatement regulations and as necessary to prevent piping and equipment vibrations being transmitted to structure. Supports for pipes/etc. supported by the roof deck shall utilize manufactured supports or pipes that will permit effective roofing. Use of irregular shaped units such as strut channels is not permitted.
5. Provide unions with stop valves at all equipment connections and where required for service, repairs and draining. Instrumentation.
6. Provide thermometers, pressure gauges and other items for all piping and equipment installed under this contract, as indicated on contract drawings and as necessary for operation, maintenance and adjustments.
7. Insulation, Painting and Identification: As specified in their respective sections of this Contract.
8. Miscellaneous Work:
Included all the materials, piping, controls, wiring and any other miscellaneous items not specifically shown on Contract Drawings or called for herein but which are normally furnished and required for a complete installation of this type.
9. Tests: The Contractor shall perform pressure, performance and operating tests and other tests as hereinafter specified, as directed by the Authority and as required by agencies.

10. Sealing of Openings: Openings left in walls, floors, ceilings or partitions shall be sealed. Finish shall match existing adjoining finish in all respects.
11. The NYC Building Code classifies as Structural Occupancy/Risk Category III in BC Table 1604.5 of the 2014 NYC Building Code. Seismic requirements of the New York City Building code should be applied. Contractor's engineer shall do field inspect all installations of vibration isolators and seismic bracing and shall submit affidavit that all isolators/bracing have been installed in accordance with the signed/sealed coordinated shop drawings.
12. Coordination Drawings: The plumbing contractor shall cooperate with the HVAC, Fire Protection Systems, and Electrical contractors in the development of the coordination drawings. Coordination meeting to eliminate any interference among the trades that the drawings indicate and to avoid any conflicts in installing the Work.
13. All penetrations made into other trades work are to be sealed to air tight/watertight condition. Penetrations through insulated systems, such as refrigerated rooms/equipment, etc, shall be insulated and sealed on both sides of penetration. Sealant on interior side of such insulated spaces/equipment shall be silicone recommended by manufacturer.

1.02 CODES AND STANDARDS

- A. It shall be unlawful for any person to perform the work referred to under this Plumbing and Drainage Specifications and/or shown on the Plumbing and Drainage Contract Drawings unless such person is a licensed master plumber, partnership, corporation or other business association as permitted by the NYC Building Code and unless such work is performed under the direct and continuing supervision of a licensed master plumber with a minimum experience of 3 years in at least three similar projects.
- B. Where requirements for products, materials, systems, equipment, methods and other portion of the work specified herein exceed minimum requirements of regulatory agencies having jurisdiction over the construction work, contractor shall comply with such

requirements specified herein, unless specifically approved otherwise by the Authority.

1.03 TORCH BURNING OPERATION

- A. The storing and use of oxygen and combustible gases in conjunction with torch burning apparatus is subject to the Rules and Regulations of the Division of Fire Prevention of the Fire Department of the City of New York, latest Fire Prevention (F.P.) Directive. Fire watches shall be provided during all operations using torches for burning, cutting or welding.
- B. Contractor shall apply for and obtain permits for the use and storage of such equipment on Agency premises. The operator of such equipment shall have a certificate of fitness issued by the Fire Department.
- C. The cost of permits, certificates, fire watches, apparatus and other items required in the torch burning operation shall be borne by the Contractor at no additional cost to the Authority.

1.04 PROTECTION OF MATERIALS AND WORK

- 1. Open ends of piping shall be temporarily closed by a proper fitting, until piping is approved and ready for service. The use of plumbing fixtures during the progress of the Work is strictly prohibited.
- 2. Motors and appurtenances shall be covered and protected during the progress of the Work.
- 3. Plumbing fixtures and other items shall be protected during the progress of the Work. When the building is practically complete and ready for use the fixtures and other items shall be cleaned and all metal work polished and the entire installation put in perfect working order.

1.05 GUARANTEES AND WARRANTIES

- A. Contractor's Guarantees: The Contractor guarantees that all Work of this Contract is free from all defects, and is as specified, and that should any defects, which cannot be proven to have been caused by improper use, develop within the space of 3 year from the date of substantial completion of the Work, such defects shall be made good by the Contractor, free of cost to the School Construction Authority.

1.06 OPENINGS AND CHASES

Openings through exterior foundation walls shall be made watertight by the Contractor after pipes, conduits and other items passing through the wall have been installed. The Contractor will be held responsible for securing this condition by the closing of all points of access to such spaces, including the passage of piping and conduits, through all walls, partitions, ceilings and furred out spaces, the closing of access to voids in hollow tile or cinder blocks. There shall be a special inspection of the building with regard to this matter before final acceptance.

1.07 TEMPORARY FIELD OFFICE

1. Each trailer shall be provided with plumbing fixtures, soil, waste, vent and supply piping. Provide underground temporary soil and water piping for all temporary plumbing facilities, making connections to outlets provided at bottom of each trailer and completing all other outside plumbing Work required for proper and continuous functioning of these trailers. Provide a temporary wood trap pit where required.
2. Temporary drainage pipe and fittings shall be service weight cast iron. Trap shall have two hand holes with cast-brass screw plugs. All joints shall be caulked with oakum and lead.
3. Exposed water and drainage piping, including traps and fittings, subject to frost shall be insulated with two 1" thick layers of molded fiberglass pipe insulation. The outer layer shall have a vapor barrier jacket. The vapor barrier jacket shall then be covered with a weatherproof jacket of asphalt saturated roofing felt having a nominal weight of 15 lbs. per square. The weatherproof jacket shall be applied with all joints lapped at least 3". Horizontal joints shall be lapped downward to shed water. The jacket shall be secured in place with No. 20 gage galvanized annealed steel wire.
4. Provide adequate water to toilet fixtures and connect water supply line in the street in accordance with the requirements of the Bureau of Water Supply or Private Water Company.

5. Provide 1" branch water supply line from temporary lines if necessary, into boiler room; Provide a valved outlet where directed and connect from said outlet to boilers for temporary heat.
6. When the temporary field offices are removed, all temporary plumbing Work including supply line for temporary heat shall be removed and all necessary work such as plugging mains, sewers, and other miscellaneous items shall be done by the Contractor.

1.08 SUBMITTALS

Formal submission for approval of manufacturer is not required if the Contractor provides equipment as per manufacturer/model number or series listed in the specification. In this case, Contractor must submit affidavit (for record purposes only) stating that listed equipment and/or items as defined in the specification will be provided. Submittals are mandatory for certain critical items and will be so noted in the respective specifications. Submittals are always required to verify capacity. Schedules, installation instructions, startup manuals, operation and maintenance manuals, and shop drawings are always required to be submitted.

1.09 CLEANING AND REPAIR

- A. At the completion of the Work and before the final inspection is made the Contractor shall thoroughly clean all fixtures, apparatus, appurtenances, piping, brass and chrome and nickel-plated work, marble and stone work, and leave these items free from all marks, scratches, stains, and other damage. All pumps, filters, heaters, and other equipment shall be cleaned and left in condition to operate, and the work, as a whole, left in perfect working order. Remove all tools, debris and excess materials from the premises.
- B. Contractor shall not leave sharp exposed metal edges (bottom of threaded rods, P&D equipment supports, etc.) that could otherwise present safety hazards to the building's occupants/work staff.

08/24/2020

NEUBERGER MUSEUM SOUTH COURTYARD

LIST OF SUBMITTALS

SUBMITTAL
APPROVED

DATE SUBMITTED

DATE

Coordination Drawings:

Contractor's affidavits
For submission of specified
Materials/or appurtenances

SECTION 03005
CONCRETE WORK**PART 1 - GENERAL****1.01 DESCRIPTION OF WORK**

- A. Furnish material, equipment, labor, services required to provide for concrete curbs and pavements, pads, slabs, etc. Work includes the installation of formwork, reinforcement, expansion joints, waterstops, and other items listed herein. Provide special formwork or formliners for concrete with smooth finishes. Allow ample time and facility for the Work of other Divisions to be installed.

1.02 PRODUCTS INSTALLED BUT NOT FURNISHED UNDER THIS SECTION

Products to be installed include, but are not limited to, the following:

- A. Unit Concrete Pavers.....Section 02515
B. Storm Drainage.....Section 02723
C. Joint fillers.....Section 07900

1.03 REFERENCES

References and industry standards listed in this Section are applicable to the Work. Unless more restrictive criteria or differing requirements are explicitly stated in the Specifications, or mandated by governing codes or regulations, the recommendations, suggestions, and requirements described in the referenced standards shall be deemed mandatory and applicable to the Work.

- A. American Society of Testing and Materials (ASTM) standards, latest editions.
B. American Concrete Institute (ACI) standards, latest editions.
C. "Placing Reinforcing Bars - CRSI-WCRSI Recommended Practices", latest edition. Concrete Reinforcing Steel Institute.

1.04 DEFINITIONS

- A. Exposed to view: Situated so that it can be seen from eye level from a public location as stated in ACI 301.
B. Lightweight concrete: Concrete intentionally made to have low density by use of lightweight aggregate conforming to ASTM C330 and required to have an air-dry unit weight less than 115 lb/ft³.

- C. Normal weight concrete: Concrete for which density is not a controlling attribute, made with aggregates of the types covered by ASTM C33 and usually having unit weights in the range of 135 to 160 lb/ft³.

1.05 DESIGN REQUIREMENTS

A. Performance Characteristics:

1. The minimum compressive strength of concrete shall be 3500 psi.
2. For normal weight concrete, the maximum water to cementitious ratio shall be 0.45.
3. Exterior concrete (concrete exposed to the elements) and lightweight concrete shall be air-entrained.
4. Concrete topping for radiant floor slab system: Normal weight concrete with a minimum compressive strength of 3500 psi, non-air entrained, and a maximum water to cementitious ratio of 0.45. Coarse aggregate shall be No. 8. Mix shall utilize macro-synthetic fibers.

1.06 SUBMITTALS

A. Product Data

Submit manufacturers' information for the following:

1. Admixtures
2. Curing compounds
3. Bonding Agent
4. Vapor barrier
5. Vapor retarder
6. Welded Wire Fabric
7. Overlaid plyform formwork and formliners
8. Waterstop
9. Macro-synthetic Fibers

B. Samples

1. Vapor Barrier
2. Vapor retarder

3. 12"x12" samples of the overlaid plyform formwork and formliners.

4. Waterstop

C. Shop Drawings

1. Immediately after award of Contract, prepare shop drawings showing all fabrication dimensions and locations for placing of the reinforcing steel and accessories. Follow detailing recommendations of ACI 315. Shop Drawings are to be prepared by a rebar detailer.

2. Shop drawings will be checked for size of material and spacing by the Engineer of Record, which shall not render the Engineer responsible for any errors in construction dimensions, quantities, bends, etc. that have been made in preparation of the shop drawings. The Contractor shall assume full responsibility for the correctness of quantities, dimensions and fit.

3. Do not order or deliver reinforcement to job site prior to approval of drawings.

D. Quality Control Submittals

1. Design Data: Submit design mixes for concrete, including list of admixtures to be used to the Engineer of Record. Design mix for lightweight concrete shall include both the dry and saturated (SSD) weights of the aggregate. After approval and prior to placement, send the approved mix to the Engineer's approved laboratory.

2. Certificates

Concrete producer's Computer Batch Ticket in accordance with Section BC 1905.8.2.3.1 of the 2014 NYC Building Code must be presented at site to the Engineer's approved testing laboratory before concrete is placed for every load of concrete delivered.

3. Manufactures' Instructions

Waterstop manufacturer's instructions for proper installation of waterstop, including manner in which splices are to be made.

4. Contractor Qualifications

Provide proof of Installer, Producer, and Rebar Detailer qualifications specified under "Quality Assurance".

E. Sustainability Submittals

Not Used

1.07 QUALITY ASSURANCE

A. Qualifications

1. Concrete Installer: Company specializing in performing the Work of this Section shall have 3 years minimum experience on at least 3 successful projects of similar size.
2. Company specializing in the production of concrete shall be certified by the National Ready Mixed Concrete Association (NRMCA) and shall have certification by either a New York City Agency or the NYS Department of Transportation and complies with ASTM C94 requirements for production facilities and equipment. The plant shall use NYSDOT approved trucks and drivers shall be certified by the NRMCA.
3. Rebar Detailer: Company shall be specialized in the detailing of reinforcing bar shop drawings with a minimum of 3 years experience.

B. Regulatory Requirements

1. Building Code: Work of this Section shall conform to all requirements of the NYC Building Code and all applicable regulations of other governmental authorities. Where more severe requirements than those contained in the Building Code are given in this Section, the requirements of this Section shall govern.
2. Industry Standards: The ACI Standards contained in the ACI Manual of Concrete Practice apply to Work of this Section. Where more severe requirements than those contained in the Standards are given in this Section or the Building Code, requirements of this Section or the Building Code shall govern. The Contractor shall keep a copy of ACI SP-15 - "Field Reference Manual" at the site.

C. Certifications

Cement and aggregate shall be acquired from the same source for all work. If a change in suppliers is required, a new mix submittal must be produced with the new material and submitted for approval.

D. Coordination

Coordinate this work with the work of other Divisions so that items to be installed are done so correctly and in proper sequence.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Protect material from the elements and from other damage on the site before, during, and after installation. Store reinforcement in location to prevent rusting, etc.
- B. Ensure proper identification of reinforcement after bundles are broken.
- C. Replace and pay for material and work damaged to the satisfaction of the Engineer.

1.9 ENVIRONMENTAL REQUIREMENTS

- A. Adequately protect concrete placed during rain, sleet, or snow, or when the mean daily temperature falls below 40°F or rises above 90°F as provided in "Mixing and Placing Concrete".

PART 2 - PRODUCTS**2.01 MATERIALS**

- A. Rough Formwork: Commercial Douglas Fir, DFPA: 5/8" thick minimum.
- B. Overlaid Plyform Formwork: Plywood with thermosetting phenolic resin or urethane coating bonded to it to provide a flat matte finish. Shall be B-Matte Formguard by Simpson Timber Company or equal by Dayton Richmond Concrete Accessories.
- C. Smooth Form Finish Formliner: Shall be #340 Smooth Face by Greenstreak or equal by Architectural Polymers.
- D. Release Agent: VOC compliant material such as those of the Cresset Chemical Company for coating forms.
- E. Form Ties: Wire ties not permitted. Form ties for exposed concrete shall be adjustable, leave no metal closer than 1¹/₂" to the surface, and free of devices that leave holes or depressions larger than 7/8" back of exposed surface.
- F. Reinforcing Bars: All reinforcing bars shall be of deformed type of new billet steel conforming to current requirements of ASTM A615 Grade 60. No rail or re-rolled steel will be permitted. For concrete exposed to the elements, reinforcing bars are to be epoxy coated in accordance with ASTM A775.

G. Cementitious Materials:

1. Portland cement: Shall conform to ASTM C150 Type I or II unless otherwise permitted by the Engineer of Record and shall be of the non air-entrained type. Provide Type II for exterior pavements.
2. Ground Granulated Blast-Furnace Slag (Slag cement): Shall conform to ASTM C989, Grade 100 or 120.
3. No other alternate cementitious materials may be utilized.

H. Admixtures

1. The use of admixtures shall comply with the requirements of Section BC 1903.6. The final soluble chloride content in concrete, percent by weight of cement, due to the addition of admixtures and other ingredients shall not exceed .05 at 28 days.
2. Air-entraining admixtures shall conform to ASTM C260.
3. Chemical admixtures shall conform to ASTM C494.

I. Water: Clean potable water free of injurious foreign matter conforming to the requirements of Section BC 1903.4.

J. Aggregate: Maximum size of coarse aggregate shall conform to paragraph 3.3.2 of ACI 318-11.

1. Aggregates for normal weight concrete shall conform to ASTM C33 and be of Size No.57, No.67 and/or No.8.
2. Aggregates for lightweight concrete shall conform to ASTM C330 and be of sizes 3/4" to No.4, 1/2" to No.4, and/or 3/8" to No.8.

K. Curing Compounds

1. Non-strippable
 - a. Clear Curing and Sealing Compound (A.I.M. Regulations - VOC Compliant, 350 g/l): Liquid type membrane-forming curing compound, clear styrene acrylate type, complying with ASTM C1315, Type I, Class A, 25% solids content minimum. Moisture loss shall be not more than 0.40 Kg/m² when

applied at 300 sq. ft./gal. Manufacturer's certification is required.

- b. Curing Compounds shall be "Super Diamond Clear VOX" by The Euclid Chemical Company or "Masterkure 100W" by Master Builders.

2. Strippable

- a. Clear Curing Compound: Liquid type membrane-forming curing compound, complying with ASTM C309.
- b. Curing Compounds shall be "Kurez DR Vox, Kurez W Vox by The Euclid Chemical Company or "Masterkure N-Seal VOC" by Master Builders.

L. Waterstops

1. Concrete Joints

- a. Water-swelling acrylate ester resin, hydrophilic rubber, or polyurethane type capable of expanding and contracting over multiple number of wet-dry cycles without reduction in its expansion ratio. If concrete surface is very uneven, provide paste type indicated in 2 below.
- b. Shall be Duroseal Gasket Waterstop by BBZ USA-Greenstreak, Swellseal 8 by DeNeef (Grace), Adcor ES by W.R. Grace, or SikaSwell Profile by Sika Corp. Provide approximately 1" x 3/4" chemical resistant type. Attach to concrete and membranes with manufacturer's recommended adhesive or paste type waterproofing.

2. Steel, pipe and metal penetrations

- a. Water-swelling acrylate ester or polyurethane paste type capable of expanding and contracting over multiple number of wet-dry cycles without reduction in its expansion ratio. Paste is a thixotropic grade material capable of being placed on uneven surfaces.
- b. Shall be Duroseal Paste by BBZ USA, Swellseal Mastic by DeNeef (Grace), or SikaSwell S by Sika Corp. Provide chemical resistant type. Provide a minimum of 3/8" by 1/2" bead of material.

Waterstops Manufacturers

1. BBZ USA-Greenstreak, St. Louis, MO 63122
2. Sika Corp, Lyndhurst NJ 07071
3. DeNeef (Grace) Construction Chemicals, Waller, TX 77484

M. Bonding Agent

1. Epoxy/acrylic resin that will not form a vapor barrier with the concrete with the following properties:
 - a. Bond strength of 1800 psi in 2 hours when tested in accordance with ASTM C882.
 - b. Flexural strength of 2000 psi in 28 days when tested in accordance with ASTM C78.
 - c. Tensile strength of 600 psi in 28 days when tested in accordance with ASTM C496.
2. Bonding agent shall be "CR246 Sto Bonding and Anti-corrosion Agent" by Sto Concrete Restoration Division, Armatec 110 by Sika Corp, or Corr-bond by Euclid Chemical Company.

N. Vapor Barrier

1. Vapor Barrier shall meet the following properties:
 - a. Minimum 15-mil polyolefin geomembrane.
 - b. Water Vapor Barrier - ASTM E1745, Class A
 - c. Permeance Rating - ASTM E96: 0.02 gr/ft²/hr or lower
 - d. Puncture Resistance by ASTM E1745: Class A, minimum 2300 grams
 - e. Tensile Strength by ASTM E1745: Class A, minimum 45 lbf/in
2. Accessories
 - a. Polyethylene tape with pressure sensitive adhesive
 - b. Pipe boot for piping and conduits, prefabricated or constructed from vapor barrier and tape

3. Shall be:
 - a. Stego Wrap 15 mil Vapor Barrier by Stego Industries
 - b. Griffolyn 15 mil Green by Reef Industries
 - c. Perminator 15 mil by W.R. Meadows
 - d. Vaporblock VB15 15 mil by Raven Industries
- O. Vapor Retarder
 1. Vapor retarder shall be polyolefin 10-mil thick minimum, with a perm rating of less than 0.1 when tested in accordance with ASTM E96, and shall be resistant to decay when tested in accordance with ASTM E154.
 2. Shall be:
 - a. Griffolyn 10 mil Green by Reef Industries
 - b. Stego Wrap 10 mil Vapor Barrier by Stego Industries
 - c. Perminator 10 mil by W.R. Meadows
 - d. Vaporblock VB10 10 mil by Raven Industries

2.02 MIXES

- A. General: Concrete for all parts of the Work shall be of the specified quality capable of being placed without excessive segregation and, when hardened, of developing all characteristics required by the Specifications and Drawings.
- B. Strength: Strength requirements given in Part 1 of this Specification are based on 28-day compressive strength, unless high early strength is specified, in which case required strengths are based on 7-day compressive strength. Mixes with slag will have a slower initial set time, which must be taken into account when finishing.
- C. Method of Proportioning
 1. Proportion concrete mix of strength listed in B above in accordance with the requirements of Section BC 1905.4. The Engineer of Record will review the design mix.
 2. Mix designs are specific to material used, concrete producer, and method of placement. Each

mix design must be reviewed and accepted by the Engineer of Record.

3. The recycled content in the concrete mix shall be 40% of the cementitious content or a minimum of 6% of the dry weight.

D. Normal Weight Concrete

1. Unless otherwise specified, proportion and produce normal weight concrete to have a maximum slump of 4" or less. A tolerance of up to 1" above the indicated maximum shall be allowed for individual batches provided the average for all batches or the most recent 10 batches tested, whichever is fewer, does not exceed the maximum limit. The slump shall be determined by ASTM C143. Concrete containing High Range Water Reducer shall have a slump not exceeding 9", unless otherwise approved by the Engineer of Record. The concrete shall arrive at the job site with a water slump of 2" to 3", be verified by the Engineer's representative, and the HRWR admixture added to increase the slump to the approved level.
2. The concrete producer shall provide a redosage chart onsite to maintain proper slump or slump-flow. The chart must indicate dosage per remaining concrete and expected slump or slump flow increase.
3. Where normal weight concrete is indicated to be air-entrained, provide the following air content for the grading size of coarse aggregate as follows:
 - a. No.8.....7 $\frac{1}{2}$ %
 - b. No.57 or 67.....6%

Tolerance on air content as delivered shall be +1.5%.
4. Use 4 lbs/cy of macro synthetic fibers for topping slab for radiant floor construction.

E. Mortar Screed and Protection Coats

Mortar screed coats shall be one part cement, three parts sand, water as required.

2.03 SOURCE QUALITY CONTROL**A. Tests**

1. The Engineer of Record will review the proposed materials for compliance with the Specifications prior to construction.
2. The Testing Laboratory will perform field tests as work progresses as listed in "Field Quality Control".

B. Inspection**1. Testing Laboratory**

- a. Concrete work is subject to Quality Control Inspection
- b. The Engineer will assign a licensed concrete testing laboratory to perform the required field testing. The Testing Laboratory will perform field testing and inspect the work as it progresses. The listing of services to be performed by the testing Laboratory are given in Section 1.6 of ACI 301.
- c. The Testing Laboratory must be present when the concrete is being placed. The Engineer may elect to have the laboratory present at the plant to witness the batching and mixing of the concrete.

2. Notification

- a. Notify the Engineer in writing at least forty-eight hours in advance of each concrete placement. The Engineer will notify the Testing Laboratory immediately to order out the necessary concrete technicians to cover the work. Keep records of such notification.
- b. Once the concrete technicians are ordered out and a cancellation follows, the Contractor will be charged Four Hundred Fifty Dollars for each technician so ordered to appear, unless a cancellation order is issued to the Laboratory by 3 PM the day before the concrete placement.
- c. During the placement of the concrete, notify the Engineer immediately of any delay at the concrete plant or at the job site. Where the Engineer decides to provide a technician at the plant, do not mix concrete or add

admixtures unless the Technician is present.
Do not add admixtures to be added at the site
unless the Technician is present.

3. Contractors Responsibility for Quality Control

- a. The Engineer and the Engineer's approved Testing Laboratory shall receive the producer's Computer Batch Ticket for each truck.
- b. The tests and inspections, as provided in the Code, do not in any way relieve the Contractor of responsibility to construct the Work in accordance with the Drawings and Specifications and to use safe, standard methods of construction at all times, safeguarding the public, workmen, and structure. The Contractor shall be solely responsible for the physical control of the materials and concrete mixes, and shall see that such mix designs, tests, and controls are in accordance with the Code and Specifications. The Contractor's superintendent shall attest that the work was installed in accordance with the documents.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Prior to placement of concrete, verify that the concrete cover over the reinforcement is that specified on Drawings and that reinforcement and all other embedded items are provided and held securely, positioned accurately, and will not be a detriment to concrete placement.
- B. Examine all adjoining work on which this Work is in anyway dependent for proper installation and workmanship. Report to the Engineer any condition that prevents the performance of this Work.

3.02 PROTECTION

- A. Protect concrete members on grade and the subgrade from freezing before and after installation. Provide blankets and other items necessary.
- B. Protect adjacent finish materials and previously poured concrete against spatter during concrete placement.
- C. Provide and maintain barricades and safeguards around openings, etc. to protect workmen from injury and to

comply with all Building Code, OSHA, and other authorities having jurisdiction regulations.

3.03 FORMWORK

- A. Provide formwork wherever necessary to confine concrete to the required shapes shown on Drawings. Follow all procedures of Section 2 of ACI 301, ACI 347, and Section BC 3305.3 and ACI 318-11, Section 6. Formwork, reinforcement, and embedded items shall be clean of all accumulated mortar from previous concreting and other foreign material. Repair or replace any formwork as required.
- B. Cover the surfaces of the rough or overlaid plyform formwork (when used) with an approved form release agent that will effectively prevent absorption of moisture, prevent bond with the concrete, and which will not stain the concrete surfaces. Do not apply oil or release agents on formwork for concrete to receive additional concrete (such as at construction joints). Apply at a rate that will help achieve the finish specified below. Follow manufacturer's recommendations.
- C. Adequately support and substantially brace formwork to hold lines and shape. Securely brace forms against lateral deflection. Formwork shall be tight jointed to prevent leakage of concrete.
- D. Place chamfer strips in the corners of forms to produce beveled edges (chamfers) on permanently exposed surfaces and wherever else shown on Drawings.
- E. Provide "Rough Form Finish" for surfaces not exposed to view. Use plywood or metal forms coated with a release agent.
- F. Provide "Smooth Form Finish" for surfaces exposed to view and the elements. Use dress, square-edged lumber with form liner or overlaid plyform forms with applicable release agent. Finish shall be a CS3 surface finish or better as developed by the Cresset Chemical Company.
- F. As per BC 1906.2, remove forms in such a manner as to assure the complete safety of the structure as required by Section BC 3305.3 and ACI 318-11, Section 6.1. Formwork not supporting the weight of the concrete may be removed as soon as the concrete has hardened sufficiently to resist damage from removal operations and as required by G below.
- G. When repair of surface defects or finishing is required at an early age, remove forms as soon as the concrete

has hardened sufficiently to resist damage from removal operations.

3.04 PREPARATION

- A. Remove ice, excess water, trash, and rubbish from forms.
- B. Remove hardened concrete from inner surfaces of conveying equipment and all formwork, reinforcement, and dowels.
- C. Prepare previously placed concrete to be in contact with new concrete in the manner described under "Construction Joints".
- D. Prepare existing concrete to be in contact with new concrete by roughening and cleaning the surface and applying a bonding agent. Surface must be free of laitance. Concrete must be placed after agent cures and within 20 hours of applying bonding agent. If time elapses, apply a new application in accordance with the directions of the manufacturer.
- E. Do not place concrete on frozen ground.

3.05 JOINTS AND EMBEDDED ITEMS

- A. Construction Joints
 - 1. Make joints not shown on Drawings at locations that will least impair the strength of the structure and comply with requirements of Section BC 1906.4. Such location is subject to the approval of the Engineer of Record.
 - 2. Continue reinforcement across joints. Provide longitudinal keys at least 1½" deep in walls and provide other keys as required. Drawings indicate keys or roughened surface at interface of walls and footings.
 - 3. Thoroughly clean concrete surface of oil, grease, and other contaminants and remove all laitance prior to placement of adjoining concrete. Roughen surface of the concrete in an approved manner that will expose the aggregate uniformly to a 1/4" amplitude and will not leave laitance, loosened particles of aggregate, or damaged concrete at the surface. Dampen surface immediately prior to placement.

B. Expansion Joints

1. Do not extend reinforcement or other embedded metal items bonded to concrete continuously through expansion joint. Provide smooth dowels greased on one end at the joints with end cap or insert into pvc sleeve of length greater than the dowel length by .75" minimum.
2. Provide joint filler of type specified in Section 07900 at the expansion joint of the sizes indicated on the Drawings or specified herein.

C. Waterstops

1. Provide waterstops at all joints and all penetrations of foundation wall and slabs (all interior slabs on grade) of type indicated in Part 2 of this Section. All surfaces onto which material is placed shall be clean and smooth. Do not let materials come in contact with water by covering waterstop, forms, or other means necessary. Provide minimum clearance from edge of concrete as per manufacturer's recommendations, typically 3".
2. Provide maximum practical lengths for each piece so that the number of end joints will be held to a minimum.
3. Make joints in such a manner that they develop effective watertightness fully equal to that of the continuous material. All joints to be lapped as per manufacturer's instructions.
4. Use manufacturer's adhesive or swelling paste type for applying gasket type to previously poured concrete and/or waterproofing membrane. Surface onto which waterstop is placed shall be smooth.
5. Provide swelling paste type at all pipe penetrations, conduits, drains, steel members, and other areas where items penetrate the concrete foundation system and at uneven concrete surfaces.
6. If water penetrates joints in which waterstops are placed at contract locations or at cracks and cold joints, the Contractor shall remediate the crack with injection material recommended by the Engineer that will provide a 3-year labor and material guarantee against water seepage at no cost to the Engineer.

D. Other embedded items

1. Place all sleeves, anchors, waterstops, and other embedded items required for the Work of other Divisions or for their support prior to concreting.
2. Provide ample notice and opportunity for items of other Division to be introduced and/or furnished for installation before concrete is placed. Coordinate the Work of the other Divisions so all items are placed in their proper location.

3.06 MIXING AND PLACING CONCRETE

A. General

1. Notify Engineer at least 48 hours in advance of each concrete placement. Do not place concrete without approval of the Engineer.
2. Do not allow rainwater to increase mixing water nor damage surface finish.
3. When placing concrete in cold weather (air temperature below 40°F), concrete shall contain either an accelerating admixture or use Type III cement.
4. Production of concrete, including batching and mixing, shall be done in accordance with the requirements of Section 4 of ACI 301 and Section BC 1905.8.
5. Placement of concrete shall be done in accordance with the requirements of Section 5 of ACI 301 and Sections BC 1905.9 through 1905.13. All consolidation shall be done by vibration.

B. Mixing

1. Batch, mix, and transport ready-mixed concrete in accordance with the appropriate sections of ASTM C94 and Section BC 1905.8.2. Truck mixers and agitators shall meet the requirements of the Truck Mixers Manufacturer's Bureau or shall comply with Section 11 of ASTM C94 and shall be NYSDOT approved. All trucks shall have working revolution counters and site gages.
2. Batch and mix other concrete in accordance with subsection 4.3.1 of ACI 301.
3. Use of chemical admixtures must be approved by the Engineer of Record.

4. Unless otherwise approved by the Engineer of Record, concrete shall be deposited within 1½ hours or 300 revolutions of the mixing drum, whichever comes first, after introduction of water to the cement or cement to the aggregate. When the ambient temperature rises above 90°F, the time shall be decreased to 1 hour.
 5. Batch lightweight concrete using the saturated weight of aggregate, which shall take into account the internal and surface moisture content.
 6. Tempering and control of mixing water
 - a. Mix concrete only in quantities for immediate use. Concrete which has started to set shall not be retempered, but shall be discarded. Water shall not be added at the site.
 - b. For concrete containing HRWR (Superplasticizer), if loss of slump occurs, HRWR may be redosed at the site as long as a "flash set" has not occurred. Redosage chart and procedures must be discussed and approved by the Engineer of Record and the admixture manufacturer.
- C. Placing: Place concrete in accordance with ACI 304R, ACI 318-11, and Sections BC 1905.9 and BC 1905.10.
1. Consolidate all concrete by vibration so that the concrete is thoroughly worked around the reinforcement, around embedded items and into corners of forms, eliminating all air or stone pocket or weakness. Internal vibrators shall be the largest size and most powerful that can be used in the Work, as described in **Section 5.1** of ACI 309R, with a minimum frequency of 7000 revolutions per minute and shall be operated by competent workmen. Over-vibrating and use of vibrators to transport concrete within forms is not permitted. Insert and withdraw vibrators at many points, from 18" to 30" apart. At each insertion, the duration shall be sufficient to consolidate the concrete but not sufficient to cause segregation, generally from 5 to 15 sec duration. Keep a spare vibrator on the job site during all concrete placing operations.
 2. Cold Weather Concrete Protection

When the mean daily temperature of the atmosphere is less than 40°F during concreting, or within 24 hours thereafter, follow the procedures outlined in ACI 306R to protect the concrete. Temperature of

the plastic concrete shall be no lower than 55°F. Heat all forms, reinforcing steel, and surfaces to receive concrete above the freezing point and keep them completely free of frost, snow, and ice.

3. Hot Weather Protection: When the mean daily temperature of the atmosphere is over 90°F during concreting, follow the procedures outlined in ACI 305R to protect the concrete.
4. As per Section BC 3303.15, all concrete washout water, if washed out on site, shall be collected in water tight containers placed on the site for holding prior to legal disposal off site. Wash water is not permitted to be disposed of in storm, sanitary, or combined sewers.

3.07 FINISHING OF FORMED SURFACES AND REPAIR OF SURFACE DEFECTS

A. General

1. Remove forms as soon as practicable.
2. Repair surface defects, including tie holes and cracks, immediately after form removal. Patches shall be of quality to match the specified finish.
3. Remove oil, grease, compounds, and other contaminants from surfaces and areas to be repaired.
4. Provide finishes specified below immediately after form removal.
5. Provide curing and protection.

B. Repair of Surface Defects

Repair surface defects in accordance with subsection 5.3.7 of ACI 301. At the Engineer's discretion, repair mortars and coatings shall be employed to rectify defects. Materials shall be as selected by the Engineer.

C. Tie Holes and Other Repairs

1. Remove ties, nails, and other form accessories below the concrete surface when the surface is exposed to view and/or the elements. For surfaces not exposed to view or the above mentioned conditions, remove metal to the surface.
2. Undercut surfaces of holes. After cleaning and thoroughly dampening the holes, fill them solid with the patching mortar. The mortar shall match

the color of the existing concrete for concrete exposed to view as specified in paragraph B above.

D. Formed Finishes

1. Rough Form Finish: Provide for concrete not exposed to view.
 - a. Repair concrete surface as indicated above.
 - b. Chip or rub off fins exceeding 1/4" in height.
2. Smooth Form Finish: Provide for concrete exposed to view. Concrete shall have a CS 3 or better finish as developed by the Cresset Chemical Company and shall have been placed without the need for patching or removal of fins, etc.
 - a. Repair concrete surfaces as indicated above.
 - b. Chip or rub off fins completely and grind smooth.
 - c. Provide smooth rubbed finish as follows:
 - 1) Produce on newly hardened concrete no later than the day following form removal.
 - 2) Wet the surfaces and rub with a No. 16 carborundum brick or other equal abrasive to obtain a smooth, even surface of uniform appearance without applying any cement or other coating.
 - 3) Obtain the final finish by thoroughly rubbing with a No. 30 carborundum brick. The surface shall be wet for a period of 3 days. The Engineer shall be the sole judge if the finish is proper.

E. Acceptance of Concrete Finish

If the finish produced is not acceptable to the Engineer, the Contractor shall be responsible for all costs incurred to produce an acceptable finish by whatever means determined by the Engineer. Remove stains, rust, efflorescence, and other surface deposits to the satisfaction of the Engineer.

3.08 SLABS**A. Placement**

1. Mixing and placing shall be carefully coordinated with finishing. Do not place concrete on the subgrade or forms more rapidly than it can be spread, straightedged, and darbied or bull floated. Provide leveling, floating, troweling, etc. at the correct time interval after pouring to prevent dusting and provide a durable surface as specified in ACI 302.1R. These operations must be performed before bleeding water has an opportunity to collect on the surface.
2. To obtain good surfaces and avoid cold joints, the size of finishing crews shall be planned with due regard for the effects of concrete temperature and atmospheric conditions on the rate of hardening of the concrete.

B. Leveling and Finishing**1. General**

- a. Unless otherwise indicated on the Drawings or specified herein, make all slabs even and uniform in appearance and, where no slope is required, level.

1) Floor Levelness:

- a) Slabs on grade and formed slabs shall be placed level to an $F_L=35$.
- b) Slabs placed on stair pans and treads shall be placed level to an $F_L=35$

2) Floor Flatness

- a) Slabs on grade and formed slabs shall be finished flat to an $F_F=50$ based on 3/16".
- b) Slabs of stair pans and treads shall be finished flat to an $F_F=50$ based on 1/8".

- 3) Floor flatness and levelness shall be measured in accordance with ASTM E1155 within 72 hours of placement.

- b. Where floor drains or floor slopes are indicated, slope slabs uniformly to provide even fall for drainage.
- c. Follow detailed recommendations for finishing given in ACI 301, Section 5, and ACI 302.1R.
- d. Protect finishes from contamination from time of placing until time of acceptance, placement of topping, etc.
- e. Remove defects of sufficient magnitude to show through floor coverings or that do not meet tolerances by grinding.

2. Finishes

- a. Surfaces which receive bonded applied cementitious applications such as full-set terrazzo and vitreous ceramic tile, self-leveling underlayment, concrete fills and toppings, crystalline waterproofing, screed coats: Strike off and level to the proper elevation. After the concrete has stiffened sufficiently to permit the operation, float the surface to a uniform sandy texture. The surface shall then be broomed to a texture as approved by the Architect.
- b. Surfaces to receive floor coverings such as resilient flooring, thin-set terrazzo and vitreous ceramic tile, carpeting, wood floors or surfaces that are exposed or painted, unless specified otherwise: Steel trowel surface to a smooth dense finish, free of trowel marks, grooves, depressions and ripples with a tolerance no greater than $\pm 3/16$ " in ten feet ($1/8$ " at wood floors). Exposed or painted slabs are to have a "hard trowel" finish. Apply densifier/sealer to slabs exposed or painted, except for those specified below to have no finish. Apply two coats in accordance with the manufacturer's instructions at the proper time.
- c. Surfaces intended to receive roofing, waterproofing membranes; mechanical pads: Level and float surface. Leave surface free from depressions, bulges, rough spots, and other defects.
- d. Pavements: Finish surface to a true smooth plane and texture with a toothed roller or float with a wood float. Score concrete pavement in squares of approximately 5'-0"

and/or as shown on Drawings. Each rectangular slab shall have all edges neatly rounded with proper tools and be bounded on all sides by a troweled border about 1" in width.

- e. Ramps, Driveways, Exterior Concrete Steps: Level and float surface. Follow with a broom finish perpendicular to direction of traffic.

C. Slabs on Grade

1. General

- a. Aggregate base and crushed stone base material and preparation is part of Work of Section 02201.
- b. Where pavements to remain are damaged or destroyed as a result of the Work, patch, repair, or replace as required. Color to match existing.
- c. Subgrade and/or aggregate base/crushed stone base shall be free of frost before concrete placing begins.
- d. Control Joints:
 - 1) Primary Method: Soff-Cut System method, by Soff-Cut International, Corona, CA (800)776-3328. Finisher must have documented successful experience in the use of this method prior to this project. Install cuts within 2 hours after final finish at each saw cut location. Use 1/8 inch thick blade, cutting 1¹/₄ inch into slab.
 - 2) Optional Method (Where Soff-Cut System Method Equipment is Not Available): Properly time cutting with the set of the concrete. Saw-cut control joints within 12 hours after finishing. Start cutting as soon as the concrete has hardened sufficiently to prevent aggregates being dislodged by the saw. Complete cutting before shrinkage stresses become sufficient to produce cracking. Use 1/4 inch thick blade, cutting 1/4 slab depth.

2. Slabs where vapor barrier required
 - a. Provide vapor barrier for all interior slabs on grade except for pipe and duct and crawl spaces.
 - b. Install vapor barrier in accordance with manufacturer's instructions and ASTM E1643. Just prior to concrete placement, check vapor barrier for punctures and repair as specified below.
 - 1) Unroll vapor barrier with the longest dimension parallel to the direction of pour.
 - 2) Lap barrier over footings and seal to foundation walls.
 - 3) Overlap joints 6" and seal with pressure sensitive tape.
 - 4) Seal all penetrations with pipe boots.
 - 5) No penetration of the barrier is allowed except for reinforcing steel and permanent utilities.
 - 6) Repair damaged areas by cutting patches of vapor barrier, overlapping damaged areas 6", and taping all four sides with pressure sensitive tape.
 - c. Pour slab to required thickness.
3. Slabs where vapor retarder required
 - a. Provide vapor retarder for all slabs on grade of pipe and duct and crawl spaces.
 - b. Place vapor retarded over compacted base, providing 6" minimum lap at ends. Install vapor retarder in accordance with manufacturer's instructions. Repair damaged areas by cutting patches of vapor barrier, overlapping damaged areas 6.
 - c. Pour slab to required thickness after installation of reinforcement.
4. Slabs where no vapor barrier required
 - a. Dampen subgrade or aggregate/crushed stone base immediately prior to placement of concrete.

- b. Pour slab to required thickness after installation of reinforcement.

5. Pavements, Areaways

- a. Provide 4" thick concrete slab unless otherwise indicated.
- b. Provide 6 x 6 - W2.9 x W2.9 WWF placed 1¹/₂" from top surface.

6. Driveways

- a. Provide 7" thick concrete slab.
- b. Provide 4 x 4 - W4 x W4 WWF placed 2" from surface.

7. Expansion joints

- a. Provide expansion joints for all exterior concrete pavements, driveways, etc. specified under this Section or as shown on Drawings. Expansion joints shall occur at intervals not to exceed 20' in each direction or as indicated on Drawings.
- b. Provide continuous expansion joints at the following locations: Driveways and other concrete pavements abutting area walls, buildings, retaining or any other walls, check pieces, steps, curbs. Also provide at the perimeter of interior slabs on grade (except for framed slabs) and as indicated on contract drawings.
- c. Expansion joint shall be 1/2" wide, full depth, and flush except where sealer is to be provided at exterior pavements, driveways, and where indicated on Drawings. In this case joint shall be full depth minus 1/4" to allow for the poured joint sealer.

D. Structural Lightweight Concrete Fill

- 1. Structural lightweight concrete fill is required at the following location:
 - a. As a gradient fill on the roof slab to repair and obtain the required slope.
 - b. Other areas as indicated on Drawings.

2. Prepare concrete surface to receive fill by cleaning laitance, grease, oil, dust, etc. by mechanical or other acceptable means.
 3. Immediately prior to placement of fill, dampen surface (without leaving standing water) and apply the specified bonding agent. Place the fill within the specified open time for the bonding agent (typically 24 hours).
 4. Provide finish as specified in paragraph B of this Article.
- E. Mortar Screed and Protection Coats
1. Screed coats are required to receive membrane W.P. and to protect membrane W.P.
 2. Screed coats shall be 1/2" thick unless otherwise shown on details or specified.

3.09 MISCELLANEOUS CONCRETE WORK AND TRIMMINGS

- A. Provide curbs, walls, and other miscellaneous concrete trimmings.
- B. Provide motor, blower, and other mechanical bases. Coordinate with the work of Division 15 and 16. Provide concrete bases as shown on the Drawing.

3.10 PATCHING AND BONDING TO EXISTING CONCRETE

- A. Provide bonding agent whenever new concrete is to be poured against existing concrete, whenever the time between concrete pours is longer than that allowed for proper bond, and wherever bonding agent is indicated on the Drawings to be applied.
- B. Remove loose concrete from surface to be bonded with new concrete and clean. Remove rust from reinforcement and structural steel by power chipping and power driven brushes.
- C. Apply bonding agent in accordance with manufacturer's specifications. Pour concrete as soon as bonding agent has cured and within 20 hours after application. If the 20-hour period has elapsed, then the bonding agent must be reapplied.

3.11 CURING AND PROTECTION

- A. General
 1. Begin curing concrete immediately after placement and finishing. Protect all freshly deposited

concrete from premature drying and excessively hot or cold temperatures and maintain it with minimal moisture loss at a relatively constant temperature for the period of time necessary for the hydration of the cement and proper hardening of the concrete. Detailed procedures are given in ACI 308.

2. Provide 7-day moist curing or provide strippable curing compounds to surfaces receiving waterproofing, adhesives, membranes or additional concrete. The compound shall be removed in an approved manner prior to subsequent installation of the material.

B. Procedure

1. Concrete surfaces not in contact with forms:
 - a. Ponding or continuous non-manual sprinkling.
 - b. Absorptive mat or fabric, sand, or other covering kept continuously wet.
 - c. Curing compounds conforming to ASTM C1315 or strippable curing compound conforming to ASTM C309.
2. Concrete surfaces in contact with forms:
 - a. Minimize moisture loss from forms exposed to heating by the sun by keeping forms wet until they are removed.
 - b. After form removal, cure with one of the methods listed in 1 above.
3. Continue curing until a total of 7 days has elapsed during which the temperature of the air in contact with concrete has remained above 50°F. Prevent rapid drying during and at the end of the curing period.
4. Remove all curing compounds completely with cleaners recommended by curing compound manufacturer.

C. Cold Weather Curing

Concrete must be protected from water loss. This shall be accomplished by the application as soon as possible without harm to the concrete surfaces of either (a) exhaust steam, or vapor-resistant paper or polyethylene film, or (b) curing compounds. In all other respects, curing shall conform to applicable provisions of this

Section. Concrete temperature shall be maintained between 50°F and 70°F.

D. Hot Weather Curing

1. During the period June 1 to October 1 or when hot weather conditions require it, maintain continuous water curing for a minimum period of twenty-four hours. Provide for wind breaks, shading, and other necessary provisions.
2. After 24 hours, curing shall be by one of the methods specified under B above. In all other respects, curing shall conform to applicable provisions of this Specification. Upon termination of the specified moist curing, every effort should be made to reduce the rate of drying by avoiding air circulation.

E. Protection from mechanical injury: Protect concrete from mechanical disturbances during curing period as described under "Protection and Cleaning".

3.12 TOLERANCES

- A. Construct formwork so that concrete surfaces will conform to the tolerance limits listed in ACI 117.
- B. Establish and maintain in an undisturbed condition and until final completion and acceptance of the project sufficient control points and bench marks to be used for reference purposes to check tolerances.
- C. Place reinforcing bars in accordance with the tolerances given in Section BC 1907.5.2.
- D. Move bars as necessary to avoid interference with other reinforcement, conduits, or imbedded items. If bars are moved more than one bar diameter, or enough to exceed the above tolerances, the resulting arrangements are subject to approval by the Engineer of Record.
- E. Place concrete to meet tolerances specified in ACI 117, unless specified otherwise herein.

3.13 FIELD QUALITY CONTROL

A. Tests

Tests to be performed by the Engineer's approved Testing Laboratory during construction are as follows:

1. Compliance of materials to Specifications tested from production samples.

2. Determination of the slump of the concrete for each sample taken.
3. Determination of water content of freshly mixed normal weight concrete utilizing the procedure of AASHTO T318. Concrete that does not meet the maximum water to cement ratio or the proportions given in the approved design mix will be immediately rejected regardless of slump.
4. Strength tests: The frequency of conducting strength tests of concrete shall be in accordance with Section BC 1905.6.2, with additional cylinders taken for an additional strength test and one cylinder for a 7-day break. Strength tests shall be performed for each 50 cubic yards, or portions thereof, of concrete placed in any one day's concreting. Specimens will be stored at the site in the insulated curing box provided by the Contractor. Each group of specimens is considered one strength test. One cylinder will be broken at 7 days for information. Strength test shall be at 28 days for acceptance. The cylinders for the additional strength test will be utilized for either a strength test or other types of testing only if the 28-day breaks are low or durability of the concrete is in question. If one specimen in a test manifests evidence of improper sampling, molding, or testing, it shall be discarded and the average strength of the remaining cylinders shall be considered the test result. Should all specimens in a test show any of the above defects, the entire test shall be discarded.
5. Determination of air content and unit weight of sample.
6. Determination of temperature of concrete sample for each strength test.

B. Inspection

1. Refer to "Source Quality Control" for responsibility and procedure.
2. The lab will inspect placement of reinforcement and thickness of members prior to placement.
3. Keep a record of all inspections, the name of the persons making them, and the name of the foreman in charge of formwork at the site. Submit to the Engineer's representative on the site a copy of the inspection records prior to each concrete placement.

4. The Contractor shall cooperate in the making of all tests by the Laboratory Technician by:
 - a. Providing the field storage curing facility as defined in ASTM C31 as per Section BC 1905.6.3.3.1 of sufficient size and strength to contain all specimens made in any two consecutive working days.
 - b. Providing a buggy for transporting the concrete taken from the mixer (and/or point of placement) to the location of the curing box for testing and the preparation of specimens.
 - c. Protecting the property of the Laboratory and keeping test specimens free from vibration and other disturbances.
 - d. Providing a microwave of the size specified in AASHTO T318 and a portable generator.

C. Evaluation and Acceptance of Concrete

1. Strength tests on concrete will be evaluated according to Section BC 1905.6.3.4 by the Engineer of Record. If the tests fail, the adequacy of the concrete will be checked according to the requirements of Section BC 1905.6.5. Concrete exposed to the elements with indications of poor durability will be rejected regardless of strength and will be subject to petrographic examination.
2. Pay for additional costs of labor and materials required at the job for all damages resulting from testing. Remove and replace concrete work that is not of adequate strength or weather resistance and cannot be made to work by remedial methods acceptable to the Engineer at own cost. The Contractor shall be held responsible for all delays and damages to the work of other Divisions that occur as a result of non-conformance.
3. Pay for all expenses borne by the Engineer resulting from low strength test procedures or evidence of poor durability (such as high slump) specified above.

3.14 PROTECTION AND CLEANING

- A. During the curing period, and thereafter as conditions may require, protect the concrete from damaging mechanical disturbances, particularly excessive load stresses, heavy shock, and excess vibration. Protect

all finished concrete surfaces from damage caused by construction equipment, materials or methods, and by rain or running water.

3.15 ACCEPTANCE OF CONCRETE WORK

- A. The provisions of Subchapter check of ACI 301 apply to the acceptance of the concrete work.
- B. Concrete work judged inadequate by structural analysis, core test, results of load test or deemed unacceptable due to appearance or durability concerns shall be repaired, reinforced with additional construction if so directed by the Engineer of Record, or be replaced if so directed by the Engineer at the Contractor's expense.

END OF SECTION

LIST OF SUBMITTALS

<u>SUBMITTAL</u>	<u>DATE SUBMITTED</u>	<u>DATE APPROVED</u>
Product Data:	_____	_____
1. Admixtures		
2. Curing compounds		
3. Bonding agent		
4. Vapor Barrier		
5. Vapor Retarder		
6. Waterstop		
7. Overlaid plyform formwork or formliners		
Samples:	_____	_____
1. Vapor barrier		
2. Vapor retarder		
3. Waterstop		
4. Overlaid plyform formwork or formliners		
Shop Drawings:	_____	_____
Design Data:	_____	_____
1. Normal weight concrete mix		
Certificates:	_____	_____
1. Concrete producer's Batch Ticket to Engineer's lab.		
Manufacturers Instructions:	_____	_____
1. Waterstop		
Qualifications	_____	_____
1. Concrete Installer		
2. Concrete producer		
3. Rebar Detailer		

* * *

SECTION 03610
GROUTING

PART 1 - GENERAL**1.01 DESCRIPTION OF WORK**

- A. Furnish material, equipment, labor, services required to provide non-shrink grout. Work includes, but is not limited to grouting under steel base plates.

1.02 RELATED SECTIONS

- A. Unit Concrete Pavers Section 02515
- B. Metal Fabrications Section 03610

1.03 REFERENCES

References and industry standards listed in this Section are applicable to the Work. Unless more restrictive criteria or differing requirements are explicitly stated in the Specifications, or mandated by governing codes or regulations, the recommendations, suggestions, and requirements described in the referenced standards shall be deemed mandatory and applicable to the Work.

- A. American Society of Testing and Materials (ASTM) Standards, latest editions.
- ASTM C109 Test Method for Compressive Strength of Hydraulic Cement Mortars.
- ASTM C191 Standard Test Methods for Time of Setting of Hydraulic Cement by Vicat Needle
- ASTM C1090 Standard Test Method for Measuring Changes in Height of Cylindrical Specimens of Hydraulic-Cement Grout
- ASTM C1107 Specification for Packaged Dry, Hydraulic-Cement Grout (Non-shrink).
- B. Army Corp of Engineers
- CRD C-621 Specification for Non-Shrink Grout.

1.04 SUBMITTALS

- A. Product Data

Submit manufacturer's information on the non-shrink grout, including mixing and installation instructions for each type of application.

B. Quality Control Submittals

1. Qualifications

Provide proof of Manufacturer and Installer qualifications specified under "Quality Assurance".

1.05 QUALITY ASSURANCE

A. Qualifications

1. Manufacturer: Company specializing in the production of grout shall have a minimum of five years experience.
2. Installer: Company specializing in performing the work of this section shall have three years minimum experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Materials shall be delivered in manufacturer's sealed and undamaged packaging. Each package shall contain clear and legible labels that meet requirements of local, state and federal regulations identifying manufacturer's name, product name, quantity of material, and batch number.
- B. Protect material from the elements and from other damage at site.
- C. Replace and pay for material and work damaged to the satisfaction of Engineer.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply grout at temperatures below 40°F or higher than 90°F. Follow manufacturer's recommendations for placement temperatures, which is typically at an optimum range of 50°F to 80°F. Provide hot and cold weather procedures at other temperatures as per ACI 305R and ACI 306R respectively.

PART 2 - PRODUCTS**2.01 MANUFACTURERS**

A. Grout

1. Sika Corp., Lyndhurst, NJ 07071
2. Euclid Chemical Company, Cleveland, OH 44110

3. Five Star Products, Inc., Fairfield, CT 06824
4. HiltiInc., Tulsa, OK 74146
5. Mapei, Deerfield Beach, FL 33442
6. Kaufman Products Inc. Baltimore, MD 21226

2.02 MATERIALS

A. Grout

1. Grout shall be non-shrink, non-metallic, cement based material meeting ASTM 1107 and CRD C-621 with the following characteristics:
 - a. Minimum compressive strength of 6000 psi @ 28 days when testing in accordance with ASTM C109 or CRD C-621.
 - b. Slight positive expansion when tested in accordance with CRD C-621 or ASTM C1090.
2. Products:
 - a. SikaGrout 212 by Sika Corp.
 - b. Dry Pack Grout and NS Grout by Euclid Chemical Company
 - c. "Five Star Grout" by U.S. Grout Corp.
 - d. Multipurpose Grout by Hilti, Inc.
 - e. Precision Grout by Hilti, Inc.
 - f. Planigrout 712 by Mapei
 - g. SureGrout and Suregrout 106 by Kaufman Products Inc.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine all adjoining work on which this Work is in anyway dependent for proper installation and workmanship. Report to Engineer any condition that prevents the performance of this Work.
- B. Repair surfaces to receive grout as approved by the Engineer of Record to ensure that the maximum allowed thickness of material is not exceeded.

3.02 SURFACE PREPARATION

- A. Concrete surface shall be free of all loose material.
- B. All metal components shall be clean and free of corrosion.
- C. Surfaces and metal components shall be free of oil, grease, loose paint, corrosive deposits, dust, laitance and other contaminants.
- D. Sleeves and holes shall be clean of water, dust and debris.

3.03 APPLICATION

- A. Perform all grouting in accordance with the recommendations of ACI, CSI, and the grout manufacturer's published specifications for site preparation, product mixing, and placing. For grouting in weather below 50°F, contact manufacturer for cold weather instructions.
- B. Arrange with the manufacturer of the grout for the services of a qualified field representative to instruct the work crews in the mixing of components, preparation of surfaces, technique of installation, and inspection procedures.
- C. Place grout at a no more than "flowable" consistency as required by the application, carefully using the manufacturer's recommended water content for Dry Pack, Plastic or Flowable consistencies.
- D. Locations
 - 1. Provide grout 1" thick minimum, 2" thick maximum, unless otherwise specified, under column base plates and beam bearing plates. Work grout under plates to provide full and even bearing. Grouting is to be done prior to placement of any concrete on the structure.
 - 2. Provide grout for grouting fence posts into sleeves. Grout is to be placed at a "plastic" consistency and crowned at the post to shed water away from the post onto the adjoining concrete surface.
 - 3. Provide grout for grouting bars in concrete and for "Dry Packing". Follow manufacturer's procedure for mixing and installation.
 - 4. Provide grout under equipment bases.

5. Provide for grouting in pipes entering precast units.

6. Provide grout wherever else it is indicated on Drawings or Specifications.

D. Follow manufacturer's instructions for curing.

3.04 PROTECTION AND CLEANING

A. Clean all adjacent area of excess material and clean all floors and walls of powder and droppings.

3.05 FIELD QUALITY CONTROL

A. Engineer's Testing Laboratory will inspect the grouting procedure and take cube specimens to test compressive strength.

B. Engineer will inspect and reject any that are of inadequate strength or contains cracks or other defects. These areas shall be fixed at contractor's expense.

C. Engage the services of the material manufacturer's representative to instruct in the proper mixing and usage of the material to ensure the grout is placed at the correct consistency and manner.

END OF SECTION

08/24/2020

NEUBERGER MUSEUM SOUTH COURTYARD

LIST OF SUBMITTALS

<u>SUBMITTAL</u>	<u>DATE SUBMITTED</u>	<u>DATE APPROVED</u>
Product Data:	_____	_____
1. Grout		
Qualifications	_____	_____
1. Manufacturer		
2. Installer		

* * *

SECTION 04200
UNIT MASONRY

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. This Section includes, but is not limited to, the following:

Provide brick masonry, cavity wall insulation, and other masonry Work as specified herein, as shown on the Drawings, and as needed for a complete and proper installation.

- B. Related Work includes, but is not limited to, Division 7 Section "Fluid-Applied Membrane Air Barrier, Vapor Retarding", for air barrier system at masonry cavity walls.

1.02 WORK FURNISHED BUT NOT INSTALLED UNDER THIS SECTION

- A. Dovetail anchor slots

1.03 WORK INSTALLED BUT NOT FURNISHED UNDER THIS SECTION

- A. Compressible filler in masonry
joints..... Section 07900

1.04 SUSTAINABILITY REQUIREMENTS
(NOT USED)

1.05 DESIGN REQUIREMENTS

- A. No air-entraining admixtures or material containing such shall be permitted in the mortar. Also, no anti-freeze compounds, calcium chloride, or other compounds, unless expressly permitted otherwise, shall be permitted in the mortar.

- B. Mortar types to be used at the following locations, unless otherwise stated:

1. Face brick, concrete masonry units - Type N unless otherwise noted.

1.06 REFERENCES

References and industry standards listed in this Section are applicable to the Work. Unless more restrictive criteria or differing requirements are explicitly stated in the Specifications, or mandated by governing codes or regulations, the recommendations, suggestions, and requirements described in the referenced standards shall be deemed mandatory and applicable to the Work.

A. American Society of Testing and Materials (ASTM) standards, latest editions.

- A951 Standard Specification for Steel Wire for Joint Reinforcement.
- C33 Standard Specification for Concrete Aggregates.
- C43 Standard Definitions of Terms Relating to Structural Clay Products.
- C67 Standard Methods of Sampling and Testing Brick and Structural Clay Tile.
- C109 Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-inch or 50 MM Cube Specimens).
- C126 Standard Specification for Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units.
- C129 Standard Specification for Non-Load-Bearing Concrete Masonry Units.
- C140 Standard Methods of Sampling and Testing Concrete Masonry Units.
- C144 Standard Specifications for Aggregate for Masonry Mortar.
- C150 Standard Specification for Portland Cement.
- C207 Standard Specification for Hydrated Lime for Masonry Purposes.

- C216 Standard Specification for Facing Brick (Solid Masonry Units made from Clay or Shale).
- C270 Standard Specification for Mortar for Unit Masonry.
- C404 Standard Specifications for Aggregates for Masonry Grout.
- C476 Standard Specification for Grout for Reinforced and Nonreinforced Masonry.
- C578 Standard Specification for Preformed, Cellular Polystyrene Thermal Insulation.
- C595 Standard Specifications for Blended Hydraulic Cements.
- C652 Standard Specification for Hollow Brick
- C979 Standard Specification for Pigments for Integrally Colored Concrete.
- C1019 Method of Sampling and Testing Grout
- C1405 Standard Specification for single-fired Glazed Brick

B. Industry Standards.

1. "Standard for Concrete Masonry Units" - UL 618-Underwriters Laboratory.
2. American Welding Society - AWS D1.4 - Structural Welding Code - Reinforcing Steel

1.07 SUBMITTALS

A. Submittals for Specified Items

1. For items that are specified herein by manufacturer's name and model number, submit a Product Schedule indicating the item description, manufacturer name, model number and any other identifying nomenclature. The Schedule will be accepted by the EOR for record purposes only.

Product Data and Samples are not required for such specified items except for selection of color or similar purpose. When submitting items that are not specified herein by manufacturer's name and model number, provide complete Product Data and Samples for each item for review and approval.

B. Product Data

Submit Product Data to show compliance with specified requirements.

1. Submit complete data for masonry units. Laboratory test reports for brick shall be no more than two years old. Submit a list indicating the maximum dry weight of each type and size of CMU to be used in the project.
2. Submit complete data for reinforcement and ties, of each type.
3. Portland Cement: Brand and manufacturer's name.
4. Lime: Brand and manufacturer's name.
5. Mortar Pigments: Brand and manufacturer's name.
6. Packaged Products: Manufacturer's specifications and application instructions.
7. Sand: Location of pit, name of owner, and previous test data.
8. Masonry reinforcement, anchors
9. Insulation
10. Insulation adhesive
11. Masonry cleaner, including specific masonry manufacturer's recommended cleaning procedure for the product selected.

C. Samples

1. Submit as many face brick of each color to show the entire color range and in quantities sufficient to determine percentages. Submit samples of face brick of special sizes and shapes, including factory fabricated corners and lip brick.

D. Shop Drawings

1. Submit drawings for brick of special shapes.
2. Submit plans indicating locations of control joints in interior partitions.

E. Quality Control Submittals

1. Schedule of Uses: By mortar type.
2. Certificates
 - a. Submit the lightweight CMU producer's and GCB manufacturer's certificate stating that the minimum equivalent thickness and mix design are in conformance with UL 618 for the indicated fire rating.
 - b. Submit lightweight CMU producer's certificate stating aggregate used is 100% lightweight, expanded shale, clay, or slate (rotary kiln) aggregate, in accordance with ASTM C331. To provide the required recycled content, it is acceptable to provide up to 20% lightweight recycled aggregate that will maintain the same fire resistance equivalent thickness of 100% expanded shale, clay, or slate without a decrease in block strength.
 - c. Furnish notarized Building Department affidavit from masonry manufacturer (Form 10H) stating materials delivered to project comply with the Specification requirements.
 - d. Furnish notarized Building Department affidavit from masonry supplier (Form 10J) stating materials delivered to project comply with the Specification requirements.

- e. Provide certification that insulation used in Project was not produced with, nor contains, any of the U.S. EPA regulated CFC compounds that are listed in the Montreal Protocol.

F. Mockups

In accordance with Article titled Quality Assurance.

1.08 QUALITY ASSURANCE

A. Qualifications

1. Company specializing in the Work of this Section shall have a minimum of 3 years experience and at least three projects with similar quantity of materials.
2. Masonry foreman shall have the following minimum experience:
 - a. Five years of practical experience as determined by Authority's Representative via a letter from the Contractor listing the projects and experience of the foreman.
 - b. Certificate of journeyman brick layer or PCC.
 - c. The construction of five masonry related projects of the same type of construction (e.g. brick, stone, terra cotta, etc.) where the individual served as a field foreman. List project in qualification submittal.
 - d. Must be able to read and communicate in English and be able to read construction drawings and specifications.
3. **3.** Adhesive Anchor Installer: Installer for adhesive anchors installed in a horizontal or upwardly inclined position supporting sustained tension loads shall be certified per ACI Appendix D9.2.2 as per Section BC 1912 of the 2014 NYC Building Code.

B. Regulatory Requirements

1. Building Code: Work of this Section shall conform to all requirements of the NYC Building Code and all applicable regulations of governmental authorities having jurisdiction, including safety, health, noise, and anti-pollution regulations. Where more severe requirements than those contained in the Building Code are given in this Section, the requirements of this Section shall govern.
2. UL 618: Fire rating of CMU and assemblies shall conform to the requirements UL 618.
3. NYC Board of Standards and Appeals (BSA) approvals, or
4. NYC Materials and Equipment Acceptance (MEA) approvals.

C. Controlled Inspection and Certification

Reinforced and unreinforced masonry shall conform to the material acceptance, certification and inspection requirements of Article 7, Chapter 1 - Subchapter 1 and Tables 10-1 and 10-2 of the Building Code (Title 27).

D. Mockups

1. General
 - a. Construct sample panels to conform with appearance and workmanship as indicated in the Drawings and Specifications.
 - b. Use approved sample panels for a standard of comparison for the Project. All Work shall conform in workmanship and appearance to that of the approved samples.
 - c. If not approved, remove panel and install new panel (or panels) repeating the process until panel is approved.
 - d. Do not proceed with Work until panels are approved in writing by the Project Architect.

Do not build Sample Panel "B" until Sample Panel "A" has been approved.

- e. Approved Panel "B" may remain in place as part of the Project.
- 2. Erect sample panels where directed, for approval by the Project Architect.
 - a. Face Brick: Provide sample Panel "A", 4'x 4' panel illustrating mortar, bonding, jointing, course heights, and ties to back-up units. Lay up Panel "A" from brick furnished for this purpose. Provide a second sample Panel "B", incorporated into the building, from brick delivered for the job, Sample Panel "B" shall be 4'x8' minimum.

1.09 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to project site in undamaged condition per ASTM guidelines. Store in an enclosed location or off the ground with waterproof covering as needed to protect all materials from moisture, contaminants, corrosion, deleterious temperature changes, and other harmful conditions.
- B. Packaged Products
 - 1. Deliver materials to the site in manufacturer's original, sealed containers. Do not deliver materials which have exceeded shelf life limitation set forth by the manufacturer. Material containers shall bear the manufacturer's label indicating manufacturer's name, trade name of product, lot number, shelf life of product, and mix ratio (if applicable). This includes individual bags of pre-bagged mortar mixes.
 - 2. Comply with manufacturer's printed instructions for storing and protecting materials.

1.10 ENVIRONMENTAL REQUIREMENTS

- A. Construction Requirements

Salt or other chemicals for lowering the freezing temperature of the mortar shall not be used.

Masonry units, mortar, and grout shall be preconditioned and masonry protected for the following cold weather conditions:

1. Air temperature 40°F to 32°F:
 - a. Heat mixing water or sand to minimum of 70°F and to maximum of 160°F.
2. Air temperature 32°F to 25°F:
 - a. Heat mixing water and sand to minimum of 70°F and to maximum of 160°F.
 - b. Provide heat source to maintain a minimum air temperature 32°F on each side of masonry construction.
3. Air temperature 25°F to 20°F:
 - a. Heat mixing water and sand to minimum of 70°F and to maximum of 160°F.
 - b. Provide heat source to maintain a minimum air temperature of 32° on each side of masonry construction.
 - c. Provide wind breaks for wind in excess of 15 miles per hour.
4. Air temperature 20°F and Below:
 - a. Heat mixing water and sand to a minimum of 70°F and to maximum of 160°F.
 - b. Provide enclosures and heat source to maintain a minimum air temperature of 32°F on each side of masonry construction during construction.
 - c. Keep temperature of masonry units a minimum of 30°F when laid.

B. Protection Requirements

1. Mean Daily Air Temperature of 40°F to 32°F:
 - a. Protect masonry from rain or snow for 24 hours.
2. Mean Daily Air Temperature of 32°F and Below:
 - a. An air temperature of at least 32°F shall be maintained on each side of masonry for a period of at least 48 hours if Type M or S mortar is used and at least 72 hours if Type N or O mortar is used.

C. Wetting of Clay Masonry Units

For units with initial rates of absorption that require their wetting before laying, follow the following cold weather requirements:

1. If surface temperatures are above 32°F, use water heated to about 70°F.
2. If surface temperatures are below 32°F, use water heated to about 120°F.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Reinforcement and Ties

1. Hohmann & Barnard, Inc., Hauppauge, N.Y.
2. Dur-O-Wall, Arlington Heights, IL.

C. Insulation

1. Dow Chemical Co., Midland, Michigan.
2. UC Industries Inc., Parsippany, NJ

D. Insulation Adhesive

Adhesives, mastics, compatible with air barrier systems and other contacted materials:

1. Henry Company

2. W. R. Grace & Co.

3. Rubber Polymer Corporation

E. Mortar Coloring

1. "SGS" Mortar Colors, Solomon Grind-Chem Services, Inc.

2. "True Tone Mortar Colors", Davis Colors, Rockwood Industries, Inc.

3. "Flamingo Colors ", Lehigh Corporation.

L. Mortar Additives

1. ACM Chemistries, Norcross, GA 30010

2. Master Builders, Inc., Cleveland, OH 44122

3. Sika Corp., Lyndhurst, NJ 07071

M. Mortar Dropping Collection Net

1. Advanced Building Products Inc., Springvale, Maine.

2. Mortar Net USA, Ltd., Gary, Indiana

N. Mortar Weeps

1. Mortar Net USA, Ltd., Gary, Indiana

2.02 FACE BRICK DISTRIBUTORS

A. Consolidated Brick and Building Supplies, Inc., N.Y., N.Y.

B. Tri-State Brick & Building Materials, Inc. N.Y., N.Y.

C. Belden Brick Sales & Service, Inc., N.Y., N.Y.

D. Glen-Gery Corp. Somerville, N. J.

2.03 MATERIALS

A. Base Materials

1. Portland Cement
 - a. Type I ASTM C150
 - b. Type II (for manholes) ASTM C150
2. Slag cement (only use for Manufacture of concrete block) ASTM C989, Grade 100 or 120.
3. Sand for Mortar Mix ASTM C144
Sand shall be washed natural sand with 100% passing the No. 8 sieve.
Mix shall not contain chlorides.
4. Aggregate for CMU - 100% light-weight aggregate, expanded clay shale or slate (rotary kiln process). To meet recycled content, lightweight recycled aggregate of up to 20% of total material that will maintain the same fire resistance equivalent thickness of 100% expanded shale, clay, or slate without a decrease in block strength may be used. ASTM C331
5. Aggregate for Masonry Grout ASTM C404
6. Hydrated Lime ASTM C207
Type "S"
7. Water - Clean, potable New York City water free of injurious materials.
8. Mortar Coloring: Provide pure mineral pigments, natural and synthetic iron oxides, and chromium oxides compounded for use in mortar mixes. Material shall conform to ASTM C979. Coloring shall not contain alkalyde salts or chlorides. No liquid colorants shall be permitted.
9. Mortar additive for use in setting of exterior brick coping caps, granite steps, and other such elements with horizontal surfaces exposed to weather. Use additive for such elements within 10 vertical feet of grade or walking areas.

- a. Additive shall be non-toxic, non-flammable, and non-hazardous during storage, mixing, application, and when cured.
 - b. Finished mortar shall be resistant to urine, dilute acid, dilute alkali, sugar, brine, and calcium chlorides and other salts used in de-icing salts.
10. Premixed sand and lime for mortar mixes is not permitted. The use of batched material by Spec-Mix and factory-packaged cement-lime-pigment by major mortar manufacturers is permitted. Each individual bag of material shall have the manufacturer's label identifying the mortar type.

B. Brick

1. Utility Modular Face Brick: Clay or shale, ASTM C216 (solid), grade SW, type FBX, or ASTM C652 (cored), grade SW, type HBX of size 3-5/8" x 3-5/8" x 11-5/8" (nominal dimensions 4"x4"x12"). Colors and textures as selected by the Project Architect. Special sizes and shapes as shown on the Drawings or specified herein. Brick shall be manufactured to special sizes and shapes, not cut in the field. Glazed units are not permitted. Brick shall be tested for efflorescence in accordance with ASTM Test Methods C67 and the rating shall be "Not Effloresced".
 - a. Lipped brick, such as are used above relieving angles and lintels, shall be manufactured with the lip portion having dimensions not less than 5/8" high and 3/4" deep. Provide brick with larger lip dimensions when recommended by brick manufacturer. When recommended by the manufacturer, lipped brick may be cut to the required dimensions from solid brick in the factory, provided that cuts are carefully made to a 90 degree interior angle and do not extend past this angle.

C. Joint Reinforcement and Ties

1. Material

- a. Reinforcement and Ties for Exterior Walls:
Formed from stainless steel, 18-8, type 304.
 - 1) Sheet steel: (No. 2B Finish), cold-rolled, annealed, ASTM A240.
 - 2) Wire steel: ASTM A951.
 - b. Reinforcement and Ties for Interior Walls:
ASTM A951, hot-dip galvanized (after fabrication), ASTM A153.
 - c. Provide factory-fabricated corners and tees at corners and intersecting walls for continuous type reinforcing, such as truss type, except as indicated otherwise.
 - d. Width of truss and mesh reinforcement to place edge of reinforcement 1" from each face of masonry.
2. Manufactured Units. Units are listed by Hohmann & Barnard model number in order to establish a standard for comparison. Deliver all units with manufacturer's printed installation instructions.
- a. Exterior Walls - Brick with Concrete Backup:

Provide #315-BT Flexible Dovetail Brick Tie, dovetail end to be 16 gage minimum, 1" wide. Provide Byna-Tie 3/16" in diameter, of length to provide 2" embedment in brick. Anchor slot shall be #305 Series Dovetail Anchor Slots. Provide multi-grooved rigid PVC Seismiclips, #187-A, for seismic interlock system. Provide 3/16" diameter Type 304 stainless steel continuous joint reinforcement wire.
 - b. Exterior Walls - Brick with Concrete Masonry Unit (CMU) Backup:
 - 1) #180 S.I.S. Dub'l Loop Lok Truss Seismicclip Interlock System consisting of the following components:
 - a) #180 Type 304 stainless steel
Dub'l Loop Lok truss type

horizontal joint reinforcement
with welded loops. Truss 9 gauge.
Loops 3/16" diameter.

- b) 3/16" diameter Type 304 stainless steel Byna-Ties. Provide Box type or Bent-Box type as required for coursing. Provide sizes required for 2" embedment in brick.
 - c) Impact resistant, multi-grooved rigid PVC Seismiclips, #187-A.
 - d) 3/16" diameter Type 304 stainless steel continuous wire.
 - e) At walls with cavity insulation provide Loop-Lok Washers to mechanically lock rigid insulation in place.
- 2) #355L Column Anchor, 1/4" thick by 1-1/4" wide, twisted, with a slotted opening for lock stud. Provide a straight positive lock stud, 3/8" diam., threaded, with nut and washers for anchoring masonry to steel column when masonry is parallel to column flange. Length as required for conditions.
 - 3) #353L Column Anchor, 1/4" thick by 1-1/4" wide, twisted, with a slotted opening for lock bolt. Provide a bent positive lock stud, 3/8" diam., threaded, with nut and washers, for anchoring masonry to steel column when masonry is perpendicular to column flange. Length as required for conditions.
 - 4) Juncture of exterior back-up wall with interior block partition: #MWT, 1/2" square by 16 gage, of proper width for wall thickness
 - 5) Concrete block to steel spandrel: #360 Gripstay Channel with # 365 Gripstay Anchor, 12 gage. Weld channel to steel

spandrel. Length as required for conditions.

- c. Exterior Brick Walls/Parapet Walls (Multiwythe): LOX-ALL #120 truss, 9-gage, of proper width for wall thickness.
- d. Expansion and Control joints: "Slip-set stabilizer.
- i. Exterior Brick with Steel Back-up: #362 Gripstay Channel, 12 gage welded to steel, with #315-BT Flexible Dovetail Brick Tie, dovetail end to be 16 gage minimum, 1" wide. Provide Byna-Tie 3/16" in diameter, of length to provide 2" embedment in brick. Provide multi-grooved rigid PVC Seismiclips, #187-A, for seismic interlock system. Provide 3/16" diameter Type 304 stainless steel continuous joint reinforcement wire.

I. Miscellaneous Accessories

- 1. Weeps: High Density polyester, polypropylene, or polyethylene woven mesh, 90% open, full height of adjacent brick x full width of joint. Recessed 1/4" from face of brick, and extending to back of brick. Color to be selected by Architect from manufacturer's standard colors.
 - a. "Weep Vent" by Mortar Net
- 2. Mortar Collection/Deflection Device: High density polyethylene, polyester, or polypropylene open woven mesh of width to fill entire cavity after installation of the insulation. Provide double layer of material to ensure cavity is filled. Mesh shall be installed to create an up and down effect.
 - a. "Mortar Break" or "Mortar Break II" by Advanced Building Products Inc.
 - b. "Mortar Net" by Mortar Net, Inc.

K. Insulation

1. Extruded polystyrene, rigid, ASTM C578 Type X with R-value (aged) of 5.0/inch at 75°F mean temperature when tested in accordance with ASTM C518.
 - a. Minimum compressive strength: 15 psi in vertical direction when tested in accordance with ASTM D1621.
 - b. Maximum water absorption: 0.1% by volume when tested in accordance with ASTM C272.
 - c. Surface Burning Characteristics in accordance with UL tests): Flame Spread - 5, Smoke Developed - 165.
2. Product shall not be produced with or contain any of the U.S. EPA regulated CFC compounds which are listed in the Montreal Protocol.
3. Provide Styrofoam Brand Cavity-mate by Dow Chemical.

Panel size: 16" x 96". Thickness: as shown on the Drawings. Provide each panel of full thickness indicated.
4. Adhesive: Type recommended by insulation manufacturer and air barrier manufacturer. Compatible with insulation and substrate.

L. Masonry Cleaner

Masonry cleaner capable of cleaning masonry without degrading the masonry material or mortar. Cleaner must be approved by the masonry manufacturer.

- M. Electrodes for Welding
Electrodes for welding stainless steel to carbon steel: E309-16.

2.04 MIXES

A. Mortar (basic)

Shall conform to ASTM C270 and BIA M1-88. Provide Type I Portland cement (Type II Portland Cement when used for manholes). Masonry cement shall not be used as a substitute. Preconstruction testing with the proportions carefully monitored is to be used to establish the upper end of the strength range, which should generally be near the minimum strength of the next higher strength mortar.

1. Type M: 1 part gray cement, 1/4 part lime, 3³/₄ parts dry sand. Minimum compressive strength shall be 2500 psi at 28 days.
2. Type S: 1 part gray cement, 1/2 part lime, 4¹/₂ parts dry sand. Minimum compressive strength shall be 1800 psi at 28 days.
3. Type N: 1 part gray cement, 1 part lime, 6 parts dry sand. Minimum compressive strength shall be 750 psi at 28 days.
4. Type N "White": 1 part white cement, 1 part lime, 6 parts dry white sand. Minimum compressive strength shall be 750 psi at 28 days.

B. Colored Mortar

Proportion mortar coloring with other mortar mix ingredients to obtain desired color, as approved by the Project Architect. Provide white cement instead of gray cement where required to meet the desired color. Do not exceed 1 part pigment to 10 parts cement, by weight. If consistent color cannot be obtained, provide as a minimum premixed Portland cement and coloring from major cement manufacturer.

C. Grout for Masonry

1. Mixes

- a. Fine Grout: 1 part Portland Cement, 0-1/10 part Hydrated Lime, 2¹/₄-3 times the sum of volumes of cementitious materials of fine aggregate (Proportions by volumes).
- b. Coarse Grout: 1 part Portland Cement, 0-1/10 part Hydrated Lime, 2¹/₄-3 times the sum of volumes of cementitious materials of fine

aggregate, and 1-2 times the sum of the volumes of cementitious materials of coarse aggregate (Portions by volume).

- c. Aggregates for Mixes: ASTM C 404.
- d. Slump: 8" minimum, 11" maximum.
- e. Compressive Strength: At least equal to the strength of the masonry, and not less than 2000 psi as determined by ASTM C1019 - Method of Sampling and Testing Grout.

2. Location

- a. For spaces less than 2" in any direction, use fine grout.
- b. For spaces 2" and more in any direction, use coarse grout.

2.05 SOURCE QUALITY CONTROL

A. The EOR will assign a Licensed Professional Engineer designated for Controlled Inspection who will inspect the masonry construction under the requirements of paragraphs 27-132 and 27-602, Tables 10-1 and 10-2 (Reinforced and Unreinforced Masonry), and R&R 9/29/83 (Appendix A) (Curtain Wall Construction) of the Building Code.

B. Preconstruction Testing

- 1. Preconstruction testing of mortar properties will be done in accordance with ASTM C780. The Contractor shall assist the EOR's laboratory by any means necessary and shall supply the approved base materials to the laboratory for testing.
- 2. Compressive strength tests of field mixed mortar are to be done during construction of the mock-up, or earlier if desired by the Contractor, to provide a benchmark for the strength based on actual field conditions and proportioning of the mortar. If mortar strengths are too high, proportions may be required to be modified if directed by the Architect or Engineer of Record.

3. Preconstruction testing of masonry grout properties will be done in accordance with ASTM C1019. The Contractor shall assist the EOR's laboratory by any means necessary and shall supply the approved base materials to the laboratory for testing and for making the molds.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine all adjoining Work on which this Work is in anyway dependent for proper installation and workmanship. Report to the EOR any conditions that prevent the performance of this Work.

3.02 PROTECTION

- A. Cover top of masonry wall with waterproof plastic membrane at the end of the work period, when work is not in progress, and at other times when Work needs to be protected from rain and other precipitation. Extend cover down sides as needed to thoroughly protect the Work.
- B. During cold weather, do not use wet masonry units and frozen masonry units.
- C. Do not use frozen materials or lay masonry on frozen materials; remove frozen materials from wall. Refer to Part 1 of this Section, "Environmental Requirements" for temperature restrictions.
- D. Remove excess mortar from walls as soon after laying units as practicable to prevent staining and to facilitate cleaning of wall.
- E. Brace walls as needed until sufficiently set, or until intersecting walls provide lateral support.
- F. Prevent masonry cleaners from coming in contact with adjacent glass, metal, and other masonry surfaces such as cast stone. Protect adjoining glass and metal surfaces and all other adjacent materials and property from masonry operations.

3.03 MIXING PROCEDURES FOR MORTAR

- A. Measure material by volume or equivalent weight. In measuring by volume, measure ingredients by container. Do not measure by shovel.
- B. Mix ingredients in a clean mechanical mixer for a minimum of 3 minutes, maximum of 5, with the minimum amount of water to produce a workable consistency.
- C. Mortar that has stiffened because of evaporation of water from the mortar may be retempered only once, and only during the first hour of placement to restore the required consistency. Mortar shall be used within 2¹/₂ hours after initial mixing. Limit amount of mortar batched at one time to stay within these requirements.

3.04 LAYING - GENERAL

- A. Lay units true to dimensions, plumb and level, square; exterior and interior bond work in bond indicated on the Drawings or specified herein. Lay courses level with joints uniform; vertical joints spaced properly for plumb alignment. Provide masonry lines, plumb bobs, and utilize a 4 foot level to maintain wall within ¼" of theoretical dimensions.
- B. Fill bed joints and cross joints solid with mortar. Furrowed bed and spotted cross joints not permitted. For hollow block units, apply mortar full length on all bearing surfaces.
- C. "Tooth" temporary openings in exposed masonry walls, to maintain proper bond when closed.
- D. Tool joints in exposed masonry with a concave jointer to provide a neat, smooth, compacted surface.
- E. Rough cut joints in masonry that are to receive plaster, to provide good plaster bond.
- F. Remove excess mortar, leaving masonry surface clean.
- G. Cut brick and concrete masonry units with circular masonry wet saw.

- H. Build-in miscellaneous metal inserts and other items not furnished under this Section but specified to be installed under this Section.
- I. Lay brick in bond patterns as shown on the Drawings. If bond is not indicated on Drawings, use running bond, all stretchers.

3.05 FACE BRICK WORK

- A. Lay face brick from scaffolding erected on face brick side of wall. Do not build or attach scaffolding into the brick face.
- B. Use face brick for exterior walls, chimneys, bulkheads, and backs of parapets, except where concrete parapets are indicated.
- C. Use 100% solid brick over exterior relieving angles/lintels or other brick projections on exterior face of building. (Use of solid brick with cores is acceptable if cores are filled solid with mortar and the cores are not visible to view.)
- D. Wet clay and shale brick which have initial rates of absorption of more than 30 grams for each 30 square inches per minute (ASTM C67). Wet brick sufficiently to prevent excess absorption of mortar moisture, but keep surface dry enough to obtain bond.
- E. Lay with shoved joints, avoiding dry contacts between brick.
- F. Lay not more than 5 courses before setting backup units.
- G. Clean loose mortar from wall as brick is laid.
- H. Provide weep holes in the head joints of the first two courses of masonry above wall flashing (space at 24" o.c. linear in each course, staggering the first course with the second course). Provide weep holes at other locations as denoted on the Drawings.
- J. Construct 1/2" wide vertical expansion joints at locations indicated on the drawings. If not indicated, provide at approximately 25'-0" o.c. and within 5'-4" from the corners.

3.06 CAVITY WALL

- A. Keep the cavity free of mortar droppings. Do not permit mortar to collect on ties and bridge across the cavity.
- B. Provide continuous row of mortar mesh at base of wall, over relieving angles and lintels, at all locations with flashing and weep holes, and as indicated, directly on flashing. Flashing shall extend above top of mortar mesh except where indicated otherwise. Trim mortar mesh to size indicated on the Drawings.
- C. In laying up the wall, keep the cavity clean of mortar droppings by temporarily placing a wood strip 2" high and full width of cavity on each succeeding course of anchors as they are installed, removing the strip, cleaning it off, and reinserting it on the next course of anchors before laying up the next portion of wall. Do not leave any wood strips in the cavity.
- D. Prepare CMU backup for application of fluid applied membrane air/vapor barrier specified in Division 7. Mortar joints shall be completely filled and struck flush with unit masonry. Leave surfaces clean, and without projections, voids, cracks, contaminants, or other irregularities that would hinder proper application of the membrane. Clean mortar droppings from surfaces and brick ties.
- E. Provide reinforcement between brick and backing.
- F. After the wall has been topped out, inspected and when directed by the Project Architect, flood the cavity with water to verify that all weeps drain freely and no water passes the backing.

3.07 INSULATION

- A. Prior to installation of cavity insulation verify that:
 - 1. Substrate is properly prepared.
 - 2. Wall is clean.

3. Air barrier membrane provided under Section 07272 has sufficiently cured, if applicable for the membrane system used, as recommended by the membrane manufacturer.

B. Application

1. Install insulation horizontally within cavity space, against concrete block wall and other substrates, butt edges tightly, with vertical joints staggered. Cover wall completely.
2. Adhere insulation using one of the following methods, as recommended in writing by the air barrier manufacturer for the specific air barrier system provided for this Project:

- a. Method A. Use this method for adhesive air/vapor barrier systems.

Embed the insulation into the membrane material and press firmly into place to ensure full contact and adhesion.

- 1) Install the insulation immediately after applying the continuous "Air-Bloc 21" system.
- 2) Adhere insulation to the continuous "Rub-R-Wall Airtight" system, after initial set time of 1 to 2 hours subject to temperature and humidity conditions, while material is still tacky.

- b. Method B. Use this method for air/vapor barrier systems such as Henry Co. "Air-Bloc 32", and W.R. Grace "Perm-A-Barrier Liquid", requiring a separate application of adhesive. Upon completion of the air barrier membrane system, and after a curing period recommended by the membrane manufacturer, apply insulation adhesive in a serpentine pattern over the air barrier membrane using a notched trowel. Immediately after application of the adhesive, or within the time period recommended by the manufacturer, embed insulation board into the

adhesive and press firmly into place to ensure full contact and adhesion over entire area of board. Apply additional adhesive if allowed to skin over.

3. In addition to adhesive attachment of insulation to all substrates, provide an insulation retainer washer at each brick tie.
4. Fabricate insulation panels by means of saw, knife or other sharp tool to fit around obstructions across cavity such as vents, louvers, piping, conduits, and other penetrations. Make insulation continuous, filling all voids. Use largest pieces of insulation possible to minimize joints. Fill cracks with material compatible with insulation, air barrier, and masonry.

3.08 **REINFORCEMENT**

A. General

1. Brick ties: Shall be embedded a minimum of the midpoint of the brick to 2" into brick, exclusive of the seismic clip and wire. Wire shall be $\frac{3}{4}$ " back from the face of the joint.
2. Block ties: Shall be embedded a minimum of $\frac{2}{3}$ the block width

B. Exterior Walls - Brick with concrete back-up:

Provide ties at 16" o.c. vertical spacing, 24" o.c. horizontal spacing.

C. Exterior Walls - Brick with concrete masonry unit (CMU) back up:

1. Provide truss/ladder type horizontal joint reinforcement/box tie system between block and veneer brick, continuous at alternate block courses (16" o.c.), with loops spaced at 16" o.c. horizontally, maximum. Provide seismic interlock system, including seismic clips, and continuous wire. Provide retainer washer at each set of loops to lock insulation in place.

2. Provide ties with interior partitions at 16" o.c.
 4. Provide spandrel anchor to anchor block masonry to steel spandrels. Provide anchors spaced 16" o.c. maximum vertically.
 5. Install reinforcing bars in cells and bond beams at locations and spacing indicated on Drawings.
- D. Exterior Brick Walls (multi-wythe with no cavity):
1. At multi-wythe walls without cavity, provide truss/ladder type joint reinforcement at 16 o.c. vertical spacing.
 2. Install reinforcing bars at locations and spacing indicated on Drawings.
- H. Exterior Walls - Veneer Brick with multi-wythe solid brick back-up:
1. Provide truss type horizontal joint reinforcement/box tie system between multi wythe brick back-up and veneer brick, continuous at 16" o.c., with loops spaced at 16" o.c. horizontally, maximum. Provide seismic interlock system, including seismic clips, and continuous wire. Provide retainer washer at each set of loops to lock insulation in place.
 2. Install reinforcing bars at locations and spacing indicated on Drawings.
- I. Exterior Brick with steel back-up:
- Provide ties at 16" o.c. vertical spacing, 24" o.c. horizontal spacing. Provide seismic interlock system, including seismic clips, and continuous wire.
- K. Expansion joints and control joints
- Install "slip-set" stabilizer at 24" o.c. vertically in all masonry control and expansion joints of masonry partitions, CMU walls, and multi-wythe brick walls/parapets.

- L. Lap ends of adjoining strips of continuous reinforcement 6".
- M. Size (width) of reinforcement as required for 4", 6", 8", 10" partitions.

3.09 FIELD QUALITY CONTROL

- A. The EOR will assign, under the requirements of paragraphs 27-132 and 27-602, Tables 10-1 and 10-2 (Reinforced and Unreinforced Masonry), and R&R 9/29/83 (Appendix A) (Curtain Wall Construction) of the Building Code a Licensed Professional Engineer designated for Controlled Inspection who will inspect the masonry construction.
- B. The Contractor, upon award of the Contract, will receive a signed statement stating that the Engineer designated for Controlled Inspection has assumed the responsibility for masonry inspection and will file all reports as required by the Building Department.
- C. The Engineer will make inspections and any testing deemed necessary. Testing of mortar properties shall be in accordance with ASTM C780. Mortar suspected or tested to be too strong or too weak will be subject to petrographic analysis or other methods deemed necessary by the Engineer of Record and Engineer designated for Controlled inspection. Testing of masonry grout shall be in accordance with ASTM C1019. The Contractor shall pay for all tests if they verify improper work. Inspection are to include, but not be limited to, the following:
 - 1. Proper installation of reinforcement and placement of brick on angles.
 - 2. Proper installation of mortar, including proportioning and mixing. Those mortar properties listed in the Appendix of ASTM C780 are to be tested at the discretion of Engineer designated for Controlled Inspection or the Architect/Engineer of Record Mortar strengths, when tested, will be determined in accordance with ASTM C780 using cubes.
 - 3. Proper installation of weeps, flashing, mortar mesh, cleaning of cavity (if cavity wall construction), etc.

4. For cavity wall construction, all bed and head joints are filled completely. At solid masonry construction, all bed, head, and collar joints are filled completely.
- D. If any results are found to be not in conformance with the applicable ASTM, industry practice, and the Specifications the masonry in question shall be removed and redone.

3.10 CLEANING

- A. Before cleaning masonry walls, examine faces for holes, cracks, and other defects. If corrections cannot be made to provide an appearance acceptable to the Project Architect, replace defective units.
- B. Exterior Masonry
 1. After completion of laying and the completion of other adjacent work liable to soil masonry, clean face work and point all open joints.
 2. Start cleaning operations at top and proceed downward, using solution not detrimental to material or mortar.
 3. Use only masonry cleaners approved by the manufacturer of the specific face brick and follow the brick manufacturer's instruction for use of the product. The use of muriatic acid is not approved.

END OF SECTION

LIST OF SUBMITTALS

<u>SUBMITTAL</u>	<u>DATE SUBMITTED</u>	<u>DATE APPROVED</u>
Product Data:	_____	_____
1. Masonry unit data		
2. Reinforcement, anchors & ties		
4. Portland Cement Mfr & Brand		
5. Lime Mfr & brand		
6. Mortar Pigments Mfr & Brand		
7. Packaged Products: Mfr's specs & application instructions		
8. Sand: Location of pit, Owner's name, & previous test data		
9. Insulation		
10. Insulation adhesive		
11. Masonry cleaner		
Samples:	_____	_____
1. Face Brick		
Shop Drawings:	_____	_____
1. Control joint locations		
Quality Control Submittals:	_____	_____
1. Schedule of Uses (By mortar type)		
2. Certificates		
Notarized Bldg Dept. affidavit re: Mas. Producer, Materials comply (Form 10H)		
Notarized Bldg Dept. affidavit re: Mas. Supplier, Materials comply (Form 10J)		
Certification Polystyrene Insul. mfrd in compliance with Montreal Protocol:		

01/21/2021

NEUBERGER MUSEUM SOUTH COURTYARD

Mockups:

1. Sample panels(B) incorporated
into the project, for Face
Brick.

* * *

SECTION 05121
STRUCTURAL STEEL

PART 1 - GENERAL**1.01 DESCRIPTION OF WORK**

- A. Furnish and erect all stainless steel angles as shown on Drawings.
- B. Provide shop painting and galvanizing as specified.

1.02 RELATED SECTIONS

- A. Grouting.....Section 03610

1.03 SUSTAINABILITY REQUIREMENTS

Not Used

1.04 REFERENCES

References and industry standards listed in this Section are applicable to the Work. Unless more restrictive criteria or differing requirements are explicitly stated in the Specifications, or mandated by governing codes or regulations, the recommendations, suggestions, and requirements described in the referenced standards shall be deemed mandatory and applicable to the Work.

- A. American Society of Testing and Materials (ASTM) standards, latest editions.
- B. "Specification for Structural Steel Buildings" - American Institute of Steel Constructors (AISC 360-05).
- C. American Welding Society (AWS) standards for procedures and materials.
- D. "Code of Standard Practice for Steel Buildings and Bridges" (AISC 303)
- E. Steel Structures Painting Council (SSPC) standards.

1.05 DEFINITIONS

Not Used

1.06 SUBMITTALS

- A. Product Data

Submit manufacturers' specifications for the following products:

1. Primer paint, galvanizing repair paint
2. Stud shear connectors
3. Expansion/adhesive anchors

B. Shop Drawings

1. Failure to submit legible shop drawings will be cause for return without review.
2. Provide a set of shop drawings showing all connections, bolting, welding, and size of material. Shop drawing shall show intended method of reinforcing existing members and making connections to existing steel as developed by the detailer based on conditions and actual dimensions. Shop Drawings for MEP equipment dunnage and access platforms shall not be submitted until after approval of the submitted MEP units. Ensure shop drawings submitted for MEP equipment dunnage and access platforms are coordinated and based on unit approved, which may vary substantially from the Basis of Design. The Contractor shall take into account in their schedule the potential time impact in the sequencing of the steel drawings.
3. Do not order steel in advance of approval of shop drawings, except at own risk.
4. Shop drawings shall be prepared under supervision of and bear the seal of a Professional Engineer licensed in the State of New York. Connections not designed on the Drawings shall be done by the detailer's licensed Engineer. Do not submit unchecked shop drawings. After final approval of all shop drawings, submit a final set sealed and signed by the Professional Engineer.
5. Shop drawings will be checked for size of material and strength of connection by the Engineer of Record, which shall not render the Engineer of Record responsible for any errors in construction dimensions, etc. that have been made in preparation of shop drawings. The Contractor shall assume full responsibility for the correctness of dimensions and fit.
6. After shop drawings are 100% complete and approved and all field changes have been made, submit a set of as-built drawings to the Authority (SUNY Purchase College).

C. Quality Control Submittals

1. Certificates and Affidavits

- a. Furnish bolt manufacturer's test reports, covering physical and chemical tests, for each lot of high strength bolts submitted.
- b. Furnish steel manufacturer's certificate certifying welders employed on the Work are current with their AWS qualifications (including having their required maintenance forms from their employer) and for work performed in the field are NYC licensed welders as per §28-407.1 of the Administrative Code.
- c. Furnish complete listing of ASTM's of materials listed in Part 2 of this Section and certification that materials supplied meet those listed.
- d. For mechanical and adhesive anchors installed in concrete, submit ICC certification for use in cracked concrete.

2. Contractor Qualifications

Provide proof of Fabricator, Erector, Adhesive Anchor Installer and Zinc Metallizer qualifications specified under "Quality Assurance".

- a. Provide proof of Zinc Metallizer's qualifications specified under "Quality Assurance"; certification of qualifications meeting Military Standard by one of the following:
 - 1) A branch of the U.S. Dept. of Defense (DoD), or
 - 2) A company certified by U.S. Dept. of Defense; submit DoD certification for this company.
 - 3) The Society for Protective Coatings (SSPC).

D. Test Reports

Submit test reports for zinc metallizing and epoxy coating system as specified herein, paragraph titled "Galvanizing by the Zinc Metallizing Process".

E. Sustainability Submittals

1. Recycled Content

- a. Submit documentation of recycled content of structural steel; product data or manufacturer's statement as applicable.

1.07 QUALITY ASSURANCE

A. Qualifications

1. Fabricator: Company specializing in the fabrication of steel products to be used in this Contract shall have a minimum of 3 years experience.
2. Erector: Company specializing in performing the Work of this Section shall have a minimum of three years experience and have done at least three projects with similar quantity of material.
3. Adhesive Anchor Installer: Installer for adhesive anchors installed in a horizontal or upwardly inclined position supporting sustained tension loads shall be certified per ACI Appendix D9.2.2 as per Section BC 1912 of the 2014 NYC Building Code.

B. Regulatory Requirements

1. Building Code: Work of this Section shall conform to all requirements of the NYC Building Code and all applicable regulations of governmental authorities having jurisdiction, including safety, health, noise, and anti-pollution regulations. Where more severe requirements than those contained in the Building Code are given in this Section, the requirements of this Section shall govern.
2. New York City Board of Standards and Appeals (BSA): Rules for Arc and Gas Welding and Oxygen Cutting and Steel Covering the Specifications for Design, Fabrication, and Inspection of Arc and Gas Welded Steel Structures and Qualification of Welders and Supervisors.
3. Industry Standards: Standards specified in Article 1.04 apply to Work of this Section. Where more severe requirements than those contained in the Standards are given in this Section or the Building Code, requirements of this Section or the Building Code shall govern.
4. Recommendations or suggestions in the codes and references listed in this Article and under

"References" shall be deemed to be mandatory unless they are in violation of the Building Code.

C. Certifications

1. Structural steel shall conform to the material acceptance, certification, and inspection requirements of Section BC 1701.
2. Qualify welding processes and welding operators in accordance with AWS B2.1.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to the site at such intervals as to insure uninterrupted progress of Work.
- B. Deliver anchor bolts and other anchorage devices, which are to be embedded in cast-in-place concrete or masonry, in ample time so as not to delay Work.
- C. Store materials to permit easy access for inspection and identification. Store material off the ground and protect from the weather and contamination.

1.09 FIELD MEASUREMENTS

- A. Take field measurements as required by Drawings. Where possible, take field measurements of existing conditions prior to fabrication. Verify that field measurements are the same as those shown on Drawings and shop drawings. Report all deviations to the Authority (SUNY Purchase College) in writing.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Stud Shear Connectors
 1. Nelson Stud Welding Co.
 2. Tru-Weld/Tru-Fit Products Corporation
 3. Hilti, Inc.
- B. Expansion/Screw/Adhesive Anchors, Fasteners
 1. Hilti, Inc.
 2. ITW Buildex/Red Head/Ramset
 3. Simpson Strong-Tie Anchor System, Columbus, OH

4. Powers Fasteners

2.02 MATERIAL

A. Structural Steel Angles

1. Structural steel shall conform to the provisions of ASTM A36 or ASTM A992, pipe steel to the provisions of ASTM A53, Grade B, and tube steel to the provisions of ASTM A500, Grade B, unless otherwise noted.
2. Structural steel shall contain a minimum of 30% post-consumer content and 15% pre-consumer content.

B. Headed Stud-Type Shear Connectors

1. Shall conform to the provisions of ASTM A108, meeting chemical requirements of ASTM A29, Grade 1010 through 1020, and Article 7.2.6 of AWS D1.1. Welded studs shown on the Drawing are the Basis of Design.
2. Mechanical Studs of equivalent strength to welded studs. Unless shown on the Contract Drawings, the size, number of and location on the beam shall be in accordance with the manufacturer's published data and supported by test data.
 - a. Mechanical shear connectors shall be Hilti X-HVB Shear Connectors installed with Hilti X-ENP-21 HVB powder-actuated fasteners.

C. Bolts

1. Anchor Bolts: Shall conform to the provisions of ASTM F1554, Grade 36, unless different grade is specified elsewhere. Size and detailing indicated on Drawings.
2. Unfinished Bolts: Shall conform to the provision of ASTM A307.
3. Expansion/Screw/Adhesive Anchors, Fasteners Provide types as indicated on Drawings. The anchor specified shall be considered the basis of design. As a minimum, all anchors exposed to weather or embedded in masonry are to be Type 316 stainless steel. Anchors installed in concrete shall be ICC certified for cracked concrete as per BC 1913.
 - a. Wedge Expansion and Undercut Anchors/ expansion bolts shall have an ICC-ES

Evaluation Service Report (ESR) issued in accordance with ACI 355.2 or ICC-ES AC 193 for use in cracked concrete, and including seismic applicability loading, and pursuant to the Office of Technical Certification and Research (OTCR) Building Bulletin 2014-018. Anchors installed in grouted masonry shall have a report issued in accordance with AC 01.

- b. Adhesive anchors shall have an ICC-ES Evaluation Service report (ESR) issued in accordance with ACI 355.4 or ICC-ES AC 308 and for use in cracked concrete, and seismic loading and pursuant to the Office of Technical Certification and Research (OTCR) Building Bulletin 2014-018. Anchors installed in grouted masonry shall have a report issued in accordance with AC 58.
- c. Concrete Screw Anchors shall have an ICC-ES Evaluation Service report (ESR) issued in accordance with ICC-ES AC 193 and for use in cracked concrete, and seismic loading and pursuant to the Office of Technical Certification and Research (OTCR) Building Bulletin 2014-019. Anchors installed in grouted masonry shall have a report issued in accordance with AC 106.

D. Hardware

- 1. Nuts for anchor bolts and unfinished bolts shall conform to the requirements of ASTM A563.
- 2. Nuts for high-strength bolts shall conform to the provisions of ASTM A194 or ASTM A563.
- 3. Washers shall conform to the provisions of ASTM F436.

E. Filler Metal for Welding

- 1. Welding electrode shall conform to E70XX classification of AWS A5.1 for welding of new steel to new steel.
- 2. Welding electrode shall be compatible with existing steel where connections are made to steel of existing building. Electrode shall be E7018 unless determined otherwise. E7018 are low hydrogen electrodes that must be kept extremely dry.

2.03 SHOP ASSEMBLY - FABRICATION**A. General**

1. Do not fabricate until shop drawings have been reviewed.
2. Fabricate and assemble steel in shop to greatest extent possible. Fabricate items and assemblies in accordance with AISC Specifications and the shop drawings. Properly mark members for field assembly.

B. Shop Connections

1. Weld or high-strength bolt shop connections as indicated on Drawings.
2. High-strength bolt connections are friction (slip-critical) connections. Install high-strength bolts in accordance with Specification for Structural Joints using High Strength Bolts (approved by the Research Council on Structural Connections (RCSC) - 2009). Utilize Class A connections. If steel surface of connection area is prepared to SSPC-SP5 surface preparation, Class B may be utilized pending inspection by the Authority's Special Inspection lab that surface meets the required preparation. Pay all costs to the Authority incurred for this inspection.
3. Welding: Comply with "Structural Welding Code" for procedures, appearance, and quality of welds and methods used in correcting welded work.
4. Holes for other Work
 - a. Provide holes and openings required for securing other Work to steel framing and for passage of other Work through framing members. Coordinate with Drawings of other Work.
 - b. Cut, drill, flame cut, or punch holes perpendicular to metal surfaces. Method of cutting must not produce a roughness of over 1000 microinches. Surfaces exceeding these limits must be repaired by machine grinding. Reinforce all openings with steel shapes as shown on shop drawings.

2.04 SOURCE QUALITY CONTROL**A. Testing****1. General**

- a. Structural steel work is subject to all tests required by the Special Inspection requirements of the 2014 NYC Building Code.
- b. Cooperate with the Testing Laboratory in making all required tests.

2. Tests: To be performed by the Authority's Testing Laboratory.

- a. Shop bolted connections: Tested in accordance with AISC specifications.
- b. Shop welding - The laboratory will perform the following functions:
 - 1) Certify welders.
 - 2) Visually inspect all welds, record type and locations of defects, and perform tests if necessary. Check all corrected work.
 - 3) Perform non-destructive tests if necessary or as required by the Special Inspector.

B. Inspection**1. Testing Laboratory**

- a. The Authority (SUNY Purchase College) will engage a Testing Laboratory or Special Inspection Agency to assist in the inspection of steel fabrication and conduct tests at the mill, shop, or foundry. The laboratory will assist in checking erection tolerances and provide shop and field testing required for all structural steel and metal deck work, including metal deck and studs.
- b. The Testing Laboratory will be responsible to and under the supervision of a Special Inspector.

2. Special Inspector

The Authority will assign, under the requirements of Section BC 1704.3, a Special Inspector to

supervise the Work listed above under "Testing Laboratory".

3. Notification: Notify the Authority (SUNY Purchase College) before beginning fabrication of the structural steel and supply laboratory with copies of agreements, approved drawings, approved prints of all shop details, etc., and all necessary information relating thereto. Do not ship material to job site until after inspection and approval by the Testing Laboratory.
4. Discretionary Inspections: No mill, shop, foundry, or field inspection, such as is above provided for, shall be held to prohibit or preclude inspection of such materials during delivery and erection at the building by such other persons as the Authority shall direct.
5. Reports: Shop and field reports, including shipments, will be submitted by the Testing Laboratory to the Authority (SUNY Purchase College) as the work proceeds at the shop or job site. A final report will be submitted by the Testing Laboratory when work is completed at the shop, and again when work is completed in the field. The Special Inspector reserves right to reject material not in compliance with specified requirements at any time.
6. Corrections: Correct deficiencies in work which inspections and tests have indicated to not be in compliance with requirements. Pay for additional tests, at own expense, necessary to reconfirm any non-compliance of original work and as necessary to show compliance of corrected work.
7. Contractor's Responsibility: Inspection and acceptance or failure to inspect shall in no way relieve the Contractor or the mill and shops from their responsibility to furnish satisfactory material strictly in accordance with Drawings and Specifications.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and that erection may proceed. Notify the Authority (SUNY Purchase College) in writing of conditions that adversely affect the Work. Do not proceed with erection until conditions have been corrected. Beginning of installation means the erector accepts existing conditions.

3.02 ERECTION**A. General**

1. Erection shall conform to Sections BC 2205.6.3 and BC 3305.2.
2. All work shall be erected plumb, square, and true to lines and levels in strict accordance with the structural requirements of the building.
3. Provide all machinery, apparatus, and staging required for the erection of steel work in a thoroughly safe and efficient manner. Install, maintain and remove, without injury to other Work, such temporary bracing, scaffolding, etc. as may be necessary or required. Care shall be taken that no part of the structure is overloaded during construction.
4. Arrange for deliveries of material to facilitate the rapid and continuous progress of operation, but the site or streets adjacent to same shall not be used for the storage of material unless absolutely necessary and then only with special permission of the Authority (SUNY Purchase College) and other authorities having jurisdiction.
5. Employ a Licensed Professional Engineer and Land Surveyor to ensure accurate erection of the steel.
6. Do not alter or cut structural members without written approval of the Engineer of Record. Flame cutting in field of members to correct fabrication errors is to be avoided and to be done only upon approval of the Engineer of Record based on the method proposed. Roughness cannot exceed 1000 microinches. Repair of surfaces shall be by mechanical grinding.

B. Temporary Shoring and Bracing

Provide temporary shoring and bracing members with connections of sufficient strength to bear erection loads and guy wires to maintain structure plumb and in true alignment until completion of erection. Remove temporary work when permanent members and bracing are in place and final connections are made. Fill erection bolt-holes on exposed to view members with plug welds and grind smooth.

C. Anchor Bolts

1. Furnish to the concrete masons anchor bolts and other connectors required for securing structural steel to cast-in-place concrete work, together with instructions, templates, etc. necessary for setting them. Anchor bolts are to be surveyed and any approved modifications made prior to placement of columns.
2. For post-installed expansion/screw/adhesive anchors, drill holes of depth and size required by the manufacturer for the required loading. Holes shall be cleaned completely using wire brush and compressed air following manufacturer's guidelines. For installation in existing substrates not installed as part of the Work, have bolt manufacturer perform pullout test in each substrate to verify capacity and quality of substrate prior to final approval of anchor to be utilized.
3. Tighten anchor bolts after support members have been positioned and plumbed. Cut off protruding edges of wedges or shims flush with edge of base or bearing plate prior to packing with grout. Tighten expansion bolts/anchors to torque required by manufacturer.

D. Field Assembly

1. Erect structural frames accurately to lines and elevations indicated. Align and adjust members forming a part of a complete frame or structure before permanently fastening.
2. Clean bearing surfaces and other surfaces that will be in permanent contact before assembly.
3. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
4. Level and plumb individual members of structure within specified AISC tolerances.
5. Establish required leveling and plumbing measurements on mean operating temperature of structure. Make allowances for difference between temperature at time of erection and mean temperature at which structure will be when completed and in service.
6. Splice members only where indicated and accepted on shop drawings.

E. Connections

1. Field connections between new steel members will typically be bolted unless otherwise indicated on Drawings. Connections made to existing steel shall be welded utilizing E7018 electrode. Follow preheat and interpass temperature requirements given in AWS.
 - a. Provide high-strength bolts for bolted connections except where unfinished bolts are indicated on the Drawings. High-strength bolt connections are friction (slip-critical) connections. Install high-strength bolts in accordance with "Specification for Structural Joints using High Strength Bolts."
 - b. Provide unfinished bolts where indicated on Drawings. Lock nuts by upsetting bolt end or by similar method when unfinished bolts are not encased in concrete. Tighten all bolts and nuts fully.
 - c. For ASTM A307 bolts, hardened washer shall be installed under the turned element. For ASTM F3125, Grade A325,/F1852 bolts, hardened washers shall be installed in accordance with Section 6.2 of "Specification for Structural Joints using High Strength Bolts."
 - d. Expansion/screw/adhesive anchors shall be installed in accordance with the manufacturer's installation instructions. Holes shall be cleaned completely using wire brush and compressed air following manufacturer's guidelines. Tighten to the torque values specified by the manufacturer. Attach plates flush with surfaces after the surfaces have been cleaned. Have bolt manufacturer perform pullout test in each substrate to verify capacity and quality of substrate prior to final approval of anchor to be utilized.
2. Holes
 - a. The size of bolt holes shall be in accordance with AISC "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings."
 - b. Ream holes that must be enlarged to admit bolts. Burning or use of drift pins is not permitted.

F. Field Touch-Up

1. Galvanized Members: After erection, clean and paint all damaged areas to the galvanizing, welds, and areas adjacent to welds with the galvanizing repair paint. For galvanized members to be painted, finish painting is specified in Section 09900 and shall be the final two coats of the epoxy paint system.

3.03 TOLERANCES

- A. Erection tolerances shall be in accordance with "Code of Standard Practice for Steel Buildings and Bridges".

3.04 FIELD QUALITY CONTROL

- A. The Contractor shall cooperate with the Special Inspector and the Testing Laboratory performing Special Inspection testing by providing adequate notification for when work is performed that will require the inspection and provide all required access and means for the laboratory to perform the inspection and testing.
- B. The Special Inspector will:
 1. Review erection of structural framework and test field bolting and welding as listed in Part 2 of this Section.
 2. Where post-installed anchors are utilized, perform Special inspection on Post-installed anchors as per BC 1704.32. Adhesive anchors installed in concrete in a horizontal or upwardly inclined position supporting sustained tension loads shall be installed under continuous Special Inspection as required by paragraph D9.2.4 of ACI 318-11.
- C. The Contractor shall engage an engineer licensed in the state of New York to check tolerances and inspect the erection.

3.05 CLEANING

- A. Structural steel or portions of such to receive sprayed fireproofing shall be clean of dust, grease, oils, loose material, and any other matter which would impair the adhesion of the fireproofing material to the steel.

END OF SECTION

06/08/2020

DESIGN NO. D018792

LIST OF SUBMITTALS

<u>SUBMITTAL</u>	<u>DATE SUBMITTED</u>	<u>DATE APPROVED</u>
Product Data:	_____	_____
1. Primer paint, repair paint		
2. Stud shear connectors		
3. Expansion/adhesive anchors		
Shop Drawings:	_____	_____
1. Steel shop drawings		
2. Calculations		
Certificates:	_____	_____
1. Steel affidavit		
2. Bolt test reports		
3. Welders qualifications & license		
4. Material listing		
5. ICC Certification for Mechanical/Adhesive Anchors		
Qualifications	_____	_____
1. Fabricator		
2. Erector		
3. Adhesive anchor installer		

* * *

SECTION 07 55 3
PROTECTED MEMBRANE ROOFING SYSTEM

PART 1 GENERAL

1.01 SUMMARY

- A. Work shall include, but is not limited to, the following:
1. Preparation of roof deck and all flashing substrates.
 2. Liquid-applied, reinforced flashings.
 3. Drainage mat installed over waterproofing membrane.
 4. Extruded polystyrene (XPS) rigid insulation.
 5. Filter fabric installed over insulation layer.
 6. Concrete, clay, or stone pavers set on a reinforced thick-bed mortar installation.
 7. All related materials and labor required to complete specified roofing necessary to receive specified manufacturer's warranty.

1.02 RELATED SECTIONS

- A. Unit Concrete Pavers Section 02515
B. Grouting Section 03610

1.03 DEFINITIONS

- A. ASTM D 1079-Definitions of Term Relating to Roofing and Waterproofing.
- B. The National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual, Fifth Edition Glossary.

1.04 REFERENCE

- A. AMERICAN SOCIETY OF CIVIL ENGINEERS - Reference Document ASCE 7, Minimum Design Loads for Buildings and Other Structures.
- B. AMERICAN STANDARD OF TESTING METHODS (ASTM):
1. ASTM C 836 - Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric

- Waterproofing Membrane for Use with Separate Wearing Course.
2. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants
 3. ASTM D 41 - Standard Specification for Asphalt Primer Used in Roofing, Damp proofing, and Waterproofing.
 4. ASTM D 312- Standard Specification for Asphalt Used in Roofing.
 5. ASTM D 1863 - Standard Specification for Mineral Aggregate Used on Built-Up Roofs.
 6. ASTM D 1970 - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.
 7. ASTM D 2178 - Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing.
 8. ASTM D 3019 - Standard Specification for Lap Cement Used with Asphalt Roll Roofing, Non-Fibered, Asbestos-Fibered, and Non-Asbestos-Fibered.
 9. ASTM D 3746 - Standard Test Method for Impact Resistance of Bituminous Roofing System.
 10. ASTM D 4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free.
 11. ASTM D 4601 - Standard Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing.
 12. ASTM D 5147 - Standard Test Methods for Sampling and Testing Modified Bituminous Sheet Material.
 13. ASTM D 5849 - Standard Test Method for Evaluating Resistance of Modified Bituminous Roofing Membrane to Cyclic Fatigue (Joint Displacement)
 14. ASTM D 6162 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements.
 15. ASTM D 6163 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements.

16. ASTM D 7379 - Standard Test Methods for Strength of Modified Bitumen Sheet Material Laps Using Cold Process Adhesive.
 17. ASTM E 108 - Standard Test Methods for Fire Tests of Roof Coverings.
 18. ASTM E 1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.
- C. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):
1. ANSI/SPRI/FM 4435/ES-1 Wind Design Standard for Edge System Used with Low Slope Roofing System.
 2. ANSI/SPRI FX-1, Standard Field Test Procedure for Determining the Withdrawal Resistance of Roofing Fasteners.
 3. ANSI/SPRI IA-1, Standard Field Test Procedure for Determining the Mechanical Uplift Resistance of Insulation Adhesives over Various Substrates.
 4. ANSI/FM 4474- American National Standard for Evaluating the Simulated Wind Resistance of Roof Assemblies Using Static Positive and/or Negative Differential Pressures.
- D. CANADIAN GENERAL STANDARDS BOARD (CGSB):
1. CGSB 37-GP 56M- Standard for: Modified Bituminous, Prefabricated, and Reinforced for Roofing.
- E. COOL ROOF RATING COUNCIL (CRRC)
- F. EPA ENERGY STAR
- G. FACTORY MUTUAL (FM):
1. FM 4450 - Approval Standard - Class I Insulated Steel Roof Decks.
 2. FM 4470 - Approval Standard - Class I Roof Covers.
- H. NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA).
1. UL 790 Standard Test Methods for Fire Tests of Roof Coverings.
 2. UL 1256 - Fire Test of Roof Deck Constructions.

1.05 ACTION SUBMITTALS

- A. Product Data Sheets: Submit manufacturer's product data sheets, installation instructions and/or general requirements for each component.

- B. Safety Data Sheets: Submit manufacturer's Safety Data Sheets (SDS) for each component.
- C. Sample warranty from the manufacturer and contractor.
- D. Provide roof plan and representative detail drawings.

1.06 **INFORMATIONAL SUBMITTALS**

- A. Submit a letter from the roofing manufacturer indicating the contractor is an authorized applicator.

1.07 **CLOSEOUT SUBMITTALS**

- A. Warranty: Provide manufacturer's and contractor's warranties upon project completion.

1.08 **QUALITY ASSURANCE**

- A. MANUFACTURER QUALIFICATIONS:
 - 1. Manufacturer shall have 20 years of manufacturing experience.
 - 2. Manufacturer shall have trained technical service representatives employed by the manufacturer, independent of sales.
 - 3. Manufacturer shall provide site visit reports in a timely manner.
- B. CONTRACTOR QUALIFICATIONS:
 - 1. Contractor shall be authorized by the manufacturer to install specified materials prior to the bidding period through satisfactory project completion.
 - 2. Applicators shall have completed projects of similar scope using same or similar materials specified.
 - 3. Contractor shall provide full time, on-site superintendent or foreman experienced with the specified roofing from beginning through satisfactory project completion.
 - 4. Applicators shall be skilled in the application methods for all materials.
 - 5. Contractor shall maintain a daily record, on-site, documenting material installation and related project conditions.

6. Contractor shall maintain a copy of all submittal documents, on-site, available at all times for reference.

1.09 **DELIVERY, STORAGE AND HANDLING**

- A. Refer to each product data sheet or other published literature for specific requirements.
- B. Deliver materials and store them in their unopened, original packaging, bearing the manufacturer's name, related standards, and any other specification or reference accepted as standard.
- C. Protect and store materials in a dry, well-vented, and weatherproof location. Only materials to be used the same day shall be removed from this location. During cold weather, store materials in a heated location, removed only as needed for immediate use.
- D. When materials are to be stored outdoors, store away from standing water, stacked on raised pallets or dunnage, at least 4 in or more above ground level. Carefully cover storage with "breathable" tarpaulins to protect materials from precipitation and to prevent exposure to condensation.
- E. Carefully store roof membrane materials delivered in rolls on-end with selvage edges up. Store and protect roll storage to prevent damage.
- F. Properly dispose of all product wrappers, pallets, cardboard tubes, scrap, waste, and debris. All damaged materials shall be removed from job site and replaced with new, suitable materials.

1.10 **SAFETY, HEAT WELDING & SITE CONDITIONS**

- A. **SAFETY:**
 1. The contractor shall be responsible for complying with all project-related safety and environmental requirements.
 2. Heat-welding shall include heating the specified membrane ply using propane roof torches or electric hot-air welding equipment. The contractor shall determine when and where conditions are appropriate to utilize heat-

welding equipment. When conditions are determined by the contractor to be unsafe to proceed, equivalent SBS-modified bitumen materials and methods shall be utilized to accommodate requirements and conditions.

3. Refer to NRCA CERTA recommendations, local codes and building owner's requirements for hot work operations.
4. The contractor shall review project conditions and determine when and where conditions are appropriate to utilize the specified liquid-applied, or semi-solid roofing materials. When conditions are determined by the contractor to be unsafe or undesirable to proceed, measures shall be taken to prevent or eliminate the unsafe or undesirable exposures and conditions, or equivalent approved materials and methods shall be utilized to accommodate requirements and conditions.
5. The contractor shall review project conditions and determine when and where conditions are appropriate to utilize the specified hot asphalt-applied materials. When conditions are determined by the contractor to be unsafe or undesirable to proceed, measures shall be taken to prevent or eliminate the unsafe or undesirable exposures and conditions, or equivalent approved materials and methods shall be utilized to accommodate requirements and conditions.
6. The contractor shall refer to product Safety Data Sheets (SDS) for health, safety, and environment related hazards, and take all necessary measures and precautions to comply with exposure requirements.

B. HEAT WELDING:

1. The Contractor is responsible for project safety. Where conditions are deemed unsafe to use open flames, manufacturer's alternate membrane application methods shall be used to install SBS modified bitumen membrane and flashings.

Acceptable alternate installation methods include hot asphalt, cold adhesive-applied, self-adhered membranes and mechanically fastened plies. Hot-air welding equipment may be used in lieu of roof torches to seal membrane side and end laps where heat welding the laps is necessary. Refer to NRCA CERTA, local codes and building owner's requirements for hot work operations.

2. Single or multi-nozzle, hand-held propane roof torches shall be used to install heat-welded membrane and flashing plies. Multi-nozzle carts (dragon wagons) may also be utilized to install membrane plies. Seven (7) nozzle carts are recommended for more uniform heat application in lieu of five (5) nozzle carts.
3. Heat-Welding Application: Take all necessary precautions and measures to monitor conditions to ensure all environmental conditions are safe to use roof torches and hot-air welding equipment. Combustibles, flammable liquids and solvent vapors that represent a hazard shall be eliminated. Flammable primers and cleaners shall be fully dry before proceeding with heat-welding operations. Prevent or protect wood, paper, plastics and other such combustible materials from direct exposure to open flames from roof torches. Refer to NRCA CERTA recommendations.

C. ENVIRONMENTAL CONDITIONS:

1. Monitor substrate temperature and material temperature, as well as all environmental conditions such as ambient temperature, moisture, sun, cloud cover, wind, humidity, and shade. Ensure conditions are satisfactory to begin work and ensure conditions remain satisfactory during the installation of specified materials. Materials and methods shall be adjusted as necessary to accommodate varying project conditions. Materials shall not be installed when conditions are unacceptable to achieve the specified results.

2. Precipitation and dew point: Monitor weather to ensure the project environment is dry before, and will remain dry, during the application of roofing materials. Ensure all roofing materials and substrates remain above the dew point temperature as required to prevent condensation and maintain dry conditions.

1.11 **PERFORMANCE REQUIREMENTS**

- A. AIR PERMEANCE:
 1. Vapor Retarder/Air Barrier meets or exceeds ASTM D2178 "Standard Test Method for Air Permeance of Building Materials."
- B. WATER VAPOR TRANSMISSION:
 1. Vapor Retarder/Air Barrier meets or exceeds ASTM E96 (Procedure B) "Standard Test method for Water Vapor Transmission of Materials."
- C. WIND UPLIFT RESISTANCE:
 1. Performance testing shall be in accordance with ANSI/FM 4474, FM 4450, FM 4470, UL 580 or UL 1897.
 - a. Roof System Design Pressures: Calculated in accordance with ASCE 7, or applicable standard, for the specified roof system attachment requirements.
- D. FIRE CLASSIFICATION:
 1. Performance testing shall be in accordance with UL 790, ASTM E108, FM 4450 or FM 4470 to meet the roof slope requirement.
 - a. Meets requirements of UL Class A or FM Class A.
 2. Performance testing shall be in accordance with UL 1256, FM 4450 or FM 4470 to meet the specified requirements for interior flame spread and fuel contribution.
 - a. Meets requirements of UL 1256, or FM Class 1.
- E. ROOF SLOPE:
 1. Finished roof slope shall be matching to existing site levels.
- F. IMPACT RESISTANCE:

1. Performance testing for impact resistance shall be in accordance with FM 4450, FM 4470, ASTM D3746 or CGSB 37-GP 56M to meet the specified impact resistance requirements.

- a. Meets requirements for FM-SH (Severe Hail), ASTM D3746, or CGSB 37-GP 56M.

G. ENERGY CONSERVATION REQUIREMENTS:

1. Extruded Polystyrene Insulation "R" Value: Long-term thermal resistance (LTTR) values of the specified foam insulation shall be determined in accordance with CAN/ULC-S770.

2. Thermal Resistance 'R' for the specified roof insulation system shall include the continuous insulation (ci) above the roof deck.

- a. Total Thermal Resistance R Value, continuous insulation (ci) above-deck: R-30.

1.12 WARRANTY

A. Manufacturer's No Dollar Limit (NDL) Warranty. The manufacturer shall provide the owner with the manufacturer's warranty providing labor and materials for 20 years from the date the warranty is issued.

1. Single source warranty covering all components of the waterproofing installation, and including the sheet metal fabrications, insulation, drainage mat, filter fabric, pedestals and pavers when supplied by the manufacturer and installed in accordance with the manufacturer's general requirements.

2. Provide manufacturers overburden warranty rider for removal and replacement of the overburden and paver components in the event that roof leaks occur and repairs are needed. Overburden removal warranty not available for assemblies which include mortar-set pavers.

B. Extruded Polystyrene Insulation: The insulation to retain 80% of its original thermal value for the period of 10 years and to be included with waterproofing warranty.

C. Pavers: Pedestal-supported pavers and the pedestals themselves shall not crack, split, spall or

disintegrate as a result of freeze-thaw cycling for a period of 10 years and are to be included with waterproofing warranty. Mortar-set pavers are excluded.

- D. The contractor shall guarantee the workmanship and shall provide the owner with the contractor's warranty covering workmanship for a period of minimum 20 years from completion date.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. SINGLE SOURCE MANUFACTURER: All SBS modified bitumen membrane, liquid applied flashing and accessory components shall be manufactured by a single supplier with 20 years or more manufacturing history in the US.
1. Comply with the Manufacturer's requirements as necessary to provide the specified warranty.
- B. PRODUCT QUALITY ASSURANCE PROGRAM: Manufacturer shall be an ISO 9001 registered company. A 'Quality Compliance Certificate (QCC) for reporting/confirming the tested values of the SBS-Modified Bitumen Membrane Materials will be supplied upon request.
- C. ACCEPTABLE MANUFACTURER:
1. SOPREMA, located at: 310 Quadral Dr.; Wadsworth, OH 44281; Tel: 800-356-3521; Tel: 330-334-0066; Website: www.soprema.us.
Contact: Maciej Tobolewski (908) 400-1369 - mtobolewski@soprema.us
or David Nimowitz (646) 842-2531 - dnimowitz@soprema.us
 2. Siplast
 3. Kemper

2.02 ROOFING SYSTEM

- A. SBS-MODIFIED BITUMEN / PMMA HYBRID MEMBRANE SYSTEM
BASIS OF DESIGN: SOPREMA
1. SBS-MODIFIED BITUMEN BASE SHEET/ANCHOR SHEET, HEAT WELDED:

- a. SOPREMA COLPHENE FLAM 180: SBS-modified bitumen membrane with plastic burn-off film on top and bottom surfaces. Non-woven polyester reinforcement. Meets or exceeds ASTM D6164, Type I, Grade S per ASTM D5147 test methods.
- i. Thickness: 114 mils (2.9 mm)
 - ii. Width: 39.4 in (1 m)
 - iii. Length: 32.8 ft (10 m)
 - iv. Roll weight: 73 lb (36.2 kg)
 - v. Net mass per unit area, lb/100 sq ft (g/sq m):
 - a) 80 lb (3596 g)
 - vi. Peak load @ 0°F (-18°C), lbf/in (kN/m).
 - a) MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)
 - vii. Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m):
 - a) MD 35%, XMD 40%
 - viii. Peak load @ 73.4°F (23°C), lbf/in (kN/m):
 - a) MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)
 - ix. Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m):
 - a) MD 55%, XMD 60%
 - x. Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m):
 - a) MD 65%, XMD 80%
 - xi. Tear Strength @ 73.4°F (23°C), lbf (N):
 - a) MD 125 lbf (556 N), XMD 85 lbf (378 N)
 - xii. Low temperature flexibility, °F (°C):
 - a) MD/XMD: -15°F (-26°C)
 - xiii. Dimensional stability, %:
 - a) MD/XMD: Less than 0.5%
 - xiv. Compound stability, °F (°C):
 - a) MD/XMD: 240°F (116°C)
 - xv. ASTM D 5385:

a) Pass

2. (ALTERNATE) SBS-MODIFIED BITUMEN BASE SHEET/ANCHOR SHEET, COLD ADHESIVE APPLIED:

- a. SOPREMA COLPHENE 180 PS: SBS-modified bitumen membrane with a plastic burn-off film on the top surface and a sanded bottom surface. Non-woven polyester reinforcement. Meets or exceeds ASTM D6164, Type I, Grade S per ASTM D5147 test methods.
- i. Thickness: 87 mils (2.2 mm)
 - ii. Width: 39.4 in (1 m)
 - iii. Length: 49.2 ft (15 m)
 - iv. Roll weight: 87 lb (39.5 kg)
 - v. Net mass per unit area, lb/100 sq ft (g/sq m):
 - a) 54 lb (2636 g)
 - vi. Peak load @ 0°F (-18°C), lbf/in (kN/m).
 - a) MD 110 lbf/in (19.3 kN/m), XMD 85 lbf/in (14.9 kN/m)
 - vii. Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m):
 - a) MD 35%, XMD 40%
 - viii. Peak load @ 73.4°F (23°C), lbf/in (kN/m):
 - a) MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)
 - ix. Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m):
 - a) MD 55%, XMD 60%
 - x. Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m):
 - a) MD 60%, XMD 65%
 - xi. Tear Strength @ 73.4°F (23°C), lbf (N):
 - a) MD 125 lbf (556 N), XMD 85 lbf (378 N)
 - xii. Low temperature flexibility, °F (°C):
 - a) MD/XMD: -15°F (-26°C)
 - xiii. Dimensional stability, %:
 - a) MD/XMD: Less than 0.5%

- xiv. Compound stability, °F (°C):
 - a) MD/XMD: 240°F (116°C)
- xv. ASTM D 5385:
 - a) Pass

3. SBS-MODIFIED BITUMEN CAP SHEET, HEAT WELDED:

- a. SOPREMA COLPHENE FLAM 180 FR GR: SBS-modified bitumen membrane Cap Sheet with a burn-off film bottom surface and mineral granule top surface. Non-woven polyester reinforced. Meets or exceeds ASTM D6164, Type I, Grade G per ASTM D5147 test methods.
 - i. Thickness: 157 mils (4.0 mm)
 - ii. Width: 39.4 in (1 m)
 - iii. Length: 32.8 ft (10 m)
 - iv. Roll weight: 118 lb (53.5 kg)
 - v. Net mass per unit area, lb/100 sq ft (g/sq m):
 - a) 110 lb (5350 g)
 - vi. Peak load @ 0°F (-18°C), lbf/in (kN/m).
 - a) MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)
 - vii. Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m):
 - a) MD 35%, XMD 40%
 - viii. Peak load @ 73.4°F (23°C), lbf/in (kN/m):
 - a) MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)
 - ix. Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m):
 - a) MD 55%, XMD 60%
 - x. Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m):
 - a) MD 65%, XMD 80%
 - xi. Tear Strength @ 73.4°F (23°C), lbf (N):
 - a) MD 125 lbf (556 N), XMD 85 lbf (378 N)
 - xii. Low temperature flexibility, °F (°C):

- a) MD/XMD: -15°F (-26°C)
 - xiii. Dimensional stability, %:
 - a) MD/XMD: Less than 0.5%
 - xiv. Compound stability, °F (°C):
 - a) MD/XMD: 240°F (116°C)
 - xv. ASTM D 5385:
 - a) Pass
 - xvi. Granule Surfacing:
 - a) White mineral granules.
- 4. POLYMETHYL METHACRYLATE (PMMA) MEMBRANE FLASHING, LIQUID-APPLIED:
 - a. SOPREMA ALSAN RS 230 FLASH: Catalyzed polymethyl methacrylate (PMMA) liquid resin with polyester reinforcing fleece fabric fully embedded into the resin to form fully reinforced waterproofing membrane flashings. All LIQUID-APPLIED flashing shall be manufactured by the single-sourced membrane supplier.
 - i. VOC Content: No VOC Content.
 - ii. SOPREMA ALSAN RS 230 FLASH Polymethyl methacrylate (PMMA) Polymethacrylate liquid resin.
 - iii. SOPREMA ALSAN RS CATALYST POWDER: Reactive agent added to the liquid resin to induce polymerization.
 - iv. SOPREMA ALSAN RS FLEECE: Polyester reinforcement fabric.
 - v. Color: Flash color and finish to match Field.

2.03 ACCESSORIES

A. PRIMERS:

- 1. SOPREMA ELASTOCOL 500 Primer: Asphalt cut-back primer. Primer for the preparation of membrane substrates for asphalt, heat-welded, hot asphalt and COLPLY ADHESIVE, solvent-based, cold adhesive-applied and cement applications.
 - a. Meets or exceeds ASTM D41
 - b. VOC content: 350 g/L or less.

2. SOPREMA ELASTOCOL 350 Primer: Polymer emulsion primer, meeting low VOC requirements for the preparation of membrane substrates for hot asphalt, torch and SOPREMA COLPLY adhesive and flashing cement applications.
 1. SOPREMA ALSAN RS 222 PRIMER: Rapid curing, polymethyl methacrylate (PMMA) liquid resin used to promote adhesion of PMMA/PMA membranes over asphaltic substrates, wood, concrete and approved waterproofing board substrates.
 - a. VOC content: 2.5 g/L
 - b. Color: Clear
 2. SOPREMA ALSAN RS METAL PRIMER: Solvent-based primer used to improve the adhesion of PMMA/PMA membranes to metal substrates.
 - a. VOC content: 50 g/L
 - b. Color: Off White
- B. MEMBRANE ADHESIVE:
1. SOPREMA COLPLY EF ADHESIVE: Premium, non-toxic, low odor, solvent-free, polymeric membrane adhesive for use with all SBS-modified bitumen sanded base ply and all Cap Sheet membrane applications.
 - a. VOC Content: 32 g/L or less VOC Content.
 - b. Meets or exceeds ASTM D7379
- C. CATALYST:
1. SOPREMA ALSAN RS CATALYST POWDER: Reactive agent used to cure PMMA/PMA liquid resins.
- D. REINFORCING FABRIC:
1. SOPREMA ALSAN RS FLEECE: Woven polyester reinforcement used in PMMA/PMA liquid applied membrane and flashing applications.
 - a. Thickness: 30-40 mils (0.8-1 mm)
 - b. Weights: 110 g/m²

- c. Width(s): 10.3 in (26 cm), 13.8 in (35 cm), 20.7 in (53 cm), 41.3 in (105 cm). Size as required.
 - d. Length: 164 ft (50 m)
 - 2. SOPREMA ALSAN RS PRE-CUT FLEECE: Factory pre-cut woven polyester reinforcement used for a variety of penetration flashings in PMMA/PMA liquid applied membrane and flashing applications.
 - a. Thickness: 30-40 mils (0.8-1 mm)
 - b. Weights: 110 g/m²
 - c. Component/Size(s): Small Pipe Flashing ½ - 3 in (13 - 76 mm), Large Pipe Flashing 4 - 8 in (102 - 203 mm), Universal Corner sizes as required.
- E. PASTE AND MORTAR:
 - 1. SOPREMA ALSAN RS PASTE: Rapid curing, polymethyl methacrylate (PMMA) paste resin used to fill small cracks and voids on non-traffic bearing substrates prior to the application of PMMA/PMA membranes.
 - a. VOC content: 4.4 g/L
 - b. Color: Grey
 - 2. SOPREMA ALSAN RS MORTAR: Rapid curing, polymethyl methacrylate (PMMA) paste resin used as a lean mortar or a gradient leveling mortar.
 - a. VOC content: 4.5 g/L
 - b. Color: Grey
- F. CLEANER:
 - 1. SOPREMA ALSAN RS CLEANER: Clear, blended solvent used to clean and prepare plastic and metal surfaces or used to clean existing ALSAN RS surfaces prior to the application of PMMA/PMA liquid applied membrane and flashings.
 - a. VOC content: <5 g/L
 - b. Color: Clear
- G. FLASHING CEMENT

1. SOPREMA COLPLY EF FLASHING CEMENT: Premium, non-toxic, low-odor, solvent-free, polymeric membrane flashing cement for use with sanded base ply and all sanded Cap Sheet flashing applications.
 - a. VOC Content: 32 g/L or less VOC Content.

H. GENERAL PURPOSE SEALANT

1. SOPREMA SOPRAMASTIC SP1: General purpose, paintable, gun-grade, elastomeric, polyether moisture curing sealant for sealing SBS membrane terminations, Kynar 500 PVDF, horizontal and vertical construction joints.
 - a. VOC Content: 20 g/L or less.
 - b. Meets or exceeds ASTM C920, Type S, Grade NS, Class 50.
 - c. Standard color, custom color.

2.04 ROOF INSULATION COMPONENTS

A. RIGID INSULATION

1. EXTRUDED POLYSTYRENE INSULATION (XPS):
 - a. SOPREMA SOPRA-XPS (or as approved equal by membrane manufacturer), extruded polystyrene insulation board for waterproofing assemblies meeting ASTM C-578 Type VII criteria.
 - i. Thickness: Total thickness to meet specified insulation system total thermal resistance 'R' value of R-30.
 - ii. Aged Thermal Resistance (ASTM C518): R-5 per inch (RSI 0.87 per 25 mm).
 - iii. Board Size: [24 inch (610 mm)] wide, 96 inch (2440 mm) long, [1.5" (38 mm)] [2.0" (50 mm)] [3" (75 mm)] thick.
 - iv. Compressive Strength: Minimum 60 psi (414 kPa).
 - v. Water Absorption (ASTM C272): 0.3% by volume maximum.
 - vi. Edges: Square.
 - vii. Water Vapor Permeance (ASTM E96): less than 0.8 perm max.

- viii. Flame Spread/Smoke Developed Values (ASTM E84): 15/165.
 - ix. Certified by foam manufacturer to be CFC free.
- b. DOW PLAZAMATE STYROFOAM, extruded polystyrene insulation board for waterproofing assemblies meeting ASTM C-578 Type VII criteria.
- i. Thickness: Total thickness to meet specified insulation system total thermal resistance 'R' value of R-30.
 - ii. Aged Thermal Resistance (ASTM C518): R-5 per inch (RSI 0.87 per 25 mm).
 - iii. Board Size: [24 inch (610 mm)] wide, 96 inch (2440 mm) long, [1.5" (38 mm)] [2.0" (50 mm)] [3" (75 mm)] thick.
 - iv. Compressive Strength: Minimum 60 psi (414 kPa).
 - v. Water Absorption (ASTM C272): 0.3% by volume maximum.
 - vi. Edges: Square.
 - vii. Water Vapor Permeance (ASTM E96): less than 0.8 perm max.
 - viii. Flame Spread/Smoke Developed Values (ASTM E84): 15/165.
 - ix. Certified by foam manufacturer to be CFC free.

2.05 ROOF DRAINAGE COMPONENTS

A. PREFABRICATED DRAINAGE MAT

1. SOPREMA SOPRADRAIN ECO-Vent: Composite drainage board consisting of a post-industrial recycled polypropylene core of fused, entangled filaments covered with a geocomposite filter fabric on its upper surface to allow water to pass into the drainage core while restricting the movement of soil particles and suitable for use in select vertical and horizontal applications and shall be manufactured by the membrane supplier:

- a. Thickness: 0.40 in
- b. Dimensions: 48 in. x 100 ft
- c. Flow rate: 135 gal/min/sf
- d. Puncture strength: 310 lbs
- e. Trapezoid tear strength: 50 lbs

B. FILTER FABRIC

- 1. SOPREMA SOPRANATURE FILTER FABRIC: Non-recycled polypropylene, staple fiber, needle-punched nonwoven geotextile designed to separate the growth medium and/or pavers from drainage system.
 - a. Length: 360 ft
 - b. Width: 6.25 ft
 - c. Flow rate: 140 gpm/sf
 - d. Tensile strength: 100 lbs
 - e. Elongation: 80%

2.06 PAVER OVERBURDEN COMPONENTS

A. ARCHITECTURAL PAVERS

- 1. Approved WAUSAU TILE, WESTILE, SUNNY BROOK PRESSED CONCRETE or as approved equal architectural precast concrete, clay or stone pavers or bricks with beveled edges complying with ASTM C902 or ASTM C1272 as required:
 - a. Nominal size: [as indicate on architectural drawing x 2 in](#) thickness or as specified.
 - b. Compressive strength: 8,500 psi per ASTM C-140; 1750 pounds minimum center load required
 - c. Flexural strength: 1100 psi per ASTM C-293
 - d. Water absorption: $\leq 5\%$ per ASTM C-140
 - e. Freeze-thaw: no breakage and not more than 1% loss in dry weight after 50 cycles in accordance with ASTM C-67
 - f. Adjustable height and fixed height pedestals supplied thru membrane manufacturer
 - g. Color and finish: [Contact manufacturer](#)

B. MORTAR SETTING BED

1. Acceptable reinforced exterior grade mortar, ASTM C270 Type M mortar, latex-modified for extreme environments in an unbonded system.
 - a. Setting bed thickness: 3/4 in. to 2 in.
(19 - 51 mm)

2.07 **MISCELLANEOUS ACCESSORIES**

A. SHEET METAL FLASHING

1. Contractor shall furnish all sheet metal flashings, counter flashings, roof edge system, and all other related sheet metal flashings and associated fasteners necessary to flash and counter flash the specified waterproofing system.
2. Sheet metal flashing materials and fasteners shall be compatible with adjacent materials, to accommodate all project related exposures.
3. Pre-Finished (Mill Finished) Sheet Metal Flashing Material: Aluminum, Galvanized Steel, Stainless Steel, Copper.
4. Roof Edge System: Tested per ANSI/SPRI ES-1 to meet or exceed design pressures at roof edge.

PART 3 EXECUTION

3.01 **EXAMINATION**

- A. Examination includes visual observations, qualitative analysis, and quantitative testing measures as necessary to ensure conditions remain satisfactory throughout the project.
- B. The contractor shall examine all roofing substrates including, but not limited to: insulation materials, roof decks, walls, curbs, rooftop equipment, fixtures, and wood blocking.
- C. The applicator shall not begin installation until conditions have been properly examined and determined to be clean, dry and, otherwise satisfactory to receive specified roofing materials.
- D. During the application of specified materials, the applicator shall continue to examine all project

conditions to ensure conditions remain satisfactory to complete the specified roofing system.

3.02 PREPARATION

A. GENERAL

1. Before commencing work each day, the contractor shall prepare all roofing substrates to ensure conditions are satisfactory to proceed with the installation of specified roofing materials. Preparation of substrates includes, but is not limited to, substrate repairs, securement of substrates, eliminating all incompatible materials, and cleaning.
2. Where conditions are found to be unsatisfactory, work shall not begin until conditions are made satisfactory to begin work. Commencing of work shall indicate contractor's acceptance of conditions.
3. On reroofing applications, the existing roof membrane and flashings shall be completely removed to the deck. Prepare deck and flashings substrates as required for application of new waterproofing system.

3.03 COLD APPLIED, FULLY ADHERED SBS BASE PLY APPLICATION

- A. The ambient temperature shall be above 50°F (10°C), and the adhesive temperature shall be a minimum of 70°F (21°C) at the point of membrane application.
- B. To ensure the adhesive is applied at 70°F (21°C), during cold weather, drums and 5-gallon pails shall be stored in heated areas. Drums and 5-gallon pails exposed to cold temperature on the roof shall be provided with heaters when necessary to ensure the minimum application temperature is maintained.
- C. SOPREMA COLPLY EF ADHESIVE may be applied using a 3/16 - 3/8-inch notched squeegee or brush. SOPREMA COLPLY EF ADHESIVE is not spray-applied.
- D. Apply adhesive to clean, dry and prepared compatible substrates as required to ensure full adhesion.

- E. Follow the adhesive product data sheet requirements for application rates.
- F. Apply a uniform application of membrane adhesive at the application rate published on the product data sheet.
- G. Apply 1-1/2 to 2 gallons per square between membrane plies. The application rate is 2 to 3 gallons per square or more over absorptive substrates and over granule surfaces. Refer to manufacturer's product data sheet and adjust application rate based upon surface conditions.
- H. Install the SBS membrane ply before the adhesive begins to skin over. Once adhesive skins over, the membrane ply will not adhere.

3.04 **LIQUID-APPLIED PMMA FLASHING SYSTEM SUBSTRATE PREPARATION**

- A. Before commencing work each day the contractor shall prepare all substrates to ensure conditions are satisfactory to proceed with the installation of specified materials.
- B. Preparation of substrates includes, but is not limited to, the following:
 - 1. General:
 - a. All substrates must be clean, dry and free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of primer and/or resin materials to the substrate. Most surfaces will require mechanical abrasion in the form of scarifying, shot blasting or grinding to achieve a suitable substrate.
 - b. Inspect all substrates and correct defects before application of waterproofing materials. Fill all surface voids 1/16 in (1.5 mm) or greater wide and/or deep with appropriate fill material.

2. Concrete Substrates:
 - a. Concrete shall comply with requirements of ACI 301 and ACI 308.
 - b. Concrete compressive strength: 3,500 psi for all primers or 2,500 psi minimum when use of a moisture mitigation primer is required.
 - c. Relative humidity: Maximum 75 percent per ASTM F2170 unless otherwise approved.
 - d. Surface: Scarify, shot blast or grind to ICRI Concrete Surface Profile CSP 3 to CSP 5; CSP 3 being the preferred profile.
 - e. Adhesion: Adhesion of specified primer and liquid applied membrane shall be minimum 220 psi for traffic bearing waterproofing applications or 116 psi for roofing or non-traffic bearing waterproofing applications per ASTM D4541.
 - f. Areas of spalls, voids, bug holes and other deterioration on vertical or horizontal surfaces shall be repaired as required or recommended.
3. Masonry Substrates:
 - a. Walls shall be structurally sound built of hard kiln dried brick, reinforced concrete block, or waterproof concrete block construction.
 - b. Liquid applied membrane must not be applied over soft or scaling brick or block, faulty mortar joints, or walls with broken, damaged or leaking coping. Areas of spalls, voids, bug holes and other deterioration on vertical surfaces shall be repaired as required or recommended.
 - c. Walls of ordinary hollow tile, or other materials which in themselves are not waterproofed, should not be accepted as suitable to receive liquid applied membrane unless properly waterproofed to prevent moisture infiltration from above or behind the new liquid applied membrane.

- d. Relative humidity: Maximum 75 percent per ASTM F2170 unless otherwise approved.
 - e. Surface: Scarify, shot blast or grind to ICRI Concrete Surface Profile CSP 2 to CSP 4.
 - f. Adhesion: Adhesion of specified primer and liquid applied membrane shall be minimum 220 psi for traffic bearing waterproofing applications or 116 psi for roofing or non-traffic bearing waterproofing applications per ASTM D4541.
4. Metal Substrates:
- a. Clean and prepare metal to near-white metal in accordance with SSPC - SP3 (power tool clean) to a point maximum 1/8 in (3 mm) beyond the termination of liquid applied membrane materials and wipe with solvent cleaner to remove oils, debris or contaminants.
 - b. Stainless Steel Series 300 and 400: Abrade to provide rough, open surface and wipe with solvent cleaner to remove oils, debris or contaminants.
 - c. Galvanized & Zinc-Rich Metals: Galvanized and/or zinc rich metals are coated with either a layer of oil to prevent white rust or is passivated which must be completely removed prior to applying primer or liquid applied waterproofing. This can be confirmed by applying a coat of copper sulfate solution to the prepared and cleaned galvanized/zinc metal. A properly prepared surface will turn black indicating the passivator has been removed. If the surface does not turn black, additional abrasive cleaning will be required.
 - d. Adhesion: Examine metal substrates by conducting adhesion testing. Prime with specified metal primer where required to achieve adequate adhesion.

5. Rigid Plastics (PVC & ABS):
 - a. Rigid plastics should be lightly abraded and wiped with solvent cleaner. Extend preparation maximum 1/8 in (3 mm) beyond the specified termination of the liquid applied membrane flashing materials.
6. Wood Substrates:
 - a. Provide sanded $\frac{3}{4}$ in (19 mm) minimum thickness APA A-C, Group 1, Exterior or Exposure 1, 48 in (1220 mm) x 96 in (2440 mm) tongue & groove sheathing panels. Install all panels with "A" side up, edges supported by blocking or structural framing, fastened using only non-corrosive screw fasteners with heads installed flush with sheathing applied at 6 in (150 mm) minimum o.c. along panel edges and 12 in (300 mm) o.c. over intermediate supports and/or additional fastening as required by jurisdictional codes. All new plywood substrates shall be structural panels performance-rated pursuant to National Institute of Standards and Technology (NIST) voluntary product standard PS-1-95; identified with American Plywood Association (APA) grade designations.
 - b. Hygroscopic building materials such as wood plank, timber or plywood will normally have higher moisture content (in the range of 8% to 12%) as they adsorb or desorb moisture to reach equilibrium moisture content with the surrounding air. Cold liquid applied primer and reinforced membrane should not be applied to damp or wet sheathing materials but may be applied to materials with higher moisture contents as indicated above, provided the exposed surface is clean and dry. Ultimately, determinations of moisture content and the resulting bond strength

should be performed periodically to determine acceptability. If poor adhesion or blistering occurs, substrate will require additional drying time before proceeding.

- c. After priming plywood panels, fill joint gaps, holes and cracks with proprietary PMMA paste or PMMA mortar. All joints must be covered with minimum 1 in (25 mm) wide bond breaker tape followed with minimum 6 in (150 mm) wide strips of cold liquid applied reinforced waterproofing membrane centered over joint. Cover knot holes or cracks with strips of cold liquid applied reinforced waterproofing membrane.

7. Acceptable Roof Cover Boards:

- a. After panels, fill joint gaps, holes and cracks with proprietary PMMA paste or PMMA mortar. All joints must be covered with minimum 6 in (150 mm) wide strips of cold liquid applied reinforced waterproofing membrane centered over joint.

- C. Where conditions are found to be unsatisfactory, work shall not begin until conditions are adjusted appropriately. Commencing of work shall indicate contractor's acceptance of conditions.

3.05 **PMMA FLASHING PRIMER APPLICATION (GENERAL)**

- A. Refer to manufacturer's detail drawings, product data sheets and published general requirements for application rates and specific installation instructions.
- B. Examine all substrates and conduct adhesion peel tests as necessary to ensure satisfactory adhesion is achieved.

3.06 **PMMA PRIMER APPLICATION**

- A. Mix primer resin and catalyst approximately 2 minutes using a clean spiral agitator on slow speed or stir

stick until evenly mixed. Do not aerate. Mix only the amount of primer that can be used within the application time.

- B. Apply the appropriate specified primer to dry, compatible substrates as required to enhance adhesion of new specified waterproofing materials.
- C. Apply primer using brush or roller at the rate published on the product data sheet. Do not allow primer to pond or collect in low areas.
- D. Project conditions vary throughout the day. Monitor changing conditions, and the curing time of primers.
- E. Allow primer to fully cure before membrane application.

3.07 **METAL PRIMER APPLICATION**

- A. Mix primer resin approximately 2 minutes using a clean spiral agitator on slow speed or stir stick until evenly mixed. Do not aerate. Mix only the amount of primer that can be used within the application time.
- B. Apply the appropriate specified primer to dry, compatible substrates as required to enhance adhesion of new specified waterproofing materials.
- C. Apply primer using brush or roller at the rate published on the product data sheet. Do not allow primer to pond or collect in low areas.
- D. Project conditions vary throughout the day. Monitor changing conditions, and the curing time of primers.
- E. Allow primer to fully cure before membrane application.

3.08 **SUBSTRATE PATCHING, LEVELING & REPAIR**

- A. GENERAL:
 - 1. After priming and before commencing with application of liquid applied waterproofing, the contractor shall patch, level or repair all substrates as required to eliminate bug holes, voids, cavities, low spots, repair cracks or any other condition that may be detrimental to proper application of the liquid applied waterproofing.

B. PATCHING, LEVELING & REPAIRS:

1. Contractor shall use proprietary paste or resin-mortar for all patching, leveling or repairs wherever possible. Refer to manufacturer's detail drawings, product data sheets and published general requirements for application rates and specific installation instructions.
2. Traffic bearing substrates: Use only resin-mortar for all substrate leveling, patching and repairs.
3. Non-traffic bearing horizontal or vertical substrates: Use paste or resin-mortar for all substrate leveling, patching and repairs.
4. Application:
 - a. Install paste or resin-mortar over a fully cured primer.
 - b. The substrate shall be dry and free of any dust or loose particles.
 - c. Mix paste resin and/or resin-mortar using a slow speed agitator prior to pouring into a larger container.
 - d. When required, combine the paste or resin-mortar with #1 (0.7 - 1.2mm) kiln-dried quartz aggregate as recommended for deep voids or large areas.
 - e. Mix paste and/or resin-mortar and catalyst approximately 2 minutes using a clean spiral agitator on slow speed or stir stick until evenly mixed. Do not aerate. Mix only the amount of product that can be used within the application time.
 - f. Apply the catalyzed paste and/or resin-mortar onto the substrate using a smoothing trowel, working the material into the surface for complete coverage and full adhesion.
 - g. Paste and/or resin-mortar should be placed in lifts no greater than the maximum thicknesses recommended.
 - h. If additional lifts will be required, broadcast top surface of the placed paste or

resin-mortar with clean dry #1 (0.7 - 1.2 mm) kiln-dried quartz aggregate at approximately 25% coverage while the paste and/or resin-mortar is wet. Place next lift once the paste and/or resin-mortar has cured.

- C. NON-MOVING (STATIC) CRACKS - 1 mm or less:
 - 1. Determine that crack is non-moving. Remove any existing filler and clean out crack by brushing and oil-free compressed air. Fill crack with resin mortar or paste as required.
- D. MOVING (DYNAMIC) CRACKS - 1 mm or less:
 - 1. Determine that crack is moving. Remove any existing filler and clean out crack by brushing and oil-free compressed air. Fill crack with resin-mortar or paste as required. After the resin-mortar or paste has cured, apply minimum 4 in (100 mm) wide strip of reinforced cold liquid applied membrane centered over crack.
- E. MOVING (DYNAMIC) CRACKS - 3 mm or less:
 - 1. Determine that crack is moving. Remove any existing filler and clean out crack by brushing and oil-free compressed air. Fill crack with resin-mortar or paste as required. After the resin-mortar or paste has cured, apply bond breaker tape 5 times in width greater than the maximum anticipated expansion. Then cover with a strip of reinforced cold liquid applied membrane centered over crack sized to provided 2 in (50 mm) minimum cover beyond all side of the bond breaker tape but no less than 6 in (150 mm) minimum width.
- F. MOVING (DYNAMIC) CRACKS - Greater than 3 mm:
 - 1. Moving cracks greater than 3 mm must be treated as an expansion joint.

3.09 PMMA MEMBRANE INSTALLATION & STAGING

- A. In a normal cold liquid applied membrane flashing application the substrate is prepared and primed, flashings are installed over the in-place SBS membrane cap ply.

- B. If work is interrupted for more than 12 hours use manufacturer's proprietary cleaner to clean applied primer, resin mortar, flashing membrane or field membrane transition areas. Cleaner should be allowed a minimum of 20 minutes evaporation time after application and covered within 60 minutes of application or as recommended by the manufacturer.

3.10 LIQUID APPLIED PMMA FLASHING MEMBRANE APPLICATION

A. General:

1. Refer to manufacturer's detail drawings, product data sheets and published general requirements for application rates and specific installation instructions.
2. Provide a minimum vertical height of 8 in (200 mm) for all flashing terminations wherever possible. Flashing height shall be at least as high as the potential water level that could be reached as a result of a deluging rain and/or poor slope.
3. Do not flash over existing through-wall flashings, weep holes and overflow scuppers.
4. All flashing shall be terminated as required by the manufacturer. Cap flashings or counter flashings may be constructed of metal, stone, tile or other materials properly installed in accordance with industry-accepted practice.
5. Install all flashing membranes before installing field membranes.
6. The primed substrate shall be dry and free of any dust, loose particles or contaminants.
7. Precut reinforcing fleece to conform to terminations, transitions and penetrations being flashed. Ensure a minimum 2 in (50 mm) overlap of fleece at side laps and extend flashing 4 in (100 mm) minimum horizontally onto deck unless otherwise specified. Ensure the completed liquid applied flashing membrane is fully reinforced.
8. Wherever possible factory pre-cut fleece pipe penetration and universal corners shall be used.

9. Mix waterproofing resin and catalyst approximately 2 minutes using a clean spiral agitator on slow speed or stir stick until evenly mixed. Do not aerate. Mix only the amount of waterproofing resin that can be used within the application time.
10. Apply the base coat of catalyzed waterproofing resin onto the substrate using a brush or roller, working the material into the surface for complete coverage and full adhesion.
11. Immediately apply the reinforcing fleece into the wet base coat of resin making sure the smooth side is up. Using a brush or roller, work the reinforcing fabric into the wet resin while applying the second coat of catalyzed waterproofing resin to completely encapsulate the fleece. Avoid any folds and wrinkles.
12. At membrane tie-ins, clean cured membrane with specified cleaner before application of adjacent membrane.

B. Penetrations

1. Pipes, Conduits, Posts, Supports and Unusual Shaped Penetrations:
 - a. Pipes, conduits and other items to be flashed must be separated with $\frac{1}{2}$ in (13 mm) minimum clearance or as recommended by manufacturer to adequately waterproof each individual penetration.
 - b. All penetrations must be flashed individually. Two or more items ganged together in a flashing will NOT be permitted.
 - c. Flash penetrations using cold liquid applied reinforced membrane or proprietary fibrated flashing resin as recommended. Flashing shall be applied using factory pre-cut fleece wherever possible consisting of a reinforced deck skirt/target flashing applied over a reinforced vertical wrap finger flashing.

2. Drains:

- a. Flash drains using cold liquid applied membrane. Flashing shall consist of a membrane target extending minimum 12 in (300 mm) horizontally onto the substrate applied over a finger flashing extended into the prepared drain bowl a minimum of 3 in (75 mm).
- b. At no time should the cold liquid applied membrane be installed to restrict or reduce the drain inlet in size.
- c. For new drains, contractor shall include cost of all plumbing work, piping and connection to existing storm sewer system.

3. Hot Pipes:

- a. Protect cold liquid applied membrane components from direct contact with steam or heat sources when the in-service temperature exceeds 150°F (65.5°C). In all such cases flash to an intermediate "cool" sleeve.
- b. Fabricate "cool" sleeve in the form of a metal cone using non-ferrous metal in accordance with manufacturer details.
- c. Flash sleeve using cold liquid applied reinforced membrane similar to a standard pipe flashing. Flashing shall consist of a reinforced target applied over a reinforced vertical wrap finger flashing.

4. Flexible Penetrations:

- a. Provide a weather-tight gooseneck set in manufacturers resin paste and secured to the deck.
- b. Flash gooseneck penetrations using cold liquid applied reinforced membrane as recommended. Flashing shall consist of a reinforced target and reinforced vertical wrap finger flashing.

5. Walls, Curbs and Bases:
 - a. Flash all walls, curbs and bases using cold liquid applied reinforced membrane. Wherever possible extend flashing up and over tops of walls, curbs and bases so the membrane terminates on the opposite face of the vertical element.
6. Expansion Joints:
 - a. Flash all expansion joints with minimum two layers of manufacturer's cold liquid applied reinforced membrane applied over an expansion joint compressible filler, expansion tube, backer rod and/or bond breaker tape as recommended by manufacturer.
7. Non-standard Flashing Details:

When required, consult manufacturer for recommendations on flashing non-standard conditions, penetrations or protrusions.

3.11 **SHEET METAL FLASHING INSTALLATION**

- A. Refer to sheet metal flashing detail drawings and follow product data sheets and published general requirements for installation instructions.
- B. Follow the most recent edition of the SMACNA Architectural Sheet Metal Manual for fabrication and installation requirements.

3.12 **WATERPROOFING MEMBRANE CONTINUITY TESTING**

- A. **FLOOD TEST**
 1. A flood test of the completed membrane and flashing system shall be conducted prior to the installation of any overburden. The flood test shall be of a 24-hr. minimum duration and shall apply a water head of 2" over the entire application area. Any incidents of water entry shall be evaluated, and all necessary repairs conducted, followed by an additional flood test.

3.13 WATERPROOFING MEMBRANE PROTECTION (General)

- A. Protect waterproofing membrane to avoid damage by other trades and during placement of overburden. Place protection layer immediately upon curing of waterproofing membrane. Drainage composite or protection boards may be installed the same day the membrane is applied or immediately after flood testing when required.
1. Horizontal applications: Use a drainage composite, or 1/8" to 1/4" (3.2 to 6.4 mm) asphaltic hardboard. When reinforced concrete slabs are placed over the membrane, use drainage composite or 1/4" (6.4 mm) hardboard. Where required, adhered protection board to waterproofing membrane using Membrane Manufacturers proprietary acrylic resin paste or approved adhesive.
 2. Vertical applications: Use drainage composite, 1 in (25.4 mm) expanded polystyrene or extruded polystyrene that has a minimum compressive strength of 10 lb/in² (69 kN/m²). If extruded polystyrene protection board is used, backfill should not contain sharp rock or aggregate over 2 in (51 mm) in diameter. Adhere drainage composite or polystyrene protection board to waterproofing membrane as required using Membrane Manufacturers proprietary acrylic resin paste or an approved adhesive.

3.14 OVERBURDEN INSTALLATION

- A. DRAINAGE MAT:
1. Install course of drainage mat over horizontal surfaces. Allow to lay flat and overlap min. three (3) inch all side laps or as required by membrane's manufacturer.
 2. Cut and fit drainage mat per manufacturer's specifications to fit the perimeter and penetrations.

3. Bond all overlap edges to adjacent drainage mat course with an acceptable adhesive if required to ensure geotextile integrity.

B. EXTRUDED POLYSTYRENE (XPS) INSULATION BOARD INSTALLATION

1. Loose lay extruded polystyrene insulation boards in a staggered manner. Butt all boards tightly leaving a maximum acceptable opening between panels of three-eighths (3/8) inch. Install insulation within the required distances of all projection, penetrations, etc. In multi-layer applications the bottom layer must be the thickest layer and have a minimum thickness of 2" (50.8 mm).

C. FILTER FABRIC INSTALLATION

1. Install filter fabric course over all extruded insulation panels. Allow to lay flat.
2. Cut and fit filter fabric per manufacturer's specifications to fit the perimeter and penetrations.
3. Bond all overlap edges to adjacent filter fabric course to ensure geotextile integrity.

D. PAVERS PLACEMENT

1. Install subsequent overburden materials as soon as possible.
2. Install mortar setting bed, pavers, and grout as required in accordance with industry practice, Manufacturer's recommendations, and architectural layout.

3.17 CLEAN-UP & PROTECTION

- A. Clean-up and properly dispose of waste and debris resulting from these operations each day as required to prevent damages and disruptions to operations.
- B. Upon completion of new work (including all associated work), institute appropriate procedures for surveillance and protection of finished work during

08/24/2020

NEUBERGER MUSEUM SOUTH COURTYARD

remainder of construction period. Protect all areas
where waterproofing membrane has been installed.

END OF SECTION

LIST OF SUBMITTALS

<u>SUBMITTAL</u>	<u>DATE SUBMITTED</u>	<u>DATE APPROVED</u>
Product data:	_____	_____
1. Catalog sheets, specifications, installation instructions for each item specified		
Samples:	_____	_____
Quality Assurance	_____	_____
1. Manufacturer's Product Certificates		
2. Installer's Qualifications Data		
3. Company Field Advisor Data		
4. Manufacturer's test reports certifying compatibility		
5. Manufacturer's test reports certifying that sealant will not stain		
6. Pre-construction field adhesion test reports		
Mockups:	_____	_____

SECTION 07900
JOINT SEALERS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. Provide all joint sealer Work as indicated on the Drawings, as required for the completed Work, and as specified herein. This Section includes joint sealants for the following applications:

1. Exterior joints in the following vertical surfaces and horizontal nontraffic surfaces:
 - a. Construction joints in concrete.
 - b. Joints in exterior insulation and finish systems.
2. Exterior joints in the following horizontal traffic surfaces:
 - a. Control and expansion joints in brick pavers.
 - b. Isolation and contraction joints in cast-in-place concrete.
 - c. Joints in stone paving units, including steps.
 - d. Other joints as indicated.

1.02 REFERENCES

A. References and industry standards listed in this Section are applicable to the Work. Unless more restrictive criteria or differing requirements are explicitly stated in the Specifications, or mandated by governing codes or regulations, the recommendations, suggestions, and requirements described in the referenced standards shall be deemed mandatory and applicable to the Work

1. American Society for Testing and Materials (ASTM)

1.03 SUBMITTALS**A. Product Data**

Catalog sheets, specifications, and installation instructions for each type of joint sealant product specified except miscellaneous materials.

B. Samples for Initial Selection:

1. For general purpose use around windows and at relieving angles, Colors of Exposed Joint Sealants: Match Architect's samples.
2. For all other uses: provide Manufacturer's color charts consisting of strips of cured sealants showing the full range of Manufacturer's standard colors available for each product exposed to view.

C. Samples for Verification: For each type and color of joint sealant required, provide Samples with joint sealants in 1/2"wide joints formed between two 6" long strips of material matching the appearance of exposed surfaces adjacent to joint sealants**D. Quality Control Submittals**

1. Product Certificates: For each type of joint sealant and accessory, signed by product manufacturer.
2. Installer's Qualifications Data: Affidavit required under Quality Assurance Article.
3. Company Field Advisor Data: Name, business address, and telephone number of Company Field Advisor.
4. Preconstruction Test Results
 - a. Sealant manufacturer's test reports certifying compatibility and adhesion with all contiguous materials.
 - b. Sealant manufacturer's test reports certifying that the sealant will not stain contiguous materials.

c. The results of field adhesion testing.

E. Mockups

In accordance with Article titled Quality Assurance.

F. Low Emitting Materials Compliance Submittals

1. Provide documentation for each sealant, sealant primer and cleaner to be used on site and within the weatherproofing/waterproof membrane (interior) of the building, indicating that the sealants and primers meet V.O.C. requirements as stated in Specification Section G01600.

1.04 QUALITY ASSURANCE

A. Installer's Qualifications

The persons installing the sealants and their supervisor shall be personally experienced in the installation of sealants and shall have been regularly employed by a company engaged in the installation of sealants for a minimum of two years.

1. Furnish a letter from the sealant manufacturer, stating that the Installer is authorized to install the manufacturer's sealant materials.

B. Container Labels

Include manufacturer's name, trade name of product, kind of material, federal specification number (if applicable), expiration date (if applicable), and packaging date or batch number.

C. Preconstruction field-adhesion testing

Before installing sealants, field test their adhesion to Project joint substrates as follows:

1. Locate test joints as directed by Architect.
2. Conduct field adhesion tests for each kind of sealant and joint substrate.

3. Test using ASTM C1193 Method A: For joints with dissimilar substrates, verify adhesion to each substrate separately
4. Do not use sealants that fail to adhere to joint substrates during testing.

D. Mockups

Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle joint sealer materials as recommended by the Manufacturer, to protect from damage.

1.06 PROJECT CONDITIONS

A. Environmental Requirements

1. Temperature: Unless otherwise approved or recommended in writing by the sealant manufacturer, do not install sealants at temperatures below 40°F or above 85°F.
2. Humidity and Moisture: Do not install the Work of this Section under conditions that are detrimental to the application, curing, and performance of the materials.
3. Ventilation: Provide sufficient ventilation wherever sealants, primers, and other similar materials are installed in enclosed spaces. Follow manufacturer's recommendations.
4. Do not proceed with installation of joint sealants under the following conditions
 - a. When joint substrates are wet.
 - b. Where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.

- c. Contaminants capable of interfering with adhesion have not yet been removed from joint substrates.
- d. Surfaces are frozen.
- e. Surfaces are superheated by the sun.

B. Protection

- 1. Protect all surfaces adjacent to sealants with non-staining removable tape or other approved covering to prevent soiling or staining.
- 2. Protect all other surfaces in the Work area with tarps, plastic sheets, or other approved covering to prevent defacement from droppings.
- 3. Protect any painted surfaces which are not included in the Work from impact or damage.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Momentive Performance Materials-GE Silicones, Waterford, NY 12188
- B. Dow Corning Corp., Midland, Michigan 48686
- C. Pecora Corp., Harleyville, PA
- D. Tremco Sealants and waterproofing, Beachwood, OH 44122
- E. Bostik, Middleton, MA 01949
- F. Sika Corporation, Lyndhurst, NJ 07071
- G. Schul International, Pelham, NH 03076
- H. Emseal Joint Systems Ltd., Westborough, MA 01581

2.02 SEALANTS

- A. Type 1 Sealant (for use in vertical expansion joints where movement occurs; for general purpose use around windows, door frames, louvers, and other junctures).

1. One-part low-medium modulus silicone sealant (plus or minus 50% movement); ASTM C920 classifications type S, grade NS, class 25, uses NT, M, G, and A: General Electric Silpruf SCS2000, Dow Corning 791, Pecora 864NST, Tremco Spectrem 2 or Sika SikaSil WS 295.

Silicones shall meet the following requirements:

- ASTM C719 - Low-Medium Modulus (+ or - 50%). Sealants shall not exhibit any cracking or surface degradation after 5000 hours exposure in the Atlas Twin Arc Weatherometer.
- ASTM C661 - Shall not incur a durometer increase greater than 10 points.
- Sealants shall contain zero parts of toxic isocyanurate ingredients.

Provide custom colors for use around window perimeters, to match window frame or masonry, or other colors as determined by the Architect.

B. Type 1A Sealant (for use for pavements, walks, and curbs)

1. For Horizontal Joints: Two-part, self-leveling polyurethane sealant for traffic bearing construction; ASTM C920 classifications type M, grade P, class 25, uses T, M, A, and O (granite): Pecora Urexpan NR-200, or , Tremco THC 900/901 or Sika Sikaflex 2C SL.
2. For Vertical Joints: Two-part, non-sag polyurethane sealant; ASTM C920 classifications type M, grade NS, class 25, uses NT, M, A and O (granite): Pecora Dynatrol II, or Bostik Chem-Calk 505, Tremco Dymeric 240FC or Sika Sikaflex 2C NS.

C. Type 1B Sealant (for Plaza Decks)

1. For Horizontal Joints: One-part, self-leveling polyurethane sealant for traffic bearing construction; Pecora UrexpanNR-201, or Sika Sikaflex-1C SL, or Tremco Vulkem 45SSL.

2. For Vertical Joints: One-part, non-sag polyurethane sealant; ASTM C920 classifications type S, grade NS, class 25, uses NT, M, A and O (granite): Pecora Dynatrol I-XL, or Sika Sikaflex 15 LM, Tremco Dymonic.

- D. Type 1C Sealant - For general use around windows, store front systems, door frames, metal panel systems, metal coping, louvers, cast stone copings and other junctures where movement occurs.

One-part ultra-low modulus neutral cure silicone sealant; ASTM C920 classifications type S, grade NS, class 25, uses NT, M, G, A and O: Pecora 890 FTS; Tremco Spectrem-1 or Dow Corning 790 or Sika SikaSil WS 290.

Provide custom colors for use around window perimeters, to match window frame or masonry, or other colors as determined by the Architect.

- E. Type 1D Sealant (use at interior wet areas only-- Bath and Shower areas)

One-part, mildew resistant silicone sealant; ASTM C920 classifications type S, grade NS, class 25, uses NT, M, G and A: Dow Corning 786-M, General Electric Sanitary SCS1700, Pecora 898-NST, Sika Sikasil -N plus or Tremco Tremsil 200 with fungicide.

- F. Type 2 sealant (narrow joint seam sealer for joints & cracks 1/4" or less in width)

Silicone sealers: Pecora 1215 seam sealer or Dow Corning 1299

- G. Type 3 Sealant (for concealed bedding only).

One-part butyl rubber sealant; Pecora BC-158, Bostik Chem-Calk 300, or Tremco Butyl.

- H. Type 4 Sealant (use at high temperature applications, e.g., flues)

One-part silicone sealant for high temperature; ASTM C920 classifications type S, grade NS, class 25, uses NT, M, G, and A: Momentive Performance Materials-GE RTV 106, Dow Corning 736, Tremco Spectrem 1 or Sika Sikasil-GP HT Red

- I. Type 5 Sealant (use at relieving angles - between brick and stainless steel sealant edge)

One-component polyurethane sealant; ASTM C920 classifications type S, grade NS, class 25, uses NT, M, and A, Tremco - Dymonic 100, Sikaflex-15LM, Pecora Dynatrol I-XL

Provide custom paint colors for use at relieving angles.

- J. Pre-formed Sealant for exterior applications

1. Low modulus silicone sealants: Pecora Sil-Span, Sealex ImmerSeal, GE Ultraspun US1100.
2. Acrylic impregnated flexible polyurethane foam, such as Sealtite Standard by Schul International Co., Tremco Illmod 600 or Compriband.

- K. For sealants used on site and within the weatherproofing/waterproof membrane (interior) of the building comply with V.O.C. requirements specified in Section G01600.

- L. Precompressed Sealant

Acrylic impregnated compressible polyurethane foam precompressed to 50% of its uncompressed length **for** use behind a primary sealant: "Sealtite B" by Schul International or "Backerseal" by Emseal.

2.03 JOINT FILLERS

- A. Elastomeric Tubing Sealant Backings: (for precast panel joints not compatible with Silicone Sealants): Neoprene, butyl or EPDM tubing complying with ASTM D1056, nonabsorbent to water and gas, and capable of remaining resilient at temperatures down to minus 26°F (minus 32°C). Provide products with low compression set and of size and shape to provide a secondary seal, to control

sealant depth, and to otherwise contribute to optimum sealant performance.

ASTM D1056, Class SC (oil resistant and medium swell), 2 to 5 psi compression deflection.

- B. Expanded Polyethylene Joint Filler (for existing joints) Flexible, compressible, closed-cell polyethylene of not less than 10 psi compression deflection (25 percent).
- C. Closed-Cell Polyurethane or Closed-Cell Expanded polyethylene Joint Filler (for all cast-in-place concrete work).

Resilient, compressible, semi-rigid; W.R. Meadow Ceramar or equal.

- D. ASTM D1056, Class RE41 (for masonry joints) where shown on the Drawings.

2.04 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
 - 1. For primers used on site and within the weatherproofing/waterproof membrane (interior) of the building comply with V.O.C. requirements specified in Section G01600.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
 - 1. For cleaners used on site and within the weatherproofing/waterproof membrane (interior) of the building comply with V.O.C. requirements specified in Section G01600.

C Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

D. Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

1. Cylindrical Sealant Backings: ASTM C1330, Type C (closed-cell material with a surface skin), Type O (open-cell material) or Type B (bicellular material with a surface skin), as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:

E. Bond Breaker Tape

Polyethylene or other plastic tape as recommended by the sealant manufacturer; non-bonding to sealant; self-adhesive where applicable.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine all joint surfaces for conditions that may be detrimental to the performance of the completed Work. Do not proceed until satisfactory corrections have been made.

3.02 PREPARATION

A. Clean joint surfaces immediately before installation of sealant and other materials specified in this Section.

1. Remove all loose materials, dirt, dust, rust, oils and other foreign matter that will impair the performance of materials installed under this Section.

2. Remove lacquers, protective coatings and similar materials from joint faces with manufacturer's recommended solvents.
3. Thoroughly clean surfaces on which sealant is to be applied using methods such as grinding, acid etching or other approved and manufacturer's recommended means, if required, to clean the joint surfaces, assuring that the sealant materials will obtain positive and permanent adhesion.
4. Prime surfaces, if required, as recommended by Manufacturer before applying sealant.

B. For Pavements, Walks, and Curbs

1. Set joint fillers at proper depth and position as required for installation of bond breakers, backer rods, and sealants. Do not leave voids or gaps between the ends of joint filler units.
 - a. Smooth Edged Joints: For joints between two concrete slabs or where new concrete abuts smooth-edged materials, use either cork joint filler or closed cell polyurethane joint filler.
 - b. Irregular Edged Joints: For joints where new concrete abuts granite curbs or other irregular edges, use closed cell polyurethane joint filler.
 - c. Priming Joint Surfaces:
 - 1) Prime joints which are to receive Type 1A and 1B Sealants.
 - 2) For joints of friable (crumbly, chalky) masonry surfaces and other surfaces which are to receive Type 1 Sealant, prime as recommended by Manufacturer.
 - 3) Prime joints other than those above if so recommended by the manufacturer's printed instructions.

- 4) Do not allow the primer/sealer to spill or migrate onto adjoining surfaces.

3.03 JOINT BACKING INSTALLATION

- A. Install bond breaker tape in relaxed condition as it comes off the roll. Do not stretch the tape. Lap individual lengths.
- B. Install backer rod of sufficient size to fill the joint width at all points in a compressed state. Compress backer rod at the widest part of the joint by a minimum of 25 percent. Do not cut or puncture the surface skin of the rod.

3.04 SEALANT INSTALLATION

- A. Except as shown or specified otherwise, install sealants in accordance with the manufacturer's printed instructions.
- B. Install sealants with ratchet hand gun or other approved mechanical gun. Where gun application is impracticable, install sealant by knife or by pouring, as applicable.

C. Finishing

Tool all vertical, non-sag sealants so as to compress the sealant, eliminating all air voids and providing a neat smoothly finished joint. Provide slightly concave joint surface, unless otherwise indicated or recommended by the manufacturer.

1. Use tool wetting agents as recommended by the sealant manufacturer.

3.05 FIELD QUALITY CONTROL

- A. Field Adhesion Testing of Sealants - Test completed elastomeric joints as follows:
 1. Extent of Testing: Test completed elastomeric sealant joints as follows:
 - a. Perform 10 tests for the first 1000 feet of joint length for each type of elastomeric sealant and join substrate.

- b. Perform one test for each 1000 feet of joint length thereafter or one test per each floor per elevation.
 2. Test Method - Test joints by hand pull method described below:
 - a. Make knife cuts from one side of the joint to the other, followed by two cuts approximately 2 inches long at sides of joint and meeting cross cut at one end. Place a mark 1 inch from cross-cut end of 2 inch piece.
 - b. Use fingers to grasp 2 inch piece of sealant between cross-cut end and 1" mark, pull firmly at a 90 degree angle or more in direction of side cuts while holding a ruler along sides of sealant. Pull sealant out of joint to the distance recommended by the sealant manufacturer for testing adhesive capability, but not less than that equaling specified maximum movement capability in extension, hold this position for 10 seconds.
 - c. For joints with dissimilar substrates, check adhesion to each substrate separately. Do this by extending cut along one side, checking adhesion to opposite side.
 3. Inspect joints for complete fill, for absence of voids, and for joint configuration complying with specified requirements. Record results in a field-adhesion-test log.
 4. Inspect tested joints and report on the following:
 - a. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each type of product and joint substrate. Compare these results to determine if adhesion passes sealant manufacturer's field-adhesion hand-pull test criteria.

- b. Whether sealants filled joint cavities and are free of voids.
 - c. Whether sealant dimensions and configurations comply with specified requirements.
- 5. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant fill, sealant configuration, and sealant dimensions.
 - 6. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.
 - 7. Evaluation of Field Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.06 CLEANING

- A. Immediately remove misapplied sealant and droppings from metal surfaces with solvents and wiping cloths. On other materials, remove misapplied sealant and droppings by methods and materials recommended in writing by the manufacturer of the sealant material.
- B. After sealants are applied and before skin begins to form on sealant, remove all masking and other protection and clean up remaining defacement caused by the Work.

END OF SECTION

LIST OF SUBMITTALS

<u>SUBMITTAL</u>	<u>DATE SUBMITTED</u>	<u>DATE APPROVED</u>
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Product data:		
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- | | | |
|--|--|--|
| 1. Catalog sheets, specifications,
installation instructions for
each item specified | | |
|--|--|--|

Samples:		
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- | | | |
|--|--|--|
| 1. Manufacturer's color charts
for Initial Selection | | |
| 2. Samples for Verification
for each type and color
of joint sealant | | |
| 3. Color samples for paint for
type of sealant/application | | |

Quality Assurance		
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- | | | |
|---|--|--|
| 1. Manufacturer's Product
Certificates | | |
| 2. Installer's Qualifications Data | | |
| 3. Company Field Advisor Data | | |
| 4. Manufacturer's test reports
certifying compatibility | | |
| 5. Manufacturer's test reports
certifying that sealant will
not stain | | |
| 6. Pre-construction field
adhesion test reports | | |

Mockups:		
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- | | | |
|------------------|--|--|
| 1. Each location | | |
|------------------|--|--|

* * *

State University of New York
Construction Agreement

This Agreement (referred to alternately as "Agreement" or "Contract") 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, 353 Broadway, Albany, New York 12246, on behalf of State University of New York at **Purchase College** located at **735 Anderson Hill Road, Purchase, New York 10577** hereinafter referred to as "University" and _____ having its principal office located at _____, and a Federal ID or Social Security No. of {insert number}, hereinafter referred to as "the Contractor."

WITNESSETH:

The parties hereto agree that the Contractor shall:

(a) furnish and perform all work of every kind required and all other things necessary to complete in the most substantial and workmanlike manner the construction of

Project Number SU-111320
Neuberger Museum Southwest Courtyard
At Purchase College, SUNY

in strict accordance with the Contract Documents; and

(b) complete all work necessary for substantial completion **within 120 days** after the date of the Notice to Proceed, or within the time to which such completion may have been extended in accordance with the Contract Documents;

(c) in the event it fails to substantially complete all the work on time, pay to the University liquidated damages in accordance with the liquidated damages schedule listed on page one of the contractors proposal for each calendar day of delay of substantially completing all the work; and

(d) do everything required by the Contract; subject, however, to the terms, provisions and conditions listed hereinafter.

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:

Allowance Any and all work and materials which may be required of the Contractor in performing work set forth under one or more allowances to this Agreement shall be Work, as defined herein, which shall be performed in accordance with the base schedule for the performance of the Contractor's Work. Contractor shall not be entitled to an extension of time for the performance of an allowance or all allowances.

Consultant The Architect or Engineer 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 Notice to Bidders, Information for Bidders and Proposals

Bonds Performance Bond and Labor and Material Bond

Delay For purposes of this document and as used herein and in any other contract documents between the Contractor and the University the word "delay" shall be interpreted broadly and shall include by way of

State University of New York
Construction Agreement

example only and not by way of limitation: delay, disruption, interference, inefficiencies, impedance, hindrance, acceleration, resequencing, schedule impacts, lack of timeliness by the University and/or Consultant, and lack of coordination, cumulative impact of multiple change orders, delay and other impacts.

Contract or Contract Documents	The Agreement, Exhibits A and A-1, Bidding Documents, Bonds, Specifications, Project Manual, Drawings Addenda issued prior to the opening of bids and Change Orders issued after award of the Contract.
University	State University Construction University
Notice to Proceed	Written notice provided by the University to the Contractor stating the date on which the contractor can begin project work.
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.
Substantial Completion	Substantial Completion is the completion of Work so that the Project can be fully occupied and used for the purposes for which it is intended. Substantial Completion includes: (1) completion of all work required for the issuance of a code compliance certificate, or a temporary approval for occupancy, completed in a manner that includes no uncorrected deficiency or material violation of the Building Code of New York State within the area or work for which the certificate is to be issued; (2) completion of all building systems and functional testing of said systems (other than tests that cannot be performed due to the seasonal environmental conditions in effect at the time of completion); (3) acceptance and approval of the Operating Instructions and Manuals and Training of Campus Personnel; and (4) the sum of values determined for Punch List work at the time of Substantial Completion shall not exceed one (1) percent of the amount of the Contract consideration unless otherwise agreed to by the University.
Work	The using, performing, installing, furnishing and supplying of all materials, equipment, labor, services 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.

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 and abbreviations which have a well-known, technical or trade meaning shall be interpreted as having such meaning in connection with the Contract.

Section 1.04 Entire Agreement

The Contract 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, Assigns and Agents

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 University Fund act as its agent 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.

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

State University of New York
Construction Agreement

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 to 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) Exhibit A and A-1, (b) Addenda (later dates to take preference over earlier dates); (c) Amendments to Agreement; (d) Agreement; (e) Bidding Documents; (f) Specifications; (g) Schedules (i.e. finish schedules); (h) Large scale detail Drawings (detail drawings having a scale of 3/4" and over); (i) 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); (j) Small scale detail Drawings (detail drawings having a scale of less than 3/4"); and (k) 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 University shall establish the format for the Contract Documents (hard copy and/or electronic media) at the start of the Project. The Contractor shall be furnished, free of charge, with two (2) copies of the Specifications and Drawings in the selected format(s). Any other copies of the Specifications and Drawings which the Contractor may desire can be obtained at the Contractor's expense.

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

The Contractor hereby agrees that the Contract was secured without collusion or fraud and that neither any officer nor any employee of the University has or shall have a financial interest in the performance of the Contract or in the supplies, work or business to which it relates, or in any portion of the profits thereof.

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Section 1.12 Notices

- (1) All notices permitted or required hereunder shall be in writing and shall be transmitted either:
- a. via certified or registered United States mail, return receipt requested;
 - b. by personal delivery;
 - c. by expedited delivery service; or
 - d. by email if actually received by the University. Contractor bears the burden of proof of service by email and receipt of email by the University.

Such notices shall be addressed as follows or to such different addresses as the parties may from time to time designate:

Purchase College

Name: Elizabeth Pleva

Title: Interim Director of Procurement and Accounts Payable

Address: 735 Anderson Hill Road, Purchase, New York 10577

Telephone Number: 914-251-6070

{insert company name}

Name: {insert designated contact's title}

Title: {insert designated contact's title}

Address: {insert company}

Telephone Number: {insert phone}

E-mail Address: {insert email}

- (2) Any such notice shall be deemed to have been given either at the time of personal delivery or actual receipt by the University, or in the case of email, upon receipt by the University.
- (3) The parties may, from time to time, specify any new or different address in the United States as their address for purpose of receiving notice under this Agreement by giving fifteen (15) days written notice to the other party sent in accordance herewith. The parties agree to mutually designate individuals as their respective representatives for the purposes of receiving notices under this Agreement. Additional individuals may be designated in writing by the parties for purposes of implementation and administration/billing, resolving issues and problems and/or for dispute resolution.

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 neutral 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 and/or direction 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 and/or direct 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.

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- (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 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 and after a court of competent jurisdiction determines the University's said decision or determination to be fraudulent, capricious, arbitrary or so grossly erroneous as necessarily to imply bad faith in an action brought in accordance with Section 4.24.

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. Notwithstanding the provisions of Section 1.12 of the Agreement and any other provisions of the Contract documents to the contrary, 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 fifteen (15) 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. Notwithstanding the provisions of Section 1.12 of the Agreement and any other provisions of the Contract documents to the contrary, 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, including an initial and updated detailed Time Progress Schedule,
 - d. Produce for the University's examination, upon notice from the University, such information and documentation as directed by the University, which shall include but not be limited to job cost reports and all estimates and documentation used to develop the Bid Proposal, all its books of account, bills, invoices, payrolls, subcontracts, time books, progress records, daily reports, bank deposit books, bank statements, checkbooks and cancelled 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.

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- (2) The Contractor's failure to comply with any or all parts of subdivision b, c and d 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, c and d 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 or 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) The Contractor's failure to submit and maintain a Time Progress Schedule in accordance with Section 3.02 of the Agreement shall be deemed to be a waiver by the Contractor of all claims for additional time, compensation or damages as a result of any condition which is an alleged cause of delay in the completion of the work. The Schedule of Record, regularly updated and submitted at required durations in accordance with the provisions of the General Requirements, Section paragraph titled "Project Schedule": (i) informs the University and affords it promptly of regular opportunities to change its plans or mitigate or remedy the effects or circumstances giving rise to a claim of delay in the completion of the work or take such other action as may seem desirable to verify any claimed circumstances as they occur; and (ii) forms a record which becomes the basis of the University's verification of an alleged cause of delay in the completion of the work.
- (4) 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.
- (5) 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 or Field 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 or 4.05A 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 Change Order or Field Order or as otherwise required by the University thereto providing for extra work of either a qualitative or quantitative nature and in such event the Contract consideration may be increased by an amount to be determined in accordance with the provisions of Sections 4.02 and 4.05A of the Agreement and the completion date for all or any part of the work may 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., 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 or an extension of time 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 the University believes is incorrect; in the event the University exercises such

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right, that 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 work in 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, approved by the Consultant and the University, 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.
- (3) If the superintendent, project manager or other supervisory employees are not satisfactory to the University, the Contractor shall, if directed by the University, immediately replace such supervisory employees with other supervisory employees acceptable to the Consultant and the University. Such replacement and all related impacts shall be at no additional cost to the University.

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 a disciplined orderly manner and in accordance with the Time Progress Schedule and the contractually required time of performance. All workers engaged in special 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 from 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 therefrom. 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 Agreement 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 Building Code of New York State and the applicable Federal and State health and labor laws and regulations.

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 benchmark and one (1) fixed base line at

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the site. The Contractor shall work from the benchmarks 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 or Field Order may be issued, the amount of which shall be determined in accordance with the provisions of Sections 4.02 and 4.05A, 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 4.02 and 4.05A 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 unforeseeable 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 that 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

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request, such removal shall be deemed extra work and the Contractor shall be compensated therefor in accordance with the provisions of Sections 4.02 and 4.05A 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 or permit the letting of 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 Agreement 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 Agreement 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 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.
- (3) 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 reception 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 prove that the materials and/or work tested do not meet the requirements of the Contract, then the entire cost of such tests and any additional testing and or inspections required until the work is deemed compliant 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 therefor, 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 or it may cancel the Contract and terminate the Contractor's employment as provided in the Agreement.
- (3) The Contractor, without additional charge, shall promptly furnish all reasonable facilities, labor materials and equipment with associated operators necessary for the safe and convenient access, 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

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or, if the same is to be performed by a governmental authority, of the date fixed therefor. 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 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 Sections 4.02 and 4.05A.
- (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 receipt of the notice to proceed, 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 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 ten (10) 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

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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.

- (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 Agreement 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 conformed 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 Agreement 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, Submittal, Mockup, and Sample schedules 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 and mock-ups 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. Shop drawings include drawings, diagrams, schedules, product data and other information or materials specially prepared for the work by the Contractor to illustrate some portion of the work. Product data include standard illustrations, schedules, performance charts, instructions, brochures, diagrams and other information identified by the Contractor to illustrate materials or equipment for some portion of the work.
- (3) All Shop Drawings, mock-ups 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. 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 and sequence 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) At the start of the Project, the format for submittals shall be established by the University. If an electronic method is selected for the submission and approval of submittals, the Contractor shall provide submittals in a PDF format and the Consultant will return the submittals in electronic format to the Contractor. For both hard-copy and electronic submittal formats, all submittals that require physical samples or mock-ups shall be provided in

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accordance with the requirements set forth in the Contract Specifications. Shop Drawings and Samples, submitted by the Contractor in accordance with the approved Shop Drawing and Sample schedule that is included in the Time Progress 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. Should more than two (2) separate reviews of any required shop drawings or samples submitted be necessary, in the judgement of the Consultant and the University, the Contractor shall be responsible for the reasonable costs incurred by the University for such additional reviews by the Consultant.

- (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, 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 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.
- (9) The Contractor may be required to provide professional services that constitute the practice of architecture or engineering when specifically required by the Contract Documents for a portion of the work or the Contractor needs to provide such services in order to carry out its responsibilities for construction means, methods, techniques, sequences and procedures. When professional services are required in the Contract Documents, the Consultant will specify all performance and design criteria that such services must satisfy. The University and Consultant shall be entitled to rely on the adequacy, accuracy and completeness of the professional services, certifications, and approvals performed or provided by design professionals working for the Contractor.
- (10) Contractor agrees that the University may deduct from any application for payment made by the Contractor, any and all Design Professional, Consultant and/or Construction Management fees and costs incurred by the University together with a markup upon such hard costs in the amount of 15% in the review or evaluation of any substitutions for methods, products or performance pursuant to this Section 2.19.

Section 2.20 Equivalents - Approved Equal

(1) Equivalents or Approvals - General

- a. The words "similar and equal to", or equal", "equivalent" and such other words of similar content and meaning shall for the purposes of this Agreement be deemed to mean similar and equivalent to one of the named

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products. For the purposes of subdivisions (1) and (2) of this Section and for the 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.

- b. 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 (2) 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.
 - c. Nothing in the Contract Documents shall be construed as representing, expressly or implied, 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.
 - d. 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.
 - e. Requests for approval of proposed equivalents will be received by the Consultant only from the Contractor.
 - f. Approval shall in no way be construed as: (a) permitting any departure whatsoever from the Contract Documents, (b) relieving the Contractor of full responsibility for any error in quality of materials, details, dimensions, sequence of work, 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 to achieve a functionally complete facility or result 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.
 - g. Contractor agrees that the Contractor approves and authorizes the deduction from Contractor's applications for payment any and all costs incurred by the Construction Manager, Consultant, Design Professional or otherwise in evaluating Contractor's submissions under this Section 2.20, together with a markup upon such hard costs in the amount of 15%.
- (2) Equivalents or Approvals After Bidding
- a. Any and all submissions for "or equal" products which are submitted by the Contractor after award of the Contract must be made by the Contractor within ninety (90) calendar days after the date of award. Contractor agrees that it waives and relinquishes the right, claim or privilege, if any, to submit "or equal" proposals if such are made ninety (90) calendar days after the date of award of the Contract to the Contractor.
 - b. 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.

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- c. Where the Consultant pursuant to the provisions of this 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 Agreement, all such revision and redesign and all new Drawings and details required therefor shall be subject to the approval of the Consultant and shall be provided by the Contractor at its own cost and expense.

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.

- (3) Contractor agrees that the University may deduct from any application for payment made by the Contractor any and all Design Professional, Consultant and/or Construction Management fees and costs incurred by the University, together with a markup upon such hard costs in the amount of 15%, in the consideration or evaluation of any substitutions for methods, products or performance pursuant to this Section 2.20.

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 any time 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. 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

(1) Partial Completion

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 action 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. The partial completion of any portion of the Contractor's work by the University, the Campus or the Consultant, shall not impact the assessment of liquidated damages or actual costs for delays or disruption to the Project caused by the Contractor, its subcontractors or vendors.

(2) Substantial Completion

When all the Work covered by the Contract is substantially completed, as defined in Section 1.01, 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

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thereafter, of "Punch Lists", i.e., lists of uncompleted or corrective work which the Contractor is to promptly complete and/or correct. In the judgement of the University, should more than two (2) separate inspections of the Work be necessary, the Contractor agrees that the University may deduct from any application for payment made by the Contractor, any and all Design Professional, Consultant and/or Construction Management fees and costs incurred by the University together with a markup upon such hard costs in the amount of 15% for all such additional inspections.

The Contractor must fully, completely and acceptably perform all Punch List work and any other work subsequently discovered remaining to be completed or corrected, within ninety (90) calendar days of Substantial Completion or within such other timeframe stipulated by the University or Consultant. Failure to complete the Punch List within the time so designated hereunder may be deemed default on the part of the Contractor.

(3) Final 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. In the judgement of the University, should more than two (2) separate inspections of the Work be necessary, the Contractor agrees that the University may deduct from any application for payment made by the Contractor, any and all Design Professional, Consultant and/or Construction Management fees and costs incurred by the University together with a markup upon such hard costs in the amount of 15% for all such additional inspections.

Section 2.24 Record Drawings

- (1) At the start of the Project, the format for Record Drawings shall be established by the University. 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 for hard copy format or electronic editing tool in contrasting color for electronic format, 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 anchorages 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, Field 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; (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; and (f) final make and model for all significant equipment and devices listed in the specifications. The Contractor shall also provide an electronic version as determined by the Consultant.
- (2) Periodically during the work, the Consultant may request submission of a progress set of Record Drawings for review and advise the Contractor of errors or omissions, if any, that must be corrected or completed prior to final submission of the Record Drawings. Shop Drawings shall not be acceptable as Record Drawings.
- (3) The Contractor shall submit the Record Drawings to the Consultant at least fifteen (15) days prior to the date of Substantial Completion. The Consultant will then review the Record Drawings and, if they shall determine that the Record Drawings represent the actual field construction being completed, they shall so advise the Contractor. If not satisfactory, the Record Drawings will be appropriately marked and returned to the Contractor for correction thereof, in which event the Contractor shall promptly correct and resubmit to the Consultant a corrected copy of the Record Drawings. Acceptance of the Record Drawings by the University is a condition precedent to the Contractor's entitlement to receive Final Payment.

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

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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 becomes insolvent; or if
 - b. The Contractor makes an assignment for the benefit of creditors pursuant to the statutes of the State of New York; or if
 - c. A voluntary or involuntary petition in bankruptcy is filed by or against the Contractor; or if
 - d. A receiver or receivers are appointed to take charge of the Contractor's property or affairs; or if
 - e. The Contractor fails to commence work when notified to do so by the Consultant; or if
 - f. The Contractor shall abandon the work; or if
 - g. The Contractor shall refuse to proceed with the work or extra work when and as directed by the Consultant or the University; or if
 - h. 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
 - i. The Contractor shall sublet, assign, transfer convey, or otherwise dispose of the Contract other than as herein specified; or if
 - j. The University shall be of the opinion that 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
 - k. The University shall be of the opinion that the work cannot be completed within the time herein provided therefor 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
 - l. The work is not completed within the time herein provided therefor or within the time to which the Contractor may be entitled to have such completion extended; or if
 - m. The University shall be of the opinion that the Contractor is or has been willfully or in bad faith violating any of the provisions of this Agreement;

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- n. The University shall be of the opinion that the Contractor is not or has not been executing the Contract in good faith and in accordance with its terms; or if
 - o. At any time during the period of the Agreement, insurance as required is not in effect or proof thereof is not provided to the University.
- (2) Before the University shall exercise its right to declare the Contractor in default by reason of the conditions set forth in the above items *a, b, c, d, e, f, g, h, i, j, k, l, m, n* and *o*, 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.
- (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 certificate 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

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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 applicable by law.

Section 2.27 Termination for Convenience

- (1) The performance of work under this Agreement 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. 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 action 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 cancelled. 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 foregoes reimbursement therefor;
 - 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.

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- (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 allowability 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 Sections 4.02 and 4.05A 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 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 this 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 upon receipt of notice to proceed, unless the University consents in writing, to begin at a different date, and that it will prosecute the same with such diligence that all work covered by the Contract shall be substantially completed and performed on or before the time specified on page one of the Agreement.
- (2) The Contractor further agrees that time is of the essence in this Agreement and that all the work shall be prosecuted in such manner and with sufficient plant and forces to complete all work timely.

Section 3.02 Time Progress Schedule

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- (1) To show compliance with the requirements of Section 3.01 of the Agreement, provide and maintain a Time Progress Schedule in accordance with the General Requirements, Special Conditions, Section paragraph titled "Project Schedule". Unless otherwise accepted by the University, the Time Progress Schedule shall be strictly adhered to by the Contractor. The time for substantial completion shall be on or before the time specified on page one of the Agreement.
- (2) 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.
- (3) The failure of the Contractor to submit a Time Progress Schedule, the University's or the Consultant's acceptance of the Contractor's time progress schedule or lack of such acceptance, the means and/or methods of construction employed by the Contractor, including any revisions thereof, and/or its failure to revise the same shall not relieve the Contractor of its obligation to accomplish the result required by the Contract in the time specified on page one of the Agreement, nor shall the exercise of the Consultant's or the University's right to reject any portion of the work, create or give rise to any claim, action or cause of action, legal, equitable or otherwise, against the Consultant or the University.
- 4) The failure of the Contractor to submit and maintain a Time Progress Schedule in accordance with the General Requirements shall be deemed to be a waiver by the Contractor of all claims for additional compensation or damages as a result of any condition which is an alleged cause of delay in the completion of the work.

Section 3.03 Time Progress Schedule for Shop Drawings and Samples

The Contractor shall include activities for preparation and submission of all Shop Drawings, mock-ups and Samples in the Time Progress Schedule in Section 3.02.

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 or require Contractor to request an extension of time, 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) Contractor agrees that an express condition precedent to Contractor's entitlement to any extension of time on the project shall be full and complete compliance to the satisfaction of the University with the Contractor's obligations in Section 3.06, Contractor's Progress Reports. Failure to submit proper Contractor's progress reports in appropriate and timely fashion shall be deemed a waiver and relinquishment of any right, claim or privilege to obtain an extension of time for the performance of the Contractor's work.
- (3) 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.
- (4) Except as otherwise set forth in this Section 3.04 all procedures set forth in Sections 2.02 and 2.03 of this Agreement shall be complied with by the Contractor. Furthermore, full and complete compliance with the requirements of this Article III is a condition precedent to the Contractor's entitlement to receive an extension of time.

Section 3.05 Extension of Time

- (1) Within ten (10) working days after the commencement of any condition which is causing or may cause the Contractor to incur, require or otherwise need an extension of time, the Contractor shall notify the Consultant and the University of such condition. Full and complete compliance with this paragraph 3.05(1) is a condition precedent to the Contractor obtaining an extension of time for performance of any portion or all of its work.
- (2) 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 therefor by the Contractor to the University and the Consultant.

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- (3) 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.
- (4) If such an application is made, the Contractor may 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).
- (5) The Contractor may, 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.
- (6) 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 material-men 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 an act, fault or omission.
- (7) 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.
- (8) 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.
- (9) The Contractor shall not be entitled to an extension of time for the performance of any or all of the Work set forth in allowances to the Contract. All allowance work shall be performed in accordance with the Contractor's schedule.

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 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. Contractor agrees that compliance with this Section 3.06 is an express condition precedent to the Contractor's right, claim or entitlement to obtain an extension of time for the performance of the Contractor's work. Failure to comply with this Section 3.06 shall be a waiver and relinquishment of all such rights, claims and privileges to request or obtain an extension of time for the performance of Contractor's work.

Article IV
Payment

Section 4.01 Compensation to Be Paid Contractor

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The University shall pay to the Contractor and the latter shall accept as full and complete payment for the performance of this Agreement, subject to additions or deductions as provided herein, the sum of **dollars (\$«Total_Bid»)**, which sum is the amount of the Contract consideration.

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 or Field Order shall be determined by the University by one or more of the following methods:

- a. By applying the applicable price or prices set forth on the attached Schedule "I" of this Agreement or by applying a unit price agreed to by both parties. Subject to the provisions of Section 4.04, this method must be used if the Contract Documents contain applicable unit prices.
- b. 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. There is no markup on the premium portion of overtime labor. 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.

No overhead and profit shall be retained by the Contractor on the cost of work determined by the method provided in Subparagraph (1)a.

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 therefor 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.

- c. By determining the actual cost of the extra work in the same manner as in the above subdivision b except that actual costs of the Contractor shall be utilized in lieu of estimated costs. The University shall have the option to utilize 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 or Field 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 in a format approved by the University.
- (3) Equipment Watch Rental Rate Blue Book (published online by Intertec Penton Media, Inc.) or other published rates as approved by the University in writing, will be utilized for the equipment rental pricing. 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 as follows: take the monthly rate listed in Equipment Watch 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. The Contractor will submit an actual rental invoice, or acceptable quotation from

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a bonafide equipment rental supplier for rented equipment when equipment is not owned by the Contractor. The equipment rental supplier cannot be an "affiliate" of the Contractor, nor in any way be related to the Contractor. If submitted invoices/quotations are acceptable to the University, the Contractor will be reimbursed the actual rental cost including sales tax and appropriate mark-up. If no listing of rates for an item of equipment is contained in Equipment Watch, the University shall determine the reasonable rate of rental of the particular item of equipment by such other means as it finds appropriate. The edition Equipment Watch to be used shall be that in effect on the date of the receipt of bids for this Agreement. None of the provisions of Equipment Watch shall be deemed referred to or included in this Agreement 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 therefor 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 or Field 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 Agreement, the University may 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 may calculate and determine the amount of the adjustment in the Contract consideration by estimating such costs. There is no markup on bond or insurance premium adjustment.

Section 4.04 Unit Prices

- (1) Except as otherwise provided in the second paragraph of this Section, the unit prices, set forth on the attached Schedule "I" of this Agreement, 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 whatsoever 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 said 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 therefor set forth in said Schedule "I".

Section 4.05 Allowances

- (1) The Contractor acknowledges that the Contract consideration includes the allowances set forth on the attached Schedule "II" and "III" of this Agreement and, except for quantitative and field order 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 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

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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 of the cash allowances listed below are 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 on the attached Schedule "I" of the Agreement, 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 Sections 4.02, 4.04 and 4.05A of the Agreement.

Section 4.05A Field Orders

When the Agreement contains a Field Order Allowance, the bid shall include the amount of such allowance. Said amount shall cover the cost of additional labor, materials and time for contingent activities within the scope of the Agreement as directed and described by the University in writing in a Field Order. The Field Order will include a description of the work and the method for determining the value of such work. The value of the work directed under this allowance will be determined by one or more of the provisions of Section 4.02. If the net cost(s) of all Field Orders issued are more or less than the specified amount of the allowance, the Contract sum will be adjusted by Change Order.

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 Agreement, 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, including but limited to the University's Job Order Contracting Program, 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 backcharge 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. The Contractor agrees that the University may deduct from any application for payment made by the Contractor, any and all Design Professional, Consultant and/or Construction Management fees and costs incurred by the University together with a markup upon such hard costs in the amount of 15% for services required in connection with the correction of such deficiency(ies).
- (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 one of this 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

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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 one of the Contractor's proposal, as stated on page one of this agreement. . 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. The Contract Breakdown Summary shall be further broken down as required by the Consultant and the University. 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) Until such time that the Contract is approved by the University, 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 a retained amount equal to 5 percent thereof (i.e. retainage) , 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, , together with any back charges and offsets which are deemed necessary or likely to be incurred by the University as a result of any failure by the Contractor to fully, completely, accurately and timely perform its work, 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

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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 and all required supporting documentation shall be submitted using the University's prescribed forms. The Contractor shall include with such applications reports detailing actual payments to minority and women-owned businesses who participate on University projects. 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 therefor; 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 cancelled and that it will be automatically renewed upon expiration and continued in force unless the University is given thirty (30) days written notice to the contrary.

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- d. The Contractor shall develop and provide a preventive maintenance log for stored equipment when determined appropriate by the Consultant. The Contractor shall provide timely notification and opportunity for the Consultant and the University to view the Contractor's preventative maintenance efforts.
- (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 and/or additional time 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 whatsoever 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

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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 be 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 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, 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.
- d. 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.

Section 4.19 Acceptance of Final Payment

- (1) The acceptance by the Contractor, or by any one 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 same, shall pay. Such application and payment shall be in an amount

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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 the completion date **{insert completion date}** unless the date/duration listed on page one of this agreement, is extended in writing by the University.

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 therefor; 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.

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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 Supreme Court of the State of New York in and for the County of Albany;
 - 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 shall have provided the University with an electronic version of any claims, including all required information and copies of all contractually required notices that the Contractor provided to the University and the Consultant throughout the duration of the Contract ;
 - c. Such action or proceeding by the Contractor shall be commenced within eighteen months after the date of substantial completion set by the University or its Consultant and issued in writing to the Contractor. Any action or proceeding not commenced within this time frame shall be dismissed with prejudice.
 - 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.
 - e. All claims and disputes which are subject to or related to this Agreement and the Project shall be subject to non-binding mediation, at the sole option and discretion of the University. Should the University at its sole option and in the exercise of its sole discretion elect to mediate under this clause, then a letter from the University indicating the completion of such mediation shall be a condition precedent to any litigation by Contractor against the University or the State of New York. In the absence of the University exercising its right to proceed to mediation, the condition precedent to any litigation against the University of the State of New York, shall be a letter citing that the University declines its rights under this clause. The costs of any mediation shall be paid equally by the parties to the mediation.
- (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.

Section 4.25 Electronic Payments

The Contractor shall provide complete and accurate payment applications in order to receive payment. Payment applications submitted must contain all information and supporting documentation required by the University. Payment for applications submitted by the Contractor shall only be rendered electronically unless payment by paper check is expressly authorized by the University's sole discretion, due to extenuating circumstances. Such electronic payment shall be made in accordance with ordinary State procedures and practices. The Contractor shall comply with the State Comptroller's procedures to authorize electronic payments. Authorization forms are available at the Office of the State Comptroller's 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 Agreement if it does not comply with the State Comptroller's electronic payment procedures, except where the University has expressly authorized payment by paper check as set forth above.

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 and OSHA and with all valid rules and regulations thereunder. The Contractor's attention is specifically called to the applicable rules and regulations, codes and bulletins of the New York State Department of Labor.

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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 therefor in accordance with the provisions of Section 4.02.

Section 5.04 Fire Safety

- (1) If the existing building is to be partially occupied during the course of the project, all existing exits except those shown for closure, fire walls, fire barriers and fire protection systems shall be continuously maintained in the occupied phases in compliance with the Fire Code of New York State and as required by NFPA 241 and as recommended in its Annex A, Explanatory Material, or other measures must be taken which in the opinion of the Consultant will provide equal safety. Those portions occupied by the campus must be available for their use 24 hours a day, seven days a week during the contract period unless otherwise scheduled in these documents. Comply with all applicable State and Federal codes and regulations. Prior to removal of existing fire walls, fire barriers and fire protection systems, if such removal is part of the work, install equivalent temporary fire walls, fire barriers and fire protection systems. The cost of all labor, fire watches, variances, materials, installations, maintenance and removal of such temporary fire protection systems or modifications to the existing systems are the responsibility of the Contractor. Install permanent fire walls, fire barriers and fire protection systems, if provided as part of the work, as soon as practical and as required by NFPA 241 and as recommended in its Annex A, Explanatory Material.
- (2) Solid fuel salamanders and heaters shall not be used by the Contractor or any of its subcontractors. 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) To the fullest extent permitted by law, 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, material man 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 finally 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

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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.
- (2) To the fullest extent permitted by law, 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) General Requirements

- a. Prior to the commencement of the work to be performed by the Contractor, the Contractor shall procure at its sole cost and expense, and maintain in force at all times during this Agreement until Final Payment and as further required by the Contract, policies of insurance as herein set forth below. All insurance shall be written by insurance carriers approved by the University, licensed to do business in the State of New York ("admitted" carriers), and rated at least "A-" by A.M. Best Company.
- b. Prior to the commencement of the work, the Contractor shall submit to the University, certificates of insurance, in a form acceptable to the University, showing evidence of compliance with all insurance requirements contained in this Agreement. Certificates of Insurance (with the exception of Workers' Compensation and Disability) must be provided on an ACORD 25 Certificate of Insurance, or an equivalent form. Certificates of Insurance shall disclose any deductible, self-insured retention, aggregate limit or any exclusion to the policy that materially changes the coverage required by the Contract; specify the additional insureds and named insureds as required herein; and be signed by an authorized representative of the insurance carrier or producer. Deductibles or self-insured retentions above \$25,000 are subject to approval by the University and additional security may be required. Certificates shall reference the Contract number. Only original documents will be accepted.
- c. All insurance shall provide that the required coverage apply on a primary and not on an excess or contributing basis as to any other insurance that may be available to the University for any claim arising from the Contractor's work under this Agreement, or as a result of Contractor's activities. Any other insurance maintained by the University shall be in excess of and shall not contribute with the Contractor's insurance, regardless of the "other insurance" clause contained in the University's own policy of insurance. A copy of the endorsement reflecting this requirement may be requested by the University.
- d. Not less than thirty days prior to the expiration date or renewal date, the Contractor shall supply the University with updated replacement certificates of insurance and endorsements. The Contractor shall advise the University of any letter or notification that cancels, materially changes, or non- renews the policy and Contractor shall require the insurance carrier(s) to copy the University on any letter or notification that cancels, materially

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changes, or non- renews the policy. If, at any time during the period of the Agreement, insurance as required is not in effect, or proof thereof is not provided to the University, the University shall have the options to (i) direct the Contractor to stop work with no additional cost or extension of time due on account thereof; or (ii) treat such failure as an event of default under Section 2.26 of the Agreement. At any time the coverage provisions and limits of the policies required herein do not meet the provisions and limits set forth in the Agreement the Contractor shall immediately cease Work on the Project. The Contractor shall not resume Work on the Project until authorized to do so by the University. Any delay or time lost as a result of the Contractor not having insurance required by the Agreement shall not give rise to a delay claim or any other claim against the University. If required by the University, Contractor shall deliver to the University within forty-five (45) days of such request, a copy of any or all policies of insurance not previously provided, certified by the insurance carrier as true and complete.

- e. Should the Contractor engage a subcontractor, the Contractor shall impose the insurance requirements of this document on those entities, as applicable. Required insurance limits should be determined commensurate with the work of the subcontractor. Contractor shall keep the subcontractor certificates of insurance on file and produce them upon the demand of the University.
- f. The aggregate insurance limits set forth herein shall apply separately to each contract for which a certificate of insurance and/or policy is issued.
- g. Unless otherwise agreed to in writing by the University, policies must be endorsed to provide that there shall be no right of subrogation against the University. To the extent that any of the policies of insurance prohibit such a waiver of subrogation, Contractor shall secure the necessary permission to make this waiver.
- h. Except as otherwise specifically provided herein or agreed in writing, policies must be written on an occurrence basis. The insurance policy(ies) shall name the State University Construction Fund, State University of New York, State of New York, its officers, agents, and employees as additional insureds thereunder. The additional insured requirement does not apply to Workers' Compensation or Disability coverage. Include ISO Endorsement CG 20 10 11 85 or its equivalent.

(2) Specific Coverage and Limits

The Contractor shall obtain and maintain in full force and effect, the following insurance with limits not less than those described below and as required by the terms of the Contract, or as required by law, whichever is greater:

- a. **Commercial General Liability Insurance.** A Commercial General Liability insurance policy with coverage that shall include, but not be limited to coverage for bodily injury, property damage, personal/advertising injury, premises liability, independent contractors, blanket contractual liability including tort liability of another assumed in Contract, liability arising from all work and operations under this Agreement, defense and indemnification obligations, including those assumed under Contract, cross liability coverage for additional insureds, products/completed operations for a term no less than three years commencing upon acceptance of the work, explosion, collapse, and underground hazards, contractor means and methods, and liability resulting from Section 240 or Section 241 of the NYS Labor Law. The limits under such policy shall not be less than **\$2,000,000 each occurrence; \$2,000,000 general aggregate; and products/completed operations with an aggregate limit of \$2,000,000.**
- b. Workers Compensation and Disability Benefits as required by New York State.
- c. **Comprehensive Business Automobile Liability Insurance.** A policy with a combined single limit for bodily injury and property damage of no less than \$1,000,000 covering liability arising out of the use of any motor vehicle in connection with the work, including owned, leased, hired, and non-owned 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. If the Contract involves the removal of hazardous waste from the project site or otherwise transporting hazardous materials, pollution liability coverage for covered autos shall be provided by form CA 99 48 03 06 or CA 00 12 03 06 and the Motor Carrier Act Endorsement (MCS90) shall be attached.
- d. **Umbrella and Excess Liability.** When the limits of the Commercial General Liability, Auto, and/or Employers Liability policies procured are insufficient to meet the limits specified, the Contractor shall procure and maintain

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Commercial Umbrella and/or Excess Liability policies with limits in excess of the primary, provided, however, that the total amount of insurance coverage is at least equal to the requirements set forth above. Such policies shall follow the same form as the primary. Any insurance maintained by the University or additional insured shall be considered excess of and shall not contribute with any other insurance procured or maintained by the Contractor including primary, umbrella and excess liability regardless of the "other insurance" clause contained in either party's policy.

- e. 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 policy limits shall be no less than \$1,000,000 each occurrence and \$2,000,000 general aggregate.
- f. 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, to the fullest extent permitted by law, 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, their trustees, officers, agents or employees, 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.

Section 5.07 Builder's Risk

- (1) The Contractor shall procure and maintain, at its own cost and expense, until final acceptance of all work covered by this Agreement 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 covering all risks, with fire, extended coverage, vandalism and malicious mischief coverage. In the event the loss occurs at an occupied facility, the policy shall permit occupancy without the consent of the insurance company. The policy shall cover the cost of removing debris, including demolition as may be legally necessary by operation of any law, ordinance, or regulation, and property of the State held in their care, custody and/or control.
- (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, shall be named as the parties insured under said policy.

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- (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 Agreement or to be a limitation on the nature or extent of such obligations and risks.
- (8) Not less than thirty days prior to the expiration date or renewal date, the Contractor shall supply the University with an updated replacement certificate of insurance and endorsements. The Contractor shall advise the University of any letter or notification that cancels, materially changes, or non- renews the policy and Contractor shall require the insurance carrier(s) to copy the University on any letter or notification that cancels, materially changes, or non- renews the policy. 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 carrier approved by the University, licensed to do business in the State of New York ("admitted" carrier), and rated at least "A-" by A.M. Best Company.

Section 5.08 Effect of Procurement of Insurance

Neither the procurement nor the maintenance of such insurance shall in any way affect or limit the obligations, responsibilities or liabilities of the Contractor hereunder.

Section 5.09 No Third Party Rights

Nothing in this Section or in this Agreement shall create or give to third parties, except the Dormitory Authority of the State of New York, the State of New York and the State University Construction Fund any claim or right of action against the Contractor, the Consultant, the State University of New York, the State University Construction Fund, the Dormitory Authority of the State of New York, or the State of New York and beyond such as may legally exist irrespective of this Section or this Agreement.

Article VI

Minority and Women's Business Enterprises (MWBEs) / Equal Employment Opportunity (EEO) Provisions

The University is required to implement the provisions of New York State Executive Law Article 15-A and 5 NYCRR Parts 142-145 ("MWBE Regulations") for all State contracts as defined therein, with a value (1) in excess of \$25,000 for labor, services, equipment, materials, or any combination of the foregoing or (2) in excess of \$100,000 for real property renovations and construction.

The requirements for the MWBE and EEO programs 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 Agreement 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 applicable 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 Agreement shall forthwith be physically amended to make such insertion or correction.

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Section 7.02 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 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.

Article VIII
Vendor Responsibility

- (1) The Contractor shall at all times during the Agreement term remain responsible. The Contractor shall provide the University with written notice as required by this Article of any issues impacting its responsibility, which shall minimally include updated responses to the it's filed vendor responsibility questionnaire. The Contractor agrees, if requested by the University, to present evidence of its continuing legal authority to do business in New York State, integrity, experience, ability, prior performance and organizational and financial capacity.
- (2) The University, at its sole discretion, reserves the right to suspend any or all activities under this Agreement, at any time, when the University discovers information that calls into question the responsibility of the Contractor. In the event of such suspension, the Contractor will be given written notice outlining the particulars of such suspension. Upon issuance of such notice, the Contractor must comply with the terms of the suspension order. Agreement activity may resume at such time as the University issues a written notice authorizing a resumption of performance under the Agreement.
- (3) Upon written notice to the Contractor, and a reasonable opportunity to be heard with appropriate University officials or staff, the Contractor may be terminated by the University at the Contractor's expense where the Contractor is determined by the University to be non-responsible. In such event, the University may complete the contractual requirements in any manner that the University may deem advisable and pursue available legal or equitable remedies for breach.

In no case shall termination of the Contract by the University be deemed a breach by the University thereof, nor shall the University be liable for any damages or lost profits or otherwise, which may be sustained by Contractor as a result of such termination.

Article IX
Use of Service-Disabled Veteran-Owned Business Enterprises in Contract Performance

Article 17-B of New York State Executive Law acknowledges that Service-Disabled Veteran-Owned Businesses (SDVOBs) strongly contribute to the economies of the State and the nation. As defenders of our nation and in recognition of their economic activity in doing business in New York State, the Contractor for the Project and Work defined in this Agreement, agrees to, at no additional cost to the University, fully comply and cooperate with the University's implementation of New York State Executive Law Article 17-B and provide opportunities for SDVOBs in the fulfillment of the requirements of this Agreement. SDVOBs can be readily identified on the directory of certified businesses at: http://www.ogs.ny.gov/Core/docs/CertifiedNYS_SDVOB.pdf.

State University of New York
Construction Agreement

In accordance with the Memorandum of Understanding (MOU) dated as of August 15, 2019 by and between the Governor, the Office of State Comptroller (State Comptroller), the University and other entities, certain University contracts (Covered Contracts) are subject to review by the State Comptroller.

As such a Covered Contract, the State shall have no liability under this Agreement and this Agreement is not valid, effective or binding until it has been approved by the State Comptroller and filed in his or her office; provided however that if the State Comptroller does not approve or reject this Agreement within the time period specified in the MOU, then this Agreement shall be valid and enforceable without such approval.

This Agreement may be amended only upon the mutual written consent of the Parties, and with the approval of the New York Attorney General and the Office of the State Comptroller if such approval is required.

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

Agency Certification:

In addition to the acceptance of this contract, I also certify that original copies of this signature page will be attached to all other exact copies of this contract.

Contract Number: *Insert Contract Number*

Insert Contractor Name

STATE UNVIERSITY OF NEW YORK

Sign: _____ Date: _____

Sign: _____ Date: _____

Print: _____

Print: _____

Title: _____

Title: _____

APPROVED BY ATTORNEY GENERAL:

**APPROVED BY OFFICE OF THE STATE
COMPTROLLER:**

_____ Date: _____

_____ Date: _____

By:

By:

For Contracts that do not require AG and OSC approval in accordance with the MOU, Campuses should delete those signature lines.

If Corporation, affix Corporate Seal

ACKNOWLEDGMENTS

(ACKNOWLEDGMENT BY AN INDIVIDUAL)

Public

Notary

Public

Notary

Notary Public

State University of New York
Construction Agreement

Schedule I, II, III

SCHEDULE I

Unit Prices

Refer to Section 4.04 of the Agreement for additional information.

<u>Work or Material Description</u>	<u>Amount in Words</u>	<u>Amount in Figures</u>
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"none"

SCHEDULE II Allowance(s)

Refer to Section 4.05 of the Agreement for additional information. The amount(s) indicated below shall be included in the Total Bid amount and their total indicated on the Proposal in the space provided.

<u>Work or Material Description</u>	<u>Amount in Words</u>	<u>Amount in Figures</u>
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"none"

SCHEDULE III Field Order Allowance

Refer to Section 4.05A of the Agreement for additional information. The amount indicated below shall be included in the Total Bid amount and indicated on the Proposal in the space provided

"none"

(in words)

(in figures)

State University of New York
Construction Agreement

Exhibit A

State University of New York
Construction Agreement

Exhibit A-1

State University of New York

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 or State University of New York, whether a Contractor, licensor, licensee, lessor, lessee or any other party; the State University of New York shall hereinafter be referred to as "SUNY"):

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.** In accordance with Section 138 of the State Finance Law, this contract may not be assigned by the Contractor or its right, title or interest therein assigned, transferred, conveyed, sublet or otherwise disposed of without the State's previous written consent, and attempts to do so are null and void. Notwithstanding the foregoing, such prior written consent of an assignment of a contract let pursuant to Article XI of the State Finance Law may be waived at the discretion of SUNY and with the concurrence of the State Comptroller where the original contract was subject to the State Comptroller's approval, where the assignment is due to a reorganization, merger or consolidation of the Contractor's business entity or enterprise. SUNY retains its right to approve an assignment and to require that any Contractor demonstrate its responsibility to do business with SUNY. The Contractor may, however, assign its right to receive payments without SUNY's prior written consent unless this contract concerns Certificates of Participation pursuant to Article 5-A of the State Finance Law.

3. **COMPTROLLER'S APPROVAL.** In accordance with Section 112 of the State Finance Law and Section 355 of the Education Law, if this contract exceeds \$250,000, or, if this is an amendment for any amount to a contract which, as so amended, exceeds said statutory amount, or if, by this contract, the State agrees to give something other than money when the value or reasonably estimated value of such consideration exceeds \$25,000, it shall not be valid, effective or binding upon the State, and the State shall bear no liability, until it has been approved by the State Comptroller and filed in his or her office, or the pertinent pre-audit review period has elapsed. However, such pre-approval shall not be required for any contract established as a centralized contract through the Office of General Services or for a purchase order or other transaction issued under such centralized contract.

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, nor subject any individual to harassment, because of age, race, creed, color, national origin, sexual orientation, gender identity or expression, military status, sex, disability, predisposing genetic characteristics, familial status, marital status, or domestic violence victim status or because the individual has opposed any practices forbidden under the Human Rights Law or has filed a complaint, testified, or assisted in any proceeding under the Human Rights Law. 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 the State of any State- 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 upon the submission of competitive bids, Contractor affirms, under penalty of perjury, 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 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, fee 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 SUNY, 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 well as SUNY and any other agencies 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.**

(a) Identification Number(s). Every invoice or New York State Claim for Payment submitted to SUNY 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 SUNY or the State 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 SUNY 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.**

In accordance with Section 312 of the Executive Law and 5 NYCRR Part 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:

(a) The Contractor will not discriminate against employees or applicants for employment because of race, creed, color, national origin, sex, age, disability or marital status, shall make and document its conscientious and active efforts to employ and utilize minority group members and women in its workforce on State contracts 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, upgrading, demotion, transfer, layoff, or termination and rates of pay or other forms of compensation;

(b) 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

(c) 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 because of race, creed, color, national origin, sex, age, disability or marital status.

Contractor will include the provisions of "a," "b," and "c" 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 clause. 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 certifications, 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 the Contractor either (a) has 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 of the New York 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

Albany, NY 12245
Tel: 518-292-5100
Fax: 518-292-5884
email: opa@esd.ny.gov

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
633 Third Avenue
New York, NY 10017
212-803-2414

email: mwbecertification@esd.ny.gov
<https://ny.newnycontracts.com/FrontEnd/SupplierSearchPublic.asp>

The Omnibus Procurement Act of 1992 (Chapter 844 of the Laws of 1992, codified in State Finance Law § 139-i and Public Authorities Law § 2879(3)(n)-(p)) 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 Service 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 the State may seek to obtain offset credits from foreign countries as a result of this contract and agrees to cooperate with the State 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, codified in State Finance Law § 165(6) and Public Authorities Law § 2879(5)) require that they be denied contracts which they would otherwise obtain.

NOTE: As of October 2019, the list of discriminatory jurisdictions subject to this provision includes the states of South Carolina, Alaska, West Virginia, Wyoming, Louisiana and Hawaii.

22. COMPLIANCE WITH BREACH NOTIFICATION AND DATA SECURITY LAWS. Contractor shall comply with the provisions of the New York State Information Security Breach and Notification Act (General Business Law § 899-aa; State Technology Law § 208) and commencing March 21, 2020 shall also comply with General Business Law § 899-bb.

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 (as amended by Chapter 10 of the Laws of 2006), 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 contract is a "procurement contract" as defined by State Finance Law §§ 139-j and 139-k, by signing this contract the Contractor certifies and affirms that all disclosures made in accordance with State Finance Law §§ 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 contract by providing written notification to the Contractor in accordance with the terms of the contract.

26. CERTIFICATION OF REGISTRATION TO COLLECT SALES AND COMPENSATING USE TAX BY CERTAIN STATE CONTRACTORS, AFFILIATES

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

29. 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.

30. (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.

31. Hospital Retained Authority: Hospital Retained Authority: The Hospital retains direct, independent authority over the appointment and/or dismissal, in its sole discretion, of the facility's management level employees (including but not limited to, the Facility/Service Administrator/Director, the Medical Director, the Director of Nursing, the Chief Executive Officer, the Chief Financial Officer and the Chief Operating Officer) and all licensed or certified health care staff. The Hospital retains the right to adopt and approve, at its sole discretion, the facility's operating and capital budgets. The Hospital retains independent control over and physical possession of the facility's books and records. The Hospital retains independent control over and physical possession of the facility's operating policies and procedures. The Hospital retains full authority and responsibility for, and control over, the operations and management of the facility. The Hospital retains the right and authority to independently adopt, approve and enforce, in its sole discretion, policies affecting the facility's delivery of health care services. The Hospital retains the right to independently adopt, approve and enforce, at its sole discretion, the disposition of assets and authority to incur debts. The Hospital retains the right to approve, at its sole discretion, contracts for administrative services, management and/or clinical services. The Hospital retains the right to approve, at its sole discretion, any facility debt. The Hospital retains the right to approve, at its sole discretion, settlements of administrative proceeding or litigation to which the facility is a party. No powers specifically reserved to the Hospital may be delegated to, or shared by, the Contractor or any other person. In addition, if there is any disagreement between the parties to this Agreement regarding control between the Hospital and the Contractor, the terms of this Section shall control.

AND SUBCONTRACTORS. To the extent this contract is a contract as defined by Tax Law § 5-a, if the Contractor fails to make the certification required by Tax Law § 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 contract, if SUNY determines that such action is in the best interests of the State.

27. IRAN DIVESTMENT ACT. By entering into this contract, Contractor certifies in accordance with State Finance Law §165-a that it is not on the "Entities Determined to be Non-Responsive Bidders/Offerers pursuant to the New York State Iran Divestment Act of 2012" ("Prohibited Entities List") posted at:

<https://ogs.ny.gov/list-entities-determined-be-non-responsive-biddersofferers-pursuant-nys-iran-divestment-act-2012>

Contractor further certifies that it will not utilize on this contract any subcontractor that is identified on the Prohibited Entities List. Contractor agrees that should it seek to renew or extend this contract, it must provide the same certification at the time the contract is renewed or extended. Contractor also agrees that any proposed Assignee of this contract will be required to certify that it is not on the Prohibited Entities List before the contract assignment will be approved by the State.

During the term of the contract, should SUNY receive information that a person (as defined in State Finance Law §165-a) is in violation of the above-referenced certifications, SUNY will review such information and offer the person an opportunity to respond. If the person fails to demonstrate that it has ceased its engagement in the investment activity which is in violation of the Act within 90 days after the determination of such violation, then SUNY shall take such action as may be appropriate and provided for by law, rule, or contract, including, but not limited to, imposing sanctions, seeking compliance, recovering damages, or declaring the Contractor in default.

SUNY reserves the right to reject any bid, request for assignment, renewal or extension for an entity that appears on the Prohibited Entities List prior to the award, assignment, renewal or extension of a contract, and to pursue a responsibility review with respect to any entity that is awarded a contract and appears on the Prohibited Entities list after contract award.

28. ADMISSIBILITY OF REPRODUCTION OF CONTRACT. Notwithstanding the best evidence rule or any other legal principle or rule of evidence to the contrary, the Contractor acknowledges and agrees that it waives any and all objections to the admissibility into evidence at any court proceeding or to the use at any examination before trial of an electronic reproduction of this contract, in the form approved by the State Comptroller, if such approval was required, regardless of whether the original of said contract is in existence.

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; (c) and (d) 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 for a total expenditure in excess of \$25,000 providing for services, including non-staffing expenditures, supplies or materials of any kind between a State agency and a prime contractor, in which a portion of the prime contractor's obligation under the State contract is undertaken or assumed by a business enterprise not controlled by the prime 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 fifteen million dollars (\$15,000,000), 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 fifteen million dollars (\$15,000,000.00), 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) Form 108 - Staffing Plan To ensure compliance with this Section, the Contractor shall submit a staffing plan to document the composition of the proposed workforce to be utilized in the performance of the Contract by the specified categories listed, including ethnic background, gender, and Federal occupational categories. Contractors shall complete the Staffing plan form and submit it as part of their bid or proposal or within a reasonable time, but no later than the time of award of the contract.

(e) Form 112 - Workforce Employment Utilization Report ("Workforce Report")

(i) Once a contract has been awarded and during the term of Contract, Contractor is responsible for updating and providing notice to SUNY of any changes to the previously submitted Staffing Plan. This information is to be submitted on a quarterly basis during the term of the contract to report the actual workforce utilized in the performance of the contract by the specified categories listed including ethnic background, gender, and Federal occupational categories. The Workforce Report must be submitted to report this information.

(ii) Separate forms shall be completed by Contractor and any subcontractor performing work on the Contract.

(iii) In limited instances, Contractor may not be able to separate out the

workforce utilized in the performance of the Contract from Contractor's and/or subcontractor's total workforce. When a separation can be made, Contractor shall submit the Workforce Report and indicate that the information provided related to the actual workforce utilized on the Contract. When the workforce to be utilized on the contract cannot be separated out from Contractor's and/or subcontractor's total workforce, Contractor shall submit the Workforce Report and indicate that the information provided is Contractor's total workforce during the subject time frame, not limited to work specifically under the contract.

(f) Contractor shall comply with the provisions of the Human Rights Law, all other State and Federal statutory and constitutional non-discrimination provisions. Contractor and subcontractors shall not discriminate against any employee or applicant for employment because of race, creed (religion), color, sex, national origin, sexual orientation, military status, age, disability, predisposing genetic characteristic, marital status or domestic violence victim status, and shall also follow the requirements of the Human Rights Law with regard to non-discrimination on the basis of prior criminal conviction and prior arrest.

(g) 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.

(h) 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.

(i) 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.

(j) 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.

(k) 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

3. 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.

4. 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.

5. 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.

6. MWBE Utilization Plan.

(a) The Contractor represents and warrants that Contractor has submitted an MWBE Utilization Plan prior to the execution of the contract.

(b) MWBE Utilization Plan (Form 7557-107).

Contractors are required to submit a Utilization Plan on Form 7557-107 with their bid or proposal. Complete the following steps to prepare the Utilization Plan:

- i. list NYS Certified minority- and women-owned business enterprises which the Contractor intends to use to perform the State contract;
- ii. insert a description of the contract scope of work which the Contractor intends to structure to increase the participation by NYS Certified minority- and women-owned enterprises on the State contract;
- iii. insert 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 NYS Certified minority- or women-owned business; and

(c) Any modifications or changes to the agreed participation by NYS Certified MWBEs after the Contract Award and during the term of the contract must be reported on a revised MWBE Utilization Plan and submitted to the SUNY University-wide MWBE Program Office.

(d) The University will review the MWBE Utilization Plan and will issue the Contractor a written notice of acceptance or deficiency within twenty (20) day of its receipt. A notice of deficiency shall include the:

- i. list NYS Certified minority- and women-owned business enterprises which the

Contractor intends to use to perform the State contract;

- ii. name of any MWBE which is not acceptable for the purpose of complying with the MWBE participation goals;

- iii. reasons why it is not an acceptable element of the Contract scope of work which the MWBE Program Office has determined can be reasonably structured by the Contractor to increase the likelihood of participation in the Contract by MWBEs; and
- iv. other information which the MWBE Program Office determines to be relevant to the MWBE Utilization Plan.

(e) The Contractor shall respond to the notice of deficiency within seven (7) business days of receipt by submitting to the University a written remedy in response to the notice of deficiency.

- i. If the written remedy that is submitted is not timely or is found to be inadequate, the University-wide MWBE Program Office shall notify the Contractor and direct the Contractor to submit, within five (5) business days, a request for partial or total waiver of MWBE participation goals on forms provided by the University-wide MWBE Program Office.

- ii. Failure to file the waiver form in a timely manner may be grounds for disqualification of the bid or proposal.

(f) The University may disqualify a Contractor as being non-responsive under the following circumstances:

- i. If a Contractor fails to submit a MWBE Utilization Plan;
- ii. If a Contractor fails to submit a written remedy to a notice of deficiency in a MWBE Utilization Plan;
- iii. If a Contractor fails to submit a request for waiver; or

iv. If the MWBE Program Office determines that the Contractor has failed to document Good Faith Efforts.

(g) Contractor agrees to use such MWBE Utilization Plan for the performance of MWBEs on the Contract pursuant to the prescribed MWBE goals set forth in Section III-A of this Appendix.

(h) Contractor further agrees that a failure to submit and/or use such MWBE Utilization Plan shall constitute a material breach of the terms of the Contract. Upon the occurrence of such a material breach, SUNY shall be entitled to any remedy provided herein, including but not limited to, a finding of Contractor non-responsiveness.

7. Waivers.

(a) For Waiver Requests Contractor should use (Form 7557-114) – Waiver Request.

(b) If the Contractor, after making good faith efforts, is unable to comply with MWBE goals, the Contractor may submit a Request for Waiver form documenting good faith efforts by the Contractor to meet such goals. If the documentation included with the waiver request is complete the University shall evaluate the request and issue a written notice of acceptance or denial within twenty (20) days of receipt.

(c) If University, upon review of the MWBE Utilization Plan and updated Quarterly MWBE Contractor Compliance Reports determines that Contractor is failing or refusing to comply with the Contract goals and no waiver has been issued in regards to such non-compliance, the University may issue a notice of deficiency to the Contractor. The contractor must respond to the notice of deficiency within seven (7) business days of receipt. Such response may include a request for partial or total waiver of MWBE Contract Goals.

8. MWBE Contractor Compliance Report.

Contractor is required to submit an MWBE Contractor Compliance Report (Form 7557-112) to the University by the 5th day following each end of quarter over the term of the Contract documenting the progress made towards achievement of the MWBE goals of the Contract. Compliance Reports for construction contracts (Form 7557-110) must be submitted on a monthly basis.

9. 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 an 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 23 percent (23 %) for Certified Minority-Owned Business Enterprises and 7 percent (7 %) for Certified Women-Owned Business Enterprises.

10. 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.

Failure to comply with all of the requirements herein may result in a finding of non-responsiveness, non-responsibility and/or a breach of contract, leading to the withholding of funds or such other actions, remedies or enforcement proceedings as allowed by the Contract.

11. 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

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.

SUNY PURCHASE COLLEGE

PROJECT: Neuberger Museum Courtyard, Purchase College
Progress/Final Estimate Detail

Date 3/5/2021

DESCRIPTION OF WORK	UNIT			
	QNTY	UNIT		
<u>GENERAL CONDITIONS</u>				
TOTAL GENERAL CONDITIONS				
<u>DIVISION 2 SELECTIVE REMOVAL</u>				
02070 - SAW CUTTING AND REMOVAL OF THE EXISTING INLET PIPES AND PLUGGING OF PIPES IN THE BASEMENT	4	EA		
DEMOLITION AND REMOVAL OF EXIST PAVEMENT TILES (37'X60' APPROX.)	2,350	SF		
REMOVE EXIST POLYSTERENE FILL (37'x60' APPROX.)	148	SF		
DEMOLITION AND REMOVAL OF PLANTER WALL (2'-6" HT)	84	CF		
DEMOLITION AND REMOVAL OF WALL (8' HT)	135	CF		
DEMOLITION REMOVAL OF EXIST GATE	1	LS		
REMOVE, SALVAGE AND REINSTAL CYCLE STAND, PLANT GRATING, SIGNAGE		LS		
REMOVAL AND REINSTALL ART WORK	2	EA		
DEMOLITION AND REMOVAL OF 2' DRAINAGE TRNECH FOR 4" PIPE	55	LF		
REMOVAL OF DRAINAGE PIPE IN THE BASEMENT		LS		
REINSTALLATION OF MISCELLANEOUS ITEMS (ELECTRICAL, HVAC, FIRE FIGHTING EQUIPMENT, PAINTINGS RACK/RAIL, ANY OTHER EQUIPMENT)		LS		
<u>DIVISION 3 CONCRETE</u>				
LIGHT WEIGHT CONCRETE FILL (2100 SF X 3" AVG) (APPROX.) 1" MORTAR BED FOR NEW COURTYARD	26	CY		
BRICK-TILES	184	CF		
NEW COURTYARD BRICK-TILE	2,468	SF		
NEW FACE BRICK	85	SF		
NDS PRO-SERIES 12" WIDE CHANNEL DRAIN	105	LF		
PREMOLDED JOINT FILLER	105	LF		
4" DIA DRAINAGE PIPE	60	LF		
GRAVEL FOR 5" SUB-BASE (BELOW DRAINAGE PIPES)	150	SF		
LANDFILL FOR MAINTAINING SLOPE WITHIN CONTRACT AREA	75	CY		
12" WIDE CHANNEL GRATE	100	LF		
12" WIDE CHANNEL SECURITY GRIP	75	EA		
SQUARE TILES MATCHING TO EXISTING (12 X 12)	200	SF		
<u>DIVISION 5 STRUCTURAL STEEL</u>				
5 1/4"x5 1/2"x1/4" STAINLESS STEEL SHELF ANGLE FOR EXISTING FACE BRICK MASONRY SUPPORT	60	LF		
HILTI HY-200R ANCHOR BOLTS	60	EA		
<u>DIVISION 7 THERMAL AND MOISTURE PROTECTION</u>				
IRMA (INVERTED ROOF MEMBRANE ASSEMBLY) SYSTEM COMPLETE WITH FLASHING	2,350	SF		
TOTAL				
The trade breakdown and qauntity define scope and is for information only. Contrcator is responsible to verify its own quantities.				
GRAND TOTAL				